

# Accu-P<sup>®</sup> MP Medical Grade



## General Specifications



### GENERAL DESCRIPTION

KYOCERA AVX has a wide range of thin-film chip capacitors that feature highly repeatable performance, extremely accurate capacitance, and very high Q factor. These features have now been applied to the new Accu-P<sup>®</sup> MP series, which can provide all of these benefits in a thin-film chip capacitor for medical and healthcare RF signal and power applications. These capacitors provide ultra-tight capacitive tolerance, low ESR at very high frequency, and high stability with respect to temperature, time, frequency, and voltage variation. The Accu-P<sup>®</sup> MP is available in both Sn/Pb and RoHS compliant termination styles.

### APPLICATIONS

- Embedded medical systems
- Medical systems featuring RF Signals
- Medical power applications which require extremely high accuracy

### PRODUCT ADVANTAGES

- Extremely tight capacitive tolerance
- Low ESR and high Q at very high frequencies
- Improved RF power handling capability
- Sn/Pb and RoHS compliant termination styles available.

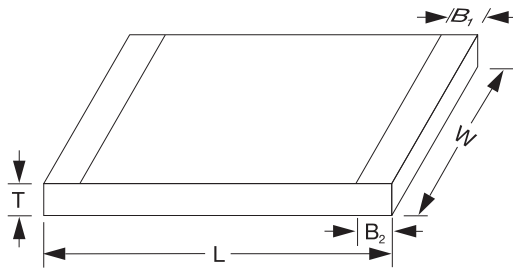
### HOW TO ORDER

|   |  |   |  |   |   |                           |                      |
|---|--|---|--|---|---|---------------------------|----------------------|
| <b>MP01</b>                               | <b>Z</b>   | <b>J</b>  | <b>100</b>   | <b>A</b>  | <b>B</b>  | <b>W</b>                  | <b>G</b>             |
|   |  |   |  |   |   |                           |                      |
| <b>Size</b>                               | <b>Rated Voltage</b>                                 | <b>Dielectric Code</b>  | <b>Capacitance</b>   | <b>Tolerance for C≤2.0pF*</b>   | <b>Accu-P Technology Type</b>   | <b>Termination Finish</b> | <b>Medical Grade</b> |
| MP01 = 0201<br>MP02 = 0402<br>MP03 = 0603 | Z = 10V<br>Y = 16V<br>3 = 25V<br>5 = 50V<br>1 = 100V | J = 0±30ppm/°C<br>K = 0±60ppm/°C  | Capacitance expressed in pF. (2 significant digits + number of zeros)<br><b>for values &lt;10pF</b> , letter R denotes decimal point.<br>Example:<br>68pF = 680<br>8.2pF = 8R2 | Z = ±0.01pF<br>P = ±0.02pF<br>Q = ±0.03pF<br>A = ±0.05pF<br>B = ±0.1pF<br>C = ±0.25pF | <b>for C≤3.0pF</b><br>Q = ±0.03pF<br>A = ±0.05pF<br>B = ±0.1pF<br>C = ±0.25pF | W = Sn90Pb10<br>S = Sn100 |                      |
| For 01005 case size, contact factory      |  | See <i>Capacitance Voltage Range Chart for available Temperature Coefficients</i> | <i>For Capacitance values which require more than 2 significant figures, contact factory.</i>  | <b>for C≤5.6pF</b><br>A = ±0.05pF<br>B = ±0.1pF<br>C = ±0.25pF                        |   |                           |                      |
|   |  |   |  | <b>for 5.6pF&lt;C&lt;10pF</b><br>B = ±0.1pF<br>C = ±0.25pF<br>D = ±0.5pF              |   |                           |                      |
|   |  |   |  | <b>for C≥10pF</b><br>F = ±1%<br>G = ±2%<br>J = ±5%                                    |   |                           |                      |



*For RoHS compliant products, please select correct termination style.*

## General Specifications



### ACCU-P<sup>®</sup> MP (Medical Thin-Film Chip Capacitors)

|                      | 0201 (MP01)*                  | 0402 (MP02)*   | 0603 (MP03)*               |
|----------------------|-------------------------------|--|----------------------------|
| <b>L</b>             | 0.05<br>(0.023±0.002)         | 1.00±0.10<br>(0.039±0.004)   | 1.60±0.10<br>(0.063±0.004) |
| <b>W</b>             | 0.325±0.050<br>(0.0128±0.002) | 0.55±0.07<br>(0.022±0.003)   | 0.81±0.10<br>(0.032±0.004) |
| <b>T</b>             | 0.225±0.050<br>(0.009±0.002)  | 0.40±0.10<br>(0.016±0.004)   | 0.63±0.10<br>(0.025±0.004) |
| <b>B<sub>1</sub></b> | 0.10±0.10<br>(0.004±0.004)    | 0.00 <sup>+0.1</sup> <sub>-0.0</sub><br>(0.000 <sup>+0.004</sup> <sub>-0.000</sub> ) | 0.35±0.15<br>(0.014±0.006) |
| <b>B<sub>2</sub></b> | 0.15±0.05<br>(0.006±0.002)    | 0.20±0.10<br>(0.008±0.004)   | 0.35±0.15<br>(0.014±0.006) |

\*Mount Black Side Up

DIMENSIONS: millimeters (inches)

## ELECTRICAL SPECIFICATIONS

|   |   |
|---|---|
| Operating and Storage Temperature Range | -55°C to +125°C   |
| Temperature Coefficients <sup>(1)</sup> | 0 ± 30ppm/°C dielectric code "J" / 0 ± 60ppm/°C dielectric code "K"                                     |
| Capacitance Measurement                 | 1 MHz ±100 kHz; 1.0 Volt ±0.2Vrms   |
| Insulation Resistance (IR)              | ≥10 <sup>11</sup> Ohms (≥10 <sup>10</sup> Ohms for 0201 and 0402 size)                                  |
| Q Factor                                | Not less than 1000 for Capacitance values > 0.5 pF<br>Not less than 500 for Capacitance values ≤ 0.5 pF |
| Proof Voltage                           | 8 x U <sub>R</sub> for 5 secs.  |
| Aging Characteristic                    | Zero  |
| Dielectric Absorption                   | 0.01%   |

## Signal and Power Type Capacitors

### Accu-P® Capacitance Ranges (pF)

#### TEMP. COEFFICIENT CODE

“J” = 0±30ppm/°C (-55°C to +125°C)<sup>(2)</sup> “K” = 0±60ppm/°C (-55°C to +125°C)<sup>(2)</sup>

| Size                     |          | 0201 |    |    |    | 0402 |    |    |    | 0603 |    |    |    |     |
|--------------------------|----------|------|----|----|----|------|----|----|----|------|----|----|----|-----|
| Size Code                |          | 10   | 16 | 25 | 50 | 10   | 16 | 25 | 50 | 10   | 16 | 25 | 50 | 100 |
| Cap in pF <sup>(1)</sup> | Cap code |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 0.05                     | — R05    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 0.1                      | — OR1    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 0.2                      | — OR2    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 0.3                      | — OR3    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 0.4                      | — OR4    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 0.5                      | — OR5    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 0.6                      | — OR6    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 0.7                      | — OR7    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 0.8                      | — OR8    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 0.9                      | — OR9    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 1.0                      | — 1R0    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 1.1                      | — 1R1    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 1.2                      | — 1R2    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 1.3                      | — 1R3    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 1.4                      | — 1R4    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 1.5                      | — 1R5    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 1.6                      | — 1R6    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 1.7                      | — 1R7    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 1.8                      | — 1R8    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 1.9                      | — 1R9    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 2.0                      | — 2R0    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 2.1                      | — 2R1    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 2.2                      | — 2R2    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 2.3                      | — 2R3    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 2.4                      | — 2R4    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 2.5                      | — 2R5    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 2.6                      | — 2R6    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 2.7                      | — 2R7    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 2.8                      | — 2R8    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 2.9                      | — 2R9    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 3.0                      | — 3R0    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 3.1                      | — 3R1    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 3.2                      | — 3R2    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 3.3                      | — 3R3    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 3.4                      | — 3R4    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 3.5                      | — 3R5    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 3.6                      | — 3R6    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 3.7                      | — 3R7    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 3.8                      | — 3R8    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 3.9                      | — 3R9    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 4.0                      | — 4R0    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 4.1                      | — 4R1    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 4.2                      | — 4R2    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 4.3                      | — 4R3    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 4.4                      | — 4R4    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 4.5                      | — 4R5    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 4.6                      | — 4R6    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 4.7                      | — 4R7    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 5.1                      | — 5R1    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 5.6                      | — 5R6    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 6.2                      | — 6R2    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 6.8                      | — 6R8    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 7.5                      | — 7R5    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 8.2                      | — 8R2    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 9.1                      | — 9R1    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 10.0                     | — 100    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 11.0                     | — 110    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 12.0                     | — 120    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 13.0                     | — 130    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 14.0                     | — 140    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 15.0                     | — 150    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 16.0                     | — 160    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 17.0                     | — 170    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 18.0                     | — 180    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 19.0                     | — 190    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 20.0                     | — 200    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 21.0                     | — 210    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 22.0                     | — 220    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 24.0                     | — 240    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 27.0                     | — 270    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 30.0                     | — 300    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 33.0                     | — 330    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 39.0                     | — 390    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 47.0                     | — 470    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 56.0                     | — 560    |      |    |    |    |      |    |    |    |      |    |    |    |     |
| 68.0                     | — 680    |      |    |    |    |      |    |    |    |      |    |    |    |     |

Temperature Coefficients: J = 0±30ppm/°C (-55°C to +125°C)<sup>(2)</sup>; K = 0±60ppm/°C (-55°C to +125°C)<sup>(2)</sup>

<sup>(1)</sup> For capacitance values higher than listed in table, please consult factory.

<sup>(2)</sup> TC shown is per EIA/IEC Specifications.

☐ These values are produced with “K” temperature coefficient code only.

# Accu-P<sup>®</sup> MP Medical Grade



## 0201 Typical Electrical Tables

| Part Number                                 | Capacitance (pF) | ESR Max. mOhm | SRF GHz | Q Standard Value @ 1GHz |      | Frequency 900MHz |        |                 | Frequency 1900MHz |        |                 | Frequency 2400MHz |        |                 |
|---|------------------|---------------|---------|-------------------------|------|------------------|--------|-----------------|-------------------|--------|-----------------|-------------------|--------|-----------------|
|   |                  |               |         | Typ.                    | Min. | Ceff (pF)        | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) |
|   |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| <b>U<sub>p</sub> = 10V (Voltage code Z)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP01Z#R05-B--                               | 0.05             | N/A           | 20.9    | 599                     | 402  | 0.055            | 650    | 3220            | 0.056             | 265    | 4010            | 0.057             | 195    | 4450            |
| MP01Z#OR1-B--                               | 0.1              | 6000          | 19.4    | 574                     | 316  | 0.110            | 614    | 3682            | 0.112             | 246    | 3036            | 0.113             | 188    | 3113            |
| MP01Z#R15-B--                               | 0.15             | 4800          | 17.9    | 510                     | 280  | 0.163            | 550    | 2087            | 0.166             | 220    | 2404            | 0.168             | 170    | 2441            |
| MP01Z#OR2-B--                               | 0.2              | 3600          | 16.4    | 445                     | 245  | 0.216            | 520    | 1693            | 0.220             | 210    | 1971            | 0.223             | 160    | 1970            |
| MP01Z#R25-B--                               | 0.25             | 2700          | 15.5    | 436                     | 240  | 0.262            | 510    | 1371            | 0.268             | 204    | 1604            | 0.272             | 153    | 1646            |
| MP01Z#OR3-B--                               | 0.3              | 1800          | 14.6    | 427                     | 235  | 0.309            | 500    | 1149            | 0.316             | 199    | 1337            | 0.320             | 146    | 1421            |
| MP01Z#R35-B--                               | 0.35             | 1650          | 14.1    | 423                     | 232  | 0.360            | 494    | 1001            | 0.369             | 196    | 1177            | 0.374             | 144    | 1265            |
| MP01Z#OR4-B--                               | 0.4              | 1500          | 12.5    | 418                     | 230  | 0.411            | 489    | 874             | 0.421             | 193    | 1038            | 0.427             | 142    | 1129            |
| MP01Z#R45-B--                               | 0.45             | 1400          | 11.9    | 413                     | 227  | 0.461            | 484    | 819             | 0.473             | 191    | 972             | 0.481             | 140    | 1066            |
| MP01Z#OR5-B--                               | 0.5              | 1300          | 11.3    | 408                     | 224  | 0.512            | 478    | 765             | 0.526             | 188    | 906             | 0.535             | 138    | 1003            |
| MP01Z#R55-B--                               | 0.55             | 1200          | 10.9    | 403                     | 222  | 0.563            | 473    | 710             | 0.578             | 186    | 840             | 0.588             | 137    | 940             |
| MP01Z#OR6-B--                               | 0.6              | 1100          | 10.4    | 398                     | 219  | 0.614            | 468    | 663             | 0.631             | 183    | 791             | 0.642             | 135    | 882             |
| MP01Z#R65-B--                               | 0.65             | 1025          | 10.0    | 394                     | 217  | 0.664            | 462    | 624             | 0.683             | 181    | 742             | 0.695             | 133    | 825             |
| MP01Z#OR7-B--                               | 0.7              | 950           | 9.5     | 389                     | 214  | 0.715            | 457    | 580             | 0.735             | 178    | 693             | 0.749             | 131    | 767             |
| MP01Z#R75-B--                               | 0.75             | 900           | 9.3     | 384                     | 211  | 0.766            | 452    | 557             | 0.788             | 176    | 664             | 0.802             | 129    | 729             |
| MP01Z#OR8-B--                               | 0.8              | 850           | 9.1     | 379                     | 209  | 0.817            | 446    | 534             | 0.840             | 173    | 635             | 0.856             | 127    | 692             |
| MP01Z#R85-B--                               | 0.85             | 825           | 8.9     | 374                     | 206  | 0.868            | 441    | 511             | 0.893             | 171    | 606             | 0.909             | 126    | 654             |
| MP01Z#OR9-B--                               | 0.9              | 800           | 8.8     | 370                     | 203  | 0.918            | 436    | 487             | 0.945             | 168    | 577             | 0.963             | 124    | 616             |
| MP01Z#R95-B--                               | 0.95             | 775           | 8.6     | 365                     | 201  | 0.969            | 430    | 464             | 0.998             | 166    | 548             | 1.016             | 122    | 579             |
| MP01Z#1R0-B--                               | 1                | 750           | 8.4     | 360                     | 198  | 1.020            | 425    | 441             | 1.050             | 163    | 519             | 1.070             | 120    | 541             |
| Contact Factory                             | 1.05             | 725           | 8.2     | 358                     | 197  | 1.078            | 421    | 426             | 1.112             | 161    | 502             | 1.134             | 119    | 523             |
| MP01Z#1R1-B--                               | 1.1              | 700           | 8.0     | 355                     | 195  | 1.135            | 418    | 410             | 1.173             | 159    | 486             | 1.199             | 117    | 505             |
| Contact Factory                             | 1.15             | 650           | 7.8     | 353                     | 194  | 1.193            | 414    | 395             | 1.235             | 157    | 469             | 1.263             | 116    | 488             |
| MP01Z#1R2-B--                               | 1.2              | 600           | 7.6     | 350                     | 193  | 1.251            | 411    | 379             | 1.296             | 155    | 452             | 1.327             | 115    | 470             |
| Contact Factory                             | 1.25             | 580           | 7.5     | 348                     | 191  | 1.308            | 407    | 364             | 1.358             | 153    | 436             | 1.392             | 114    | 452             |
| MP01Z#1R3-B--                               | 1.3              | 560           | 7.4     | 345                     | 190  | 1.355            | 403    | 348             | 1.419             | 151    | 419             | 1.456             | 112    | 434             |
| Contact Factory                             | 1.35             | 545           | 7.3     | 343                     | 189  | 1.424            | 400    | 333             | 1.481             | 149    | 402             | 1.520             | 111    | 416             |
| MP01Z#1R4-B--                               | 1.4              | 530           | 7.2     | 340                     | 187  | 1.481            | 396    | 317             | 1.542             | 147    | 386             | 1.585             | 110    | 398             |
| Contact Factory                             | 1.45             | 515           | 7.1     | 338                     | 186  | 1.539            | 393    | 302             | 1.604             | 145    | 369             | 1.649             | 109    | 381             |
| MP01Z#1R5-B--                               | 1.5              | 500           | 7.0     | 335                     | 184  | 1.597            | 389    | 287             | 1.665             | 144    | 353             | 1.713             | 107    | 363             |
| Contact Factory                             | 1.55             | 490           | 6.8     | 332                     | 183  | 1.642            | 386    | 282             | 1.714             | 142    | 347             | 1.764             | 106    | 358             |
| MP01Z#1R6-B--                               | 1.6              | 480           | 6.7     | 330                     | 181  | 1.687            | 382    | 277             | 1.762             | 141    | 342             | 1.815             | 105    | 352             |
| Contact Factory                             | 1.65             | 470           | 6.6     | 327                     | 180  | 1.732            | 378    | 272             | 1.810             | 140    | 337             | 1.866             | 104    | 347             |
| MP01Z#1R7-B--                               | 1.7              | 460           | 6.5     | 324                     | 178  | 1.777            | 375    | 267             | 1.859             | 138    | 331             | 1.917             | 103    | 342             |
| Contact Factory                             | 1.75             | 455           | 6.4     | 321                     | 176  | 1.822            | 371    | 262             | 1.907             | 137    | 326             | 1.968             | 102    | 337             |
| MP01Z#1R8-B--                               | 1.8              | 450           | 6.3     | 318                     | 175  | 1.866            | 367    | 257             | 1.955             | 136    | 321             | 2.018             | 101    | 331             |
| Contact Factory                             | 1.85             | 435           | 6.2     | 315                     | 173  | 1.911            | 364    | 252             | 2.003             | 134    | 316             | 2.069             | 100    | 326             |
| MP01Z#1R9-B--                               | 1.9              | 425           | 6.2     | 312                     | 172  | 1.956            | 360    | 247             | 2.052             | 133    | 310             | 2.12              | 99     | 321             |
| Contact Factory                             | 1.95             | 412           | 6.1     | 309                     | 170  | 2.001            | 357    | 242             | 2.100             | 132    | 305             | 2.171             | 98     | 316             |
| MP01Z#2R0-B--                               | 2                | 400           | 6.0     | 306                     | 168  | 2.046            | 353    | 237             | 2.148             | 131    | 300             | 2.222             | 97     | 310             |
| MP01Z#2R1-B--                               | 2.1              | 380           | 5.9     | 301                     | 166  | 2.150            | 348    | 232             | 2.263             | 128    | 293             | 2.344             | 95     | 303             |
| MP01Z#2R2-B--                               | 2.2              | 365           | 5.7     | 296                     | 163  | 2.254            | 343    | 227             | 2.377             | 125    | 287             | 2.467             | 93     | 296             |
| MP01Z#2R3-B--                               | 2.3              | 350           | 5.6     | 292                     | 160  | 2.358            | 337    | 222             | 2.491             | 122    | 281             | 2.590             | 91     | 289             |
| MP01Z#2R4-B--                               | 2.4              | 340           | 5.5     | 287                     | 158  | 2.462            | 332    | 217             | 2.606             | 120    | 274             | 2.712             | 89     | 282             |
| MP01Z#2R5-B--                               | 2.5              | 330           | 5.4     | 282                     | 155  | 2.566            | 327    | 212             | 2.720             | 117    | 268             | 2.835             | 87     | 275             |
| MP01Z#2R6-B--                               | 2.6              | 320           | 5.3     | 277                     | 152  | 2.670            | 322    | 207             | 2.834             | 114    | 262             | 2.958             | 85     | 268             |
| MP01Z#2R7-B--                               | 2.7              | 310           | 5.2     | 272                     | 150  | 2.773            | 317    | 202             | 2.949             | 112    | 255             | 3.080             | 83     | 261             |
| MP01Z#2R8-B--                               | 2.8              | 300           | 5.1     | 269                     | 148  | 2.878            | 312    | 199             | 3.066             | 110    | 252             | 3.209             | 81     | 258             |
| MP01Z#2R9-B--                               | 2.9              | 295           | 5.0     | 265                     | 146  | 2.983            | 308    | 196             | 3.184             | 108    | 248             | 3.337             | 80     | 254             |
| MP01Z#3R0-B--                               | 3                | 290           | 4.9     | 261                     | 144  | 3.088            | 304    | 193             | 3.301             | 106    | 245             | 3.465             | 78     | 251             |
| MP01Z#3R1-B--                               | 3.1              | 285           | 4.8     | 257                     | 141  | 3.196            | 299    | 190             | 3.419             | 105    | 241             | 3.593             | 77     | 247             |
| MP01Z#3R2-B--                               | 3.2              | 285           | 4.7     | 253                     | 139  | 3.297            | 295    | 187             | 3.536             | 103    | 238             | 3.722             | 76     | 244             |
| MP01Z#3R3-B--                               | 3.3              | 280           | 4.6     | 250                     | 137  | 3.402            | 291    | 185             | 3.654             | 101    | 234             | 3.850             | 74     | 240             |
| MP01Z#3R4-B--                               | 3.4              | 275           | 4.6     | 246                     | 135  | 3.506            | 286    | 182             | 3.771             | 99     | 231             | 3.978             | 73     | 237             |
| MP01Z#3R5-B--                               | 3.5              | 275           | 4.5     | 242                     | 133  | 3.611            | 282    | 179             | 3.889             | 98     | 227             | 4.107             | 71     | 233             |
| MP01Z#3R6-B--                               | 3.6              | 270           | 4.5     | 238                     | 131  | 3.716            | 278    | 176             | 4.006             | 96     | 224             | 4.235             | 70     | 230             |
| MP01Z#3R7-B--                               | 3.7              | 265           | 4.4     | 234                     | 129  | 3.82             | 273    | 173             | 4.124             | 94     | 220             | 4.363             | 69     | 226             |
| MP01Z#3R8-B--                               | 3.8              | 265           | 4.4     | 230                     | 127  | 3.925            | 269    | 170             | 4.241             | 92     | 217             | 4.492             | 67     | 223             |
| MP01Z#3R9-B--                               | 3.9              | 260           | 4.3     | 227                     | 125  | 4.03             | 265    | 167             | 4.359             | 91     | 213             | 4.620             | 66     | 219             |
| MP01ZK4R0-B--                               | 4                | 260           | 4.3     | 224                     | 123  | 4.138            | 262    | 165             | 4.484             | 89     | 210             | 4.760             | 65     | 216             |
| MP01ZK4R1-B--                               | 4.1              | 255           | 4.2     | 222                     | 122  | 4.247            | 259    | 162             | 4.610             | 88     | 207             | 4.901             | 64     | 213             |
| MP01ZK4R2-B--                               | 4.2              | 255           | 4.2     | 220                     | 121  | 4.356            | 257    | 159             | 4.735             | 87     | 204             | 5.041             | 63     | 210             |
| MP01ZK4R3-B--                               | 4.3              | 250           | 4.1     | 218                     | 120  | 4.464            | 254    | 157             | 4.860             | 86     | 201             | 5.181             | 62     | 207             |
| MP01ZK4R4-B--                               | 4.4              | 245           | 4.1     | 216                     | 119  | 4.573            | 252    | 154             | 4.986             | 85     | 198             | 5.322             | 61     | 204             |

"#"-can be either "J" or "K" temperature coefficient



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at [www.kyocera-avx.com/disclaimer/](http://www.kyocera-avx.com/disclaimer/) by reference and should be reviewed in full before placing any order.

# Accu-P® MP Medical Grade

## 0201 Typical Electrical Tables



| Part Number                      | Capacitance (pF) | ESR Max. mOhm | SRF GHz | Q Standard Value @ 1GHz |      | Frequency 900MHz |        |                 | Frequency 1900MHz |        |                 | Frequency 2400MHz |        |                 |
|----------------------------------|------------------|---------------|---------|-------------------------|------|------------------|--------|-----------------|-------------------|--------|-----------------|-------------------|--------|-----------------|
|                                  |                  |               |         | Typ.                    | Min. | Ceff (pF)        | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) |
|                                  |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP01ZK4R5-B--                    | 4.5              | 240           | 4.0     | 214                     | 118  | 4.682            | 249    | 152             | 5.111             | 83     | 195             | 5.462             | 60     | 201             |
| MP01ZK4R6-B--                    | 4.6              | 235           | 4.0     | 212                     | 116  | 4.790            | 245    | 149             | 5.237             | 82     | 192             | 5.602             | 59     | 198             |
| MP01ZK4R7-B--                    | 4.7              | 230           | 3.9     | 209                     | 115  | 4.899            | 244    | 147             | 5.362             | 81     | 189             | 5.743             | 58     | 195             |
| MP01ZK5R1-B--                    | 5.1              | 225           | 3.8     | 201                     | 110  | 5.334            | 233    | 136             | 5.863             | 76     | 178             | 6.304             | 54     | 183             |
| MP01ZK5R6-B--                    | 5.6              | 220           | 3.6     | 190                     | 105  | 5.877            | 220    | 124             | 6.490             | 70     | 163             | 7.006             | 49     | 168             |
| MP01ZK6R2-B--                    | 6.2              | 215           | 3.5     | 177                     | 97   | 6.488            | 208    | 126             | 7.290             | 65     | 167             | 7.993             | 45     | 174             |
| MP01ZK6R8-B--                    | 6.8              | 210           | 3.3     | 164                     | 90   | 7.100            | 195    | 128             | 8.090             | 60     | 171             | 8.980             | 41     | 179             |
| MP01ZK7R5-B--                    | 7.5              | 205           | 3.2     | 153                     | 84   | 7.901            | 182    | 125             | 9.129             | 56     | 166             | 10.27             | 38     | 173             |
| MP01ZK8R2-B--                    | 8.2              | 200           | 3.0     | 142                     | 78   | 8.701            | 168    | 121             | 10.17             | 52     | 160             | 11.56             | 34     | 167             |
| MP01ZK9R1-B--                    | 9.1              | 195           | 2.9     | 135                     | 74   | 9.676            | 159    | 118             | 11.57             | 49     | 154             | 13.49             | 32     | 161             |
| MP01ZK100-B--                    | 10               | 190           | 2.8     | 128                     | 70   | 10.65            | 151    | 114             | 12.96             | 45     | 148             | 15.41             | 29     | 155             |
| MP01ZK110-B--                    | 11               | 185           | 2.7     | 120                     | 66   | 11.73            | 141    | 110             | 14.52             | 42     | 142             | 17.55             | 27     | 148             |
| MP01ZK120-B--                    | 12               | 180           | 2.5     | 112                     | 62   | 12.82            | 132    | 105             | 16.07             | 39     | 135             | 19.68             | 24     | 141             |
| MP01ZK130-B--                    | 13               | 175           | 2.4     | 105                     | 58   | 13.92            | 124    | 104             | 17.82             | 36     | 135             | 22.38             | 22     | 142             |
| MP01ZK140-B--                    | 14               | 170           | 2.4     | 98                      | 54   | 15.02            | 116    | 103             | 19.57             | 32     | 135             | 25.08             | 19     | 142             |
| MP01ZK150-B--                    | 15               | 165           | 2.3     | 91                      | 50   | 16.12            | 108    | 102             | 21.32             | 29     | 135             | 27.78             | 17     | 143             |
| MP01ZK160-B--                    | 16               | 165           | 2.2     | 86                      | 47   | 17.37            | 102    | 103             | 24.04             | 27     | 135             | N/A               | N/A    | N/A             |
| MP01ZK170-B--                    | 17               | 160           | 2.2     | 81                      | 44   | 18.63            | 96     | 105             | 26.76             | 25     | 136             | N/A               | N/A    | N/A             |
| MP01ZK180-B--                    | 18               | 160           | 2.1     | 76                      | 42   | 19.88            | 90     | 106             | 29.48             | 23     | 136             | N/A               | N/A    | N/A             |
| MP01ZK190-B--                    | 19               | 155           | 2.1     | 71                      | 39   | 21.14            | 83     | 108             | 32.20             | 21     | 136             | N/A               | N/A    | N/A             |
| MP01ZK200-B--                    | 20               | 155           | 2.1     | 65                      | 36   | 22.39            | 77     | 109             | 34.92             | 19     | 136             | N/A               | N/A    | N/A             |
| MP01ZK210-B--                    | 21               | 150           | 2.0     | 66                      | 33   | 23.5             | 71     | 110             | 37.41             | 17     | 137             | N/A               | N/A    | N/A             |
| MP01ZK220-B--                    | 22               | 150           | 2.0     | 55                      | 30   | 24.9             | 65     | 112             | 40.36             | 15     | 137             | N/A               | N/A    | N/A             |
| <b>UR = 16V (Voltage code Y)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP01Y#R05-B--                    | 0.05             | N/A           | 20.9    | 599                     | 402  | 0.055            | 650    | 3220            | 0.056             | 265    | 4010            | 0.057             | 195    | 4450            |
| MP01Y#R15-B--                    | 0.1              | 6000          | 19.4    | 574                     | 316  | 0.110            | 614    | 3682            | 0.112             | 246    | 3036            | 0.113             | 188    | 3113            |
| MP01Y#R25-B--                    | 0.15             | 4800          | 17.9    | 510                     | 280  | 0.163            | 550    | 2087            | 0.166             | 220    | 2404            | 0.168             | 170    | 2441            |
| MP01Y#R35-B--                    | 0.2              | 3600          | 16.4    | 445                     | 245  | 0.216            | 520    | 1693            | 0.220             | 210    | 1971            | 0.223             | 160    | 1970            |
| MP01Y#R45-B--                    | 0.25             | 2700          | 15.5    | 436                     | 240  | 0.262            | 510    | 1371            | 0.268             | 204    | 1604            | 0.272             | 153    | 1646            |
| MP01Y#R55-B--                    | 0.3              | 1800          | 14.6    | 427                     | 235  | 0.309            | 500    | 1149            | 0.316             | 199    | 1337            | 0.320             | 146    | 1421            |
| MP01Y#R65-B--                    | 0.35             | 1650          | 14.1    | 423                     | 232  | 0.360            | 494    | 1001            | 0.369             | 196    | 1177            | 0.374             | 144    | 1265            |
| MP01Y#R75-B--                    | 0.4              | 1500          | 12.5    | 418                     | 230  | 0.411            | 489    | 874             | 0.421             | 193    | 1038            | 0.427             | 142    | 1129            |
| MP01Y#R85-B--                    | 0.45             | 1400          | 11.9    | 413                     | 227  | 0.461            | 484    | 819             | 0.473             | 191    | 972             | 0.481             | 140    | 1066            |
| MP01Y#R95-B--                    | 0.5              | 1300          | 11.3    | 408                     | 224  | 0.512            | 478    | 765             | 0.526             | 188    | 906             | 0.535             | 138    | 1003            |
| MP01Y#R105-B--                   | 0.55             | 1200          | 10.9    | 403                     | 222  | 0.563            | 473    | 710             | 0.578             | 186    | 840             | 0.588             | 137    | 940             |
| MP01Y#R115-B--                   | 0.6              | 1100          | 10.4    | 398                     | 219  | 0.614            | 468    | 655             | 0.631             | 183    | 791             | 0.642             | 135    | 882             |
| MP01Y#R125-B--                   | 0.65             | 1025          | 10.0    | 394                     | 217  | 0.664            | 462    | 600             | 0.683             | 181    | 742             | 0.695             | 133    | 825             |
| MP01Y#R135-B--                   | 0.7              | 950           | 9.5     | 389                     | 214  | 0.715            | 457    | 545             | 0.735             | 178    | 693             | 0.749             | 131    | 767             |
| MP01Y#R145-B--                   | 0.75             | 900           | 9.3     | 384                     | 211  | 0.766            | 452    | 490             | 0.788             | 176    | 644             | 0.802             | 129    | 729             |
| MP01Y#R155-B--                   | 0.8              | 850           | 9.1     | 379                     | 209  | 0.817            | 446    | 435             | 0.840             | 173    | 635             | 0.856             | 127    | 692             |
| MP01Y#R165-B--                   | 0.85             | 825           | 8.9     | 374                     | 206  | 0.868            | 441    | 380             | 0.893             | 171    | 606             | 0.909             | 126    | 654             |
| MP01Y#R175-B--                   | 0.9              | 800           | 8.8     | 370                     | 203  | 0.918            | 436    | 325             | 0.945             | 168    | 577             | 0.963             | 124    | 616             |
| MP01Y#R185-B--                   | 0.95             | 775           | 8.6     | 365                     | 201  | 0.969            | 430    | 270             | 0.998             | 166    | 548             | 1.016             | 122    | 579             |
| MP01Y#R195-B--                   | 1                | 750           | 8.4     | 360                     | 198  | 1.020            | 425    | 215             | 1.050             | 163    | 519             | 1.070             | 120    | 541             |
| Contact Factory                  | 1.05             | 725           | 8.2     | 358                     | 197  | 1.078            | 421    | 160             | 1.112             | 161    | 502             | 1.134             | 119    | 523             |
| MP01Y#R205-B--                   | 1.1              | 700           | 8.0     | 355                     | 195  | 1.135            | 418    | 105             | 1.173             | 159    | 486             | 1.199             | 117    | 505             |
| Contact Factory                  | 1.15             | 650           | 7.8     | 353                     | 194  | 1.193            | 414    | 50              | 1.235             | 157    | 469             | 1.263             | 116    | 488             |
| MP01Y#R215-B--                   | 1.2              | 600           | 7.6     | 350                     | 193  | 1.251            | 411    | 45              | 1.296             | 155    | 452             | 1.327             | 115    | 470             |
| Contact Factory                  | 1.25             | 580           | 7.5     | 348                     | 191  | 1.308            | 407    | 40              | 1.358             | 153    | 436             | 1.392             | 114    | 452             |
| MP01Y#R225-B--                   | 1.3              | 560           | 7.4     | 345                     | 190  | 1.355            | 403    | 35              | 1.419             | 151    | 419             | 1.456             | 112    | 434             |
| Contact Factory                  | 1.35             | 545           | 7.3     | 343                     | 189  | 1.424            | 400    | 30              | 1.481             | 149    | 402             | 1.520             | 111    | 416             |
| MP01Y#R235-B--                   | 1.4              | 530           | 7.2     | 340                     | 187  | 1.481            | 396    | 25              | 1.542             | 147    | 386             | 1.585             | 110    | 398             |
| Contact Factory                  | 1.45             | 515           | 7.1     | 338                     | 186  | 1.539            | 393    | 20              | 1.604             | 145    | 369             | 1.649             | 109    | 381             |
| MP01Y#R245-B--                   | 1.5              | 500           | 7.0     | 335                     | 184  | 1.597            | 389    | 15              | 1.665             | 144    | 353             | 1.713             | 107    | 363             |
| <b>UR = 16V (Voltage code Y)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| Contact Factory                  | 1.55             | 490           | 6.8     | 332                     | 183  | 1.642            | 386    | 10              | 1.714             | 142    | 347             | 1.764             | 106    | 358             |
| MP01Y#R255-B--                   | 1.6              | 480           | 6.7     | 330                     | 181  | 1.687            | 382    | 5               | 1.762             | 141    | 342             | 1.815             | 105    | 352             |
| Contact Factory                  | 1.66             | 470           | 6.6     | 327                     | 180  | 1.732            | 378    | 5               | 1.810             | 140    | 337             | 1.866             | 104    | 347             |
| MP01Y#R265-B--                   | 1.7              | 460           | 6.5     | 324                     | 178  | 1.777            | 375    | 5               | 1.859             | 138    | 331             | 1.917             | 103    | 342             |
| Contact Factory                  | 1.75             | 455           | 6.4     | 321                     | 176  | 1.822            | 371    | 5               | 1.907             | 137    | 326             | 1.968             | 102    | 337             |
| MP01Y#R275-B--                   | 1.8              | 450           | 6.3     | 318                     | 175  | 1.866            | 367    | 5               | 1.955             | 136    | 321             | 2.018             | 101    | 331             |
| Contact Factory                  | 1.85             | 438           | 6.2     | 315                     | 173  | 1.911            | 364    | 5               | 2.003             | 134    | 316             | 2.069             | 100    | 326             |
| MP01Y#R285-B--                   | 1.9              | 425           | 6.2     | 312                     | 172  | 1.956            | 360    | 5               | 2.052             | 133    | 310             | 2.120             | 99     | 321             |
| Contact Factory                  | 1.95             | 412           | 6.1     | 309                     | 170  | 2.001            | 357    | 5               | 2.100             | 132    | 305             | 2.171             | 98     | 316             |
| MP01Y#R295-B--                   | 2                | 400           | 6.0     | 306                     | 168  | 2.046            | 353    | 5               | 2.148             | 131    | 300             | 2.222             | 97     | 310             |

"#"-can be either "J" or "K" temperature coefficient

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at [www.kyocera-avx.com/disclaimer/](http://www.kyocera-avx.com/disclaimer/) by reference and should be reviewed in full before placing any order.

# Accu-P® MP Medical Grade

## 0201 Typical Electrical Tables



| Part Number                                 | Capacitance (pF) | ESR Max. mOhm | SRF GHz | Q Standard Value @ 1GHz |      | Frequency 900MHz |        |                 | Frequency 1900MHz |        |                 | Frequency 2400MHz |        |                 |
|---|------------------|---------------|---------|-------------------------|------|------------------|--------|-----------------|-------------------|--------|-----------------|-------------------|--------|-----------------|
|   |                  |               |         | Typ.                    | Min. | Ceff (pF)        | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) |
|   |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP01Y#2R1-B--                               | 2.1              | 380           | 5.9     | 301                     | 166  | 2.150            | 348    | 232             | 2.263             | 128    | 293             | 2.344             | 95     | 303             |
| MP01Y#2R2-B--                               | 2.2              | 365           | 5.7     | 296                     | 163  | 2.254            | 343    | 227             | 2.377             | 125    | 287             | 2.467             | 93     | 296             |
| MP01Y#2R3-B--                               | 2.3              | 350           | 5.6     | 292                     | 160  | 2.358            | 337    | 222             | 2.491             | 122    | 281             | 2.590             | 91     | 289             |
| MP01Y#2R4-B--                               | 2.4              | 340           | 5.5     | 287                     | 158  | 2.462            | 332    | 217             | 2.606             | 120    | 274             | 2.712             | 89     | 282             |
| MP01Y#2R5-B--                               | 2.5              | 330           | 5.4     | 282                     | 155  | 2.566            | 327    | 212             | 2.720             | 117    | 268             | 2.835             | 87     | 275             |
| MP01Y#2R6-B--                               | 2.6              | 320           | 5.3     | 277                     | 152  | 2.670            | 322    | 207             | 2.834             | 114    | 262             | 2.958             | 85     | 268             |
| MP01Y#2R7-B--                               | 2.7              | 310           | 5.2     | 272                     | 150  | 2.773            | 317    | 202             | 2.949             | 112    | 255             | 3.080             | 83     | 261             |
| MP01Y#2R8-B--                               | 2.8              | 300           | 5.1     | 269                     | 148  | 2.878            | 312    | 199             | 3.066             | 110    | 252             | 3.209             | 81     | 258             |
| MP01Y#2R9-B--                               | 2.9              | 295           | 5.0     | 265                     | 146  | 2.983            | 308    | 196             | 3.184             | 108    | 248             | 3.337             | 80     | 254             |
| MP01Y#3R0-B--                               | 3                | 290           | 4.9     | 261                     | 144  | 3.088            | 304    | 193             | 3.301             | 106    | 245             | 3.465             | 78     | 251             |
| MP01Y#3R1-B--                               | 3.1              | 285           | 4.8     | 257                     | 141  | 3.196            | 299    | 190             | 3.419             | 105    | 241             | 3.593             | 77     | 247             |
| MP01Y#3R2-B--                               | 3.2              | 285           | 4.7     | 253                     | 139  | 3.297            | 295    | 187             | 3.536             | 103    | 238             | 3.722             | 76     | 244             |
| MP01Y#3R3-B--                               | 3.3              | 280           | 4.6     | 250                     | 137  | 3.402            | 291    | 185             | 3.654             | 101    | 234             | 3.850             | 74     | 240             |
| MP01Y#3R4-B--                               | 3.4              | 275           | 4.6     | 246                     | 135  | 3.506            | 286    | 182             | 3.771             | 99     | 231             | 3.978             | 73     | 237             |
| MP01Y#3R5-B--                               | 3.5              | 275           | 4.5     | 242                     | 133  | 3.611            | 282    | 179             | 3.889             | 98     | 227             | 4.107             | 71     | 233             |
| MP01Y#3R6-B--                               | 3.6              | 270           | 4.5     | 238                     | 131  | 3.716            | 278    | 176             | 4.006             | 96     | 224             | 4.235             | 70     | 230             |
| MP01Y#3R7-B--                               | 3.7              | 265           | 4.4     | 234                     | 129  | 3.820            | 273    | 173             | 4.124             | 94     | 220             | 4.363             | 69     | 226             |
| <b>U<sub>R</sub> = 25V (Voltage code 3)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP013#R05-B--                               | 0.05             | N/A           | 20.9    | 599                     | 402  | 0.055            | 650    | 3220            | 0.056             | 265    | 4010            | 0.057             | 195    | 4450            |
| MP013#R1-B--                                | 0.1              | 6000          | 19.4    | 574                     | 316  | 0.110            | 614    | 3682            | 0.112             | 246    | 3036            | 0.113             | 188    | 3113            |
| MP013#R15-B--                               | 0.15             | 4800          | 17.9    | 510                     | 280  | 0.163            | 550    | 2087            | 0.166             | 220    | 2404            | 0.168             | 170    | 2441            |
| MP013#R2-B--                                | 0.2              | 3600          | 16.4    | 445                     | 245  | 0.216            | 520    | 1693            | 0.220             | 210    | 1971            | 0.223             | 160    | 1970            |
| MP013#R25-B--                               | 0.25             | 2700          | 15.5    | 436                     | 240  | 0.262            | 510    | 1371            | 0.268             | 204    | 1604            | 0.272             | 153    | 1646            |
| MP013#R3-B--                                | 0.3              | 1800          | 14.6    | 427                     | 235  | 0.309            | 500    | 1149            | 0.316             | 199    | 1337            | 0.320             | 146    | 1421            |
| MP013#R35-B--                               | 0.35             | 1650          | 14.1    | 423                     | 232  | 0.360            | 494    | 1001            | 0.369             | 196    | 1177            | 0.374             | 144    | 1265            |
| MP013#R4-B--                                | 0.4              | 1500          | 12.5    | 418                     | 230  | 0.411            | 489    | 874             | 0.421             | 193    | 1038            | 0.427             | 142    | 1129            |
| MP013#R45-B--                               | 0.45             | 1400          | 11.9    | 413                     | 227  | 0.461            | 484    | 819             | 0.473             | 191    | 972             | 0.481             | 140    | 1066            |
| MP013#R5-B--                                | 0.5              | 1300          | 11.3    | 408                     | 224  | 0.512            | 478    | 765             | 0.526             | 188    | 906             | 0.535             | 138    | 1003            |
| MP013#R55-B--                               | 0.55             | 1200          | 10.9    | 403                     | 222  | 0.563            | 473    | 710             | 0.578             | 186    | 840             | 0.588             | 137    | 940             |
| MP013#R6-B--                                | 0.6              | 1100          | 10.4    | 398                     | 219  | 0.614            | 468    | 664             | 0.631             | 183    | 791             | 0.642             | 135    | 882             |
| MP013#R65-B--                               | 0.65             | 1025          | 10.0    | 394                     | 217  | 0.664            | 462    | 624             | 0.683             | 181    | 742             | 0.695             | 133    | 825             |
| MP013#R7-B--                                | 0.7              | 950           | 9.5     | 389                     | 214  | 0.715            | 457    | 580             | 0.735             | 178    | 693             | 0.749             | 131    | 767             |
| MP013#R75-B--                               | 0.75             | 900           | 9.3     | 384                     | 211  | 0.766            | 452    | 557             | 0.788             | 176    | 664             | 0.802             | 129    | 729             |
| MP013#R8-B--                                | 0.8              | 850           | 9.1     | 379                     | 209  | 0.817            | 446    | 534             | 0.840             | 173    | 635             | 0.856             | 127    | 692             |
| MP013#R85-B--                               | 0.85             | 825           | 8.9     | 374                     | 206  | 0.868            | 441    | 511             | 0.893             | 171    | 606             | 0.909             | 126    | 654             |
| MP013#R9-B--                                | 0.9              | 800           | 8.8     | 370                     | 203  | 0.918            | 436    | 487             | 0.945             | 168    | 577             | 0.963             | 124    | 616             |
| MP013#R95-B--                               | 0.95             | 775           | 8.6     | 365                     | 201  | 0.969            | 430    | 464             | 0.998             | 166    | 548             | 1.016             | 122    | 579             |
| MP013#R10-B--                               | 1                | 750           | 8.4     | 360                     | 198  | 1.020            | 425    | 441             | 1.050             | 163    | 519             | 1.070             | 120    | 541             |
| Contact Factory                             | 1.05             | 725           | 8.2     | 358                     | 197  | 1.078            | 421    | 426             | 1.112             | 161    | 502             | 1.134             | 119    | 523             |
| MP013#R11-B--                               | 1.1              | 700           | 8.0     | 355                     | 195  | 1.135            | 418    | 410             | 1.173             | 159    | 486             | 1.199             | 117    | 505             |
| Contact Factory                             | 1.15             | 650           | 7.8     | 353                     | 194  | 1.193            | 414    | 395             | 1.235             | 157    | 469             | 1.263             | 116    | 488             |
| MP013#R12-B--                               | 1.2              | 600           | 7.6     | 350                     | 193  | 1.251            | 411    | 379             | 1.296             | 155    | 452             | 1.327             | 115    | 470             |
| Contact Factory                             | 1.25             | 580           | 7.5     | 348                     | 191  | 1.308            | 407    | 364             | 1.358             | 153    | 436             | 1.392             | 114    | 452             |
| MP013#R13-B--                               | 1.3              | 560           | 7.4     | 345                     | 190  | 1.355            | 403    | 348             | 1.419             | 151    | 419             | 1.456             | 112    | 434             |
| Contact Factory                             | 1.35             | 545           | 7.3     | 343                     | 189  | 1.424            | 400    | 333             | 1.481             | 149    | 402             | 1.520             | 111    | 416             |
| MP013#R14-B--                               | 1.4              | 530           | 7.2     | 340                     | 187  | 1.481            | 396    | 317             | 1.542             | 147    | 386             | 1.585             | 110    | 398             |
| Contact Factory                             | 1.45             | 515           | 7.1     | 338                     | 186  | 1.539            | 393    | 302             | 1.604             | 145    | 369             | 1.649             | 109    | 381             |
| MP013#R15-B--                               | 1.5              | 500           | 7.0     | 335                     | 184  | 1.597            | 389    | 287             | 1.665             | 144    | 353             | 1.713             | 107    | 363             |
| Contact Factory                             | 1.55             | 490           | 6.8     | 332                     | 183  | 1.642            | 386    | 282             | 1.714             | 142    | 347             | 1.764             | 106    | 358             |
| <b>U<sub>R</sub> = 25V (Voltage code 3)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP013#R16-B--                               | 1.6              | 480           | 6.7     | 330                     | 181  | 1.687            | 382    | 277             | 1.762             | 141    | 342             | 1.815             | 105    | 352             |
| Contact Factory                             | 1.65             | 470           | 6.6     | 327                     | 180  | 1.732            | 378    | 272             | 1.810             | 140    | 337             | 1.866             | 104    | 347             |
| MP013#R17-B--                               | 1.7              | 460           | 6.5     | 324                     | 178  | 1.777            | 375    | 267             | 1.859             | 138    | 331             | 1.917             | 103    | 342             |
| <b>U<sub>R</sub> = 50V (Voltage code 5)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP015#R05-B--                               | 0.05             | N/A           | 20.9    | 599                     | 402  | 0.055            | 650    | 3220            | 0.056             | 265    | 4010            | 0.057             | 195    | 4450            |
| MP015#R1-B--                                | 0.1              | 6000          | 19.4    | 574                     | 316  | 0.110            | 614    | 3682            | 0.112             | 246    | 3036            | 0.113             | 188    | 3113            |
| MP015#R15-B--                               | 0.15             | 4800          | 17.9    | 510                     | 280  | 0.163            | 550    | 2087            | 0.166             | 220    | 2404            | 0.168             | 170    | 2441            |
| MP015#R2-B--                                | 0.2              | 3600          | 16.4    | 445                     | 245  | 0.216            | 520    | 1693            | 0.22              | 210    | 1971            | 0.223             | 160    | 1970            |
| MP015#R25-B--                               | 0.25             | 2700          | 15.5    | 436                     | 240  | 0.262            | 510    | 1371            | 0.268             | 204    | 1604            | 0.272             | 153    | 1646            |
| MP015#R3-B--                                | 0.3              | 1800          | 14.6    | 427                     | 235  | 0.309            | 500    | 1149            | 0.316             | 199    | 1337            | 0.320             | 146    | 1421            |
| MP015#R35-B--                               | 0.35             | 1650          | 14.1    | 423                     | 232  | 0.360            | 494    | 1001            | 0.369             | 196    | 1177            | 0.374             | 144    | 1265            |
| MP015#R4-B--                                | 0.4              | 1500          | 12.5    | 418                     | 230  | 0.411            | 489    | 874             | 0.421             | 193    | 1038            | 0.427             | 142    | 1129            |
| MP015#R45-B--                               | 0.45             | 1400          | 11.9    | 413                     | 227  | 0.461            | 484    | 819             | 0.473             | 191    | 972             | 0.481             | 140    | 1066            |
| MP015#R5-B--                                | 0.5              | 1300          | 11.3    | 408                     | 224  | 0.512            | 478    | 765             | 0.526             | 188    | 906             | 0.535             | 138    | 1003            |

"#"=can be either "J" or "K" temperature coefficient

# Accu-P® MP Medical Grade



## 0402 Typical Electrical Tables

| Part Number     | Capacitance (pF) | ESR Max. mOhm | SRF GHz | Q Standard Value @ 1GHz |      | Frequency 900MHz |        |                 | Frequency 1900MHz |        |                 | Frequency 2400MHz |        |                 |
|-----------------|------------------|---------------|---------|-------------------------|------|------------------|--------|-----------------|-------------------|--------|-----------------|-------------------|--------|-----------------|
|                 |                  |               |         | Typ.                    | Min. | Ceff (pF)        | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) |
|                 |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP023#R05-B--   | 0.05             | N/A           | 20.9    | 856                     | 471  | 0.06             | 881    | 1411            | 0.06              | 562    | 1216            | 0.06              | 498    | 983             |
| MP023#0R1-B--   | 0.1              | 6000          | 19.4    | 848                     | 466  | 0.11             | 873    | 1316            | 0.11              | 554    | 1115            | 0.11              | 490    | 914             |
| MP023#R15-B--   | 0.15             | 4800          | 17.9    | 840                     | 462  | 0.16             | 866    | 1222            | 0.16              | 547    | 1013            | 0.16              | 482    | 845             |
| MP023#0R2-B--   | 0.2              | 3600          | 16.4    | 832                     | 457  | 0.21             | 858    | 1128            | 0.21              | 539    | 912             | 0.22              | 474    | 776             |
| MP023#R25-B--   | 0.25             | 2700          | 15.5    | 823                     | 453  | 0.26             | 850    | 1033            | 0.27              | 523    | 810             | 0.27              | 465    | 707             |
| MP023#0R3-B--   | 0.3              | 1800          | 14.6    | 815                     | 448  | 0.31             | 842    | 939             | 0.32              | 525    | 708             | 0.32              | 457    | 638             |
| MP023#R35-B--   | 0.35             | 1650          | 14.1    | 807                     | 444  | 0.36             | 834    | 844             | 0.37              | 517    | 607             | 0.37              | 449    | 569             |
| MP023#0R4-B--   | 0.4              | 1500          | 125.0   | 799                     | 439  | 0.41             | 827    | 750             | 0.42              | 510    | 505             | 0.42              | 441    | 500             |
| MP023#R45-B--   | 0.45             | 1400          | 11.9    | 791                     | 435  | 0.46             | 819    | 667             | 0.47              | 502    | 458             | 0.48              | 432    | 453             |
| MP023#0R5-B--   | 0.5              | 1300          | 11.3    | 783                     | 430  | 0.51             | 811    | 583             | 0.52              | 495    | 410             | 0.53              | 424    | 407             |
| MP023#R55-B--   | 0.55             | 1200          | 10.9    | 774                     | 426  | 0.57             | 803    | 500             | 0.57              | 487    | 363             | 0.58              | 416    | 360             |
| MP023#0R6-B--   | 0.6              | 1100          | 10.4    | 766                     | 421  | 0.62             | 796    | 465             | 0.62              | 480    | 343             | 0.63              | 408    | 339             |
| MP023#R65-B--   | 0.65             | 1025          | 10.0    | 758                     | 417  | 0.67             | 788    | 431             | 0.67              | 472    | 322             | 0.68              | 399    | 317             |
| MP023#0R7-B--   | 0.7              | 950           | 9.5     | 750                     | 413  | 0.72             | 780    | 396             | 0.72              | 465    | 302             | 0.73              | 391    | 296             |
| MP023#R75-B--   | 0.75             | 900           | 9.3     | 746                     | 410  | 0.77             | 776    | 375             | 0.78              | 456    | 290             | 0.79              | 381    | 285             |
| MP023#0R8-B--   | 0.8              | 850           | 9.1     | 743                     | 408  | 0.82             | 772    | 354             | 0.83              | 447    | 277             | 0.84              | 370    | 273             |
| MP023#R85-B--   | 0.85             | 800           | 9.0     | 739                     | 406  | 0.87             | 768    | 334             | 0.88              | 438    | 265             | 0.89              | 360    | 262             |
| MP023#0R9-B--   | 0.9              | 750           | 8.8     | 735                     | 404  | 0.92             | 764    | 313             | 0.93              | 429    | 253             | 0.95              | 350    | 250             |
| MP023#R95-B--   | 0.95             | 712           | 8.4     | 732                     | 402  | 0.97             | 760    | 292             | 0.98              | 420    | 240             | 1.00              | 339    | 239             |
| MP023#1R0-B--   | 1                | 675           | 8.0     | 728                     | 400  | 1.02             | 756    | 271             | 1.04              | 411    | 228             | 1.05              | 329    | 227             |
| Contact Factory | 1.05             | 638           | 7.9     | 725                     | 398  | 1.07             | 752    | 258             | 1.09              | 406    | 221             | 1.11              | 323    | 221             |
| MP023#1R1-B--   | 1.1              | 600           | 7.8     | 721                     | 397  | 1.12             | 749    | 245             | 1.14              | 401    | 214             | 1.16              | 318    | 214             |
| Contact Factory | 1.15             | 575           | 7.6     | 718                     | 395  | 1.17             | 745    | 232             | 1.20              | 396    | 207             | 1.22              | 312    | 208             |
| MP023#1R2-B--   | 1.2              | 550           | 7.4     | 714                     | 393  | 1.22             | 742    | 218             | 1.25              | 391    | 200             | 1.27              | 306    | 202             |
| Contact Factory | 1.25             | 525           | 7.2     | 711                     | 391  | 1.27             | 738    | 205             | 1.31              | 386    | 193             | 1.32              | 301    | 195             |
| MP023#1R3-B--   | 1.3              | 500           | 7.0     | 707                     | 389  | 1.32             | 734    | 192             | 1.36              | 381    | 185             | 1.38              | 295    | 189             |
| Contact Factory | 1.35             | 485           | 6.9     | 704                     | 387  | 1.37             | 731    | 179             | 1.41              | 376    | 178             | 1.43              | 289    | 183             |
| MP023#1R4-B--   | 1.4              | 470           | 6.8     | 700                     | 385  | 1.42             | 727    | 165             | 1.47              | 371    | 171             | 1.49              | 283    | 177             |
| Contact Factory | 1.45             | 460           | 6.7     | 697                     | 383  | 1.47             | 724    | 152             | 1.52              | 366    | 164             | 1.54              | 278    | 170             |
| MP023#1R5-B--   | 1.5              | 450           | 6.5     | 693                     | 381  | 1.52             | 720    | 139             | 1.58              | 361    | 157             | 1.60              | 272    | 164             |
| Contact Factory | 1.55             | 440           | 6.5     | 690                     | 379  | 1.56             | 716    | 135             | 1.62              | 358    | 153             | 1.65              | 269    | 159             |
| MP023#1R6-B--   | 1.6              | 430           | 6.5     | 686                     | 377  | 1.61             | 716    | 130             | 1.67              | 355    | 148             | 1.70              | 267    | 155             |
| Contact Factory | 1.65             | 422           | 6.5     | 683                     | 375  | 1.66             | 709    | 126             | 1.72              | 352    | 143             | 1.76              | 264    | 150             |
| MP023#1R7-B--   | 1.7              | 415           | 6.4     | 679                     | 373  | 1.71             | 705    | 122             | 1.77              | 349    | 139             | 1.81              | 267    | 146             |
| Contact Factory | 1.75             | 408           | 6.3     | 676                     | 372  | 1.75             | 702    | 118             | 1.82              | 347    | 134             | 1.86              | 259    | 141             |
| MP023#1R8-B--   | 1.8              | 400           | 6.2     | 672                     | 370  | 1.80             | 698    | 113             | 1.87              | 344    | 130             | 1.92              | 256    | 137             |
| Contact Factory | 1.85             | 395           | 6.1     | 669                     | 368  | 1.85             | 694    | 109             | 1.92              | 341    | 125             | 1.97              | 253    | 132             |
| MP023#1R9-B--   | 1.9              | 390           | 6.0     | 665                     | 366  | 1.90             | 690    | 105             | 1.97              | 338    | 121             | 2.02              | 251    | 128             |
| Contact Factory | 1.95             | 385           | 5.9     | 662                     | 364  | 1.94             | 687    | 101             | 2.01              | 335    | 116             | 2.08              | 248    | 123             |
| MP023#2R0-B--   | 2                | 380           | 5.7     | 658                     | 362  | 1.99             | 683    | 96              | 2.06              | 332    | 112             | 2.13              | 245    | 119             |
| MP023#2R1-B--   | 2.1              | 370           | 5.4     | 651                     | 358  | 2.10             | 676    | 93              | 2.18              | 326    | 108             | 2.26              | 241    | 115             |
| MP023#2R2-B--   | 2.2              | 360           | 5.1     | 643                     | 354  | 2.21             | 669    | 89              | 2.30              | 321    | 104             | 2.38              | 236    | 112             |
| MP023#2R3-B--   | 2.3              | 350           | 5.0     | 636                     | 350  | 2.31             | 662    | 85              | 2.42              | 315    | 101             | 2.51              | 231    | 109             |
| MP023#2R4-B--   | 2.4              | 340           | 4.9     | 629                     | 346  | 2.42             | 656    | 81              | 2.54              | 309    | 97              | 2.64              | 226    | 106             |
| MP023#2R5-B--   | 2.5              | 330           | 4.7     | 622                     | 342  | 2.53             | 649    | 77              | 2.65              | 303    | 94              | 2.76              | 221    | 102             |
| MP023#2R6-B--   | 2.6              | 320           | 4.6     | 614                     | 338  | 2.64             | 642    | 74              | 2.77              | 298    | 90              | 2.89              | 216    | 99              |
| MP023#2R7-B--   | 2.7              | 310           | 4.5     | 607                     | 334  | 2.75             | 635    | 70              | 2.89              | 292    | 86              | 3.02              | 211    | 96              |
| MP023#2R8-B--   | 2.8              | 300           | 4.5     | 600                     | 330  | 2.85             | 628    | 68              | 3.01              | 288    | 83              | 3.15              | 207    | 92              |
| MP023#2R9-B--   | 2.9              | 295           | 4.4     | 592                     | 326  | 2.95             | 621    | 66              | 3.13              | 283    | 80              | 3.28              | 203    | 88              |
| MP023#3R0-B--   | 3                | 280           | 4.4     | 585                     | 322  | 3.06             | 614    | 64              | 3.24              | 279    | 76              | 3.41              | 200    | 84              |
| MP023#3R1-B--   | 3.1              | 275           | 4.4     | 578                     | 318  | 3.16             | 607    | 62              | 3.36              | 274    | 73              | 3.54              | 196    | 80              |
| MP023#3R2-B--   | 3.2              | 275           | 4.3     | 570                     | 314  | 3.27             | 600    | 60              | 3.48              | 270    | 70              | 3.67              | 192    | 76              |
| MP023#3R3-B--   | 3.3              | 270           | 4.3     | 563                     | 310  | 3.37             | 593    | 58              | 3.60              | 265    | 67              | 3.80              | 188    | 72              |
| MP023#3R4-B--   | 3.4              | 265           | 4.3     | 556                     | 306  | 3.47             | 586    | 57              | 3.71              | 261    | 63              | 3.93              | 184    | 68              |
| MP023#3R5-B--   | 3.5              | 260           | 4.2     | 548                     | 302  | 3.58             | 579    | 55              | 3.83              | 256    | 60              | 4.06              | 180    | 64              |
| MP023#3R6-B--   | 3.6              | 255           | 4.2     | 541                     | 298  | 3.68             | 572    | 53              | 3.95              | 252    | 57              | 4.19              | 177    | 60              |
| MP023#3R7-B--   | 3.7              | 250           | 4.1     | 534                     | 294  | 3.78             | 565    | 51              | 4.06              | 247    | 54              | 4.32              | 173    | 56              |
| MP023#3R8-B--   | 3.8              | 245           | 4.0     | 526                     | 289  | 3.89             | 558    | 49              | 4.18              | 243    | 50              | 4.45              | 169    | 52              |
| MP023#3R9-B--   | 3.9              | 240           | 3.9     | 519                     | 285  | 3.99             | 551    | 47              | 4.30              | 238    | 47              | 4.58              | 165    | 48              |
| MP02Z#4R0-B--   | 4                | 235           | 3.9     | 513                     | 282  | 4.10             | 545    | 47              | 4.42              | 235    | 47              | 4.73              | 162    | 48              |
| MP02Z#4R1-B--   | 4.1              | 235           | 3.8     | 507                     | 279  | 4.20             | 539    | 47              | 4.55              | 232    | 46              | 4.87              | 160    | 48              |
| MP02Z#4R2-B--   | 4.2              | 230           | 3.8     | 501                     | 275  | 4.30             | 534    | 46              | 4.67              | 228    | 46              | 5.01              | 157    | 48              |
| MP02Z#4R3-B--   | 4.3              | 225           | 3.7     | 495                     | 272  | 4.41             | 528    | 46              | 4.79              | 225    | 46              | 5.16              | 154    | 48              |
| MP02Z#4R4-B--   | 4.4              | 220           | 3.7     | 489                     | 269  | 4.51             | 522    | 46              | 4.92              | 222    | 46              | 5.30              | 151    | 47              |

"#"-can be either "J" or "K" temperature coefficient

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at [www.kyocera-avx.com/disclaimer/](http://www.kyocera-avx.com/disclaimer/) by reference and should be reviewed in full before placing any order.

# Accu-P<sup>®</sup> MP Medical Grade



## 0402 Typical Electrical Tables

| Part Number                                 | Capacitance (pF) | ESR Max. mOhm | SRF GHz | Q Standard Value @ 1GHz |      | Frequency 900MHz |        |                 | Frequency 1900MHz |        |                 | Frequency 2400MHz |        |                 |
|---|------------------|---------------|---------|-------------------------|------|------------------|--------|-----------------|-------------------|--------|-----------------|-------------------|--------|-----------------|
|   |                  |               |         | Typ.                    | Min. | Ceff (pF)        | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) |
|   |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP02Z#4R5-B--                               | 4.5              | 215           | 3.6     | 483                     | 265  | 4.61             | 516    | 46              | 5.04              | 219    | 45              | 5.44              | 149    | 47              |
| MP02Z#4R6-B--                               | 4.6              | 215           | 3.6     | 477                     | 262  | 4.72             | 511    | 45              | 5.16              | 216    | 45              | 5.59              | 146    | 47              |
| MP02Z#4R7-B--                               | 4.7              | 210           | 3.5     | 471                     | 259  | 4.82             | 505    | 45              | 5.29              | 213    | 45              | 5.73              | 143    | 47              |
| MP02Z#5R1-B--                               | 5.1              | 205           | 3.4     | 446                     | 245  | 5.23             | 482    | 44              | 5.78              | 200    | 43              | 6.30              | 133    | 47              |
| MP02Z#5R6-B--                               | 5.6              | 200           | 3.3     | 416                     | 229  | 5.75             | 453    | 43              | 6.40              | 184    | 42              | 7.02              | 119    | 46              |
| MP02Z#6R2-B--                               | 6.2              | 195           | 3.0     | 488                     | 213  | 6.41             | 427    | 44              | 7.26              | 167    | 44              | 8.11              | 107    | 47              |
| MP02Z#6R8-B--                               | 6.8              | 190           | 2.8     | 360                     | 198  | 7.07             | 400    | 44              | 8.12              | 150    | 45              | 9.19              | 95     | 48              |
| MP02Z#7R5-B--                               | 7.5              | 185           | 2.7     | 338                     | 186  | 7.85             | 378    | 45              | 9.17              | 139    | 47              | 10.57             | 86     | 49              |
| MP02Z#8R2-B--                               | 8.2              | 180           | 2.6     | 315                     | 173  | 8.62             | 356    | 45              | 10.22             | 128    | 48              | 11.95             | 77     | 50              |
| MP02Z#9R1-B--                               | 9.1              | 175           | 2.5     | 292                     | 160  | 9.63             | 333    | 45              | 11.75             | 115    | 47              | 14.23             | 69     | 50              |
| MP02Z#100-B--                               | 10               | 170           | 2.4     | 268                     | 148  | 10.65            | 310    | 45              | 13.28             | 103    | 47              | 16.50             | 61     | 49              |
| MP02Z#110-B--                               | 11               | 170           | 2.3     | 242                     | 133  | 11.77            | 285    | 44              | 14.98             | 89     | 46              | 19.04             | 51     | 49              |
| MP02Z#120-B--                               | 12               | 165           | 2.2     | 217                     | 119  | 12.90            | 259    | 44              | 16.68             | 75     | 45              | 21.57             | 42     | 48              |
| MP02ZK130-B--                               | 13               | 165           | 2.2     | 202                     | 111  | 14.03            | 241    | 44              | 18.83             | 68     | 47              | 25.73             | 38     | 49              |
| MP02ZK140-B--                               | 14               | 160           | 2.1     | 187                     | 103  | 15.17            | 223    | 44              | 20.97             | 62     | 49              | 29.89             | 33     | 49              |
| MP02ZK150-B--                               | 15               | 160           | 2.1     | 173                     | 94   | 16.30            | 204    | 45              | 23.12             | 56     | 51              | 34.05             | 29     | 50              |
| MP02ZK160-B--                               | 16               | 155           | 2.0     | 157                     | 87   | 17.53            | 187    | 44              | 25.91             | 50     | 49              | 41.44             | 25     | 49              |
| MP02ZK170-B--                               | 17               | 155           | 1.9     | 143                     | 79   | 18.75            | 169    | 43              | 28.70             | 45     | 46              | 48.82             | 21     | 47              |
| MP02ZK180-B--                               | 18               | 150           | 1.8     | 129                     | 71   | 19.98            | 152    | 42              | 31.49             | 39     | 44              | 56.21             | 17     | 46              |
| MP02ZK190-B--                               | 19               | 150           | 1.8     | 121                     | 67   | 21.11            | 143    | 42              | 33.51             | 36     | 44              | 60.92             | 15     | 47              |
| MP02ZK200-B--                               | 20               | 145           | 1.8     | 110                     | 61   | 22.25            | 131    | 41              | 35.53             | 33     | 43              | 65.63             | 14     | 48              |
| MP02ZK220-B--                               | 22               | 145           | 1.8     | 98                      | 54   | 24.51            | 116    | 41              | 39.57             | 26     | 42              | 75.05             | 10     | 51              |
| MP02ZK240-B--                               | 24               | 140           | 1.8     | 87                      | 48   | 27.51            | 104    | 37              | 54.94             | 21     | 35              | N/A               | N/A    | N/A             |
| MP02ZK270-B--                               | 27               | 140           | 1.7     | 70                      | 39   | 32.01            | 85     | 32              | 77.98             | 13     | 23              | N/A               | N/A    | N/A             |
| MP02ZK300-B--                               | 30               | 135           | 1.7     | 65                      | 36   | 35.89            | 78     | 28              | 106.50            | 10     | 12              | N/A               | N/A    | N/A             |
| MP02ZK330-B--                               | 33               | 135           | 1.7     | 60                      | 33   | 40.05            | 74     | 27              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP02ZK390-B--                               | 39               | 130           | 1.7     | 56                      | 31   | 50.21            | 69     | 28              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP02ZK470-B--                               | 47               | 130           | 1.6     | 50                      | 28   | 63.75            | 63     | 30              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP02ZK560-B--                               | 56               | 130           | 1.6     | 44                      | 24   | 78.99            | 56     | 33              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP02ZK680-B--                               | 68               | 130           | 1.6     | 32                      | 18   | 106.28           | 42     | 40              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| <b>U<sub>R</sub> = 16V (Voltage code Y)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP02Y#R05-B--                               | 0.05             | N/A           | 20.9    | 856                     | 471  | 0.06             | 881    | 1411            | 0.06              | 562    | 1216            | 0.06              | 498    | 983             |
| MP02Y#OR1-B--                               | 0.1              | 6000          | 19.4    | 848                     | 466  | 0.11             | 873    | 1316            | 0.11              | 554    | 1115            | 0.11              | 490    | 914             |
| MP02Y#R15-B--                               | 0.15             | 4800          | 17.9    | 840                     | 462  | 0.16             | 866    | 1222            | 0.16              | 547    | 1013            | 0.16              | 482    | 845             |
| MP02Y#OR2-B--                               | 0.2              | 3600          | 16.4    | 832                     | 457  | 0.21             | 858    | 1128            | 0.21              | 539    | 912             | 0.22              | 474    | 776             |
| MP02Y#R25-B--                               | 0.25             | 2700          | 15.5    | 823                     | 453  | 0.26             | 850    | 1033            | 0.27              | 523    | 810             | 0.27              | 465    | 707             |
| MP02Y#OR3-B--                               | 0.3              | 1800          | 14.6    | 815                     | 448  | 0.31             | 842    | 939             | 0.32              | 525    | 708             | 0.32              | 457    | 638             |
| MP02Y#R35-B--                               | 0.35             | 1650          | 14.1    | 807                     | 444  | 0.36             | 834    | 844             | 0.37              | 517    | 607             | 0.37              | 449    | 569             |
| MP02Y#OR4-B--                               | 0.4              | 1500          | 125.0   | 799                     | 439  | 0.41             | 827    | 750             | 0.42              | 510    | 505             | 0.42              | 441    | 500             |
| MP02Y#R45-B--                               | 0.45             | 1400          | 11.9    | 791                     | 435  | 0.46             | 819    | 667             | 0.47              | 502    | 458             | 0.48              | 432    | 453             |
| MP02Y#OR5-B--                               | 0.5              | 1300          | 11.3    | 783                     | 430  | 0.51             | 811    | 583             | 0.52              | 495    | 410             | 0.53              | 424    | 407             |
| MP02Y#R55-B--                               | 0.55             | 1200          | 10.9    | 774                     | 426  | 0.57             | 803    | 500             | 0.57              | 487    | 363             | 0.58              | 416    | 360             |
| MP02Y#OR6-B--                               | 0.6              | 1100          | 10.4    | 766                     | 421  | 0.62             | 796    | 465             | 0.62              | 480    | 343             | 0.63              | 408    | 339             |
| MP02Y#R65-B--                               | 0.65             | 1025          | 10.0    | 758                     | 417  | 0.67             | 788    | 431             | 0.67              | 472    | 322             | 0.68              | 399    | 317             |
| MP02Y#OR7-B--                               | 0.7              | 950           | 9.5     | 750                     | 413  | 0.72             | 780    | 396             | 0.72              | 465    | 302             | 0.73              | 391    | 296             |
| MP02Y#R75-B--                               | 0.75             | 900           | 9.3     | 746                     | 410  | 0.77             | 776    | 375             | 0.78              | 456    | 290             | 0.79              | 381    | 285             |
| MP02Y#OR8-B--                               | 0.8              | 850           | 9.1     | 743                     | 408  | 0.82             | 772    | 354             | 0.83              | 447    | 277             | 0.84              | 370    | 273             |
| MP02Y#R85-B--                               | 0.85             | 800           | 9.0     | 739                     | 406  | 0.87             | 768    | 334             | 0.88              | 438    | 265             | 0.89              | 360    | 262             |
| MP02Y#OR9-B--                               | 0.9              | 750           | 8.8     | 735                     | 404  | 0.92             | 764    | 313             | 0.93              | 429    | 253             | 0.95              | 350    | 250             |
| MP02Y#R95-B--                               | 0.95             | 712           | 8.4     | 732                     | 402  | 0.97             | 760    | 292             | 0.98              | 420    | 240             | 1.00              | 339    | 239             |
| MP02Y#1R0-B--                               | 1                | 675           | 8.0     | 728                     | 400  | 1.02             | 756    | 271             | 1.04              | 411    | 228             | 1.05              | 329    | 227             |
| Contact Factory                             | 1.05             | 638           | 7.9     | 725                     | 398  | 1.07             | 752    | 258             | 1.09              | 406    | 221             | 1.11              | 323    | 221             |
| MP02Y#1R1-B--                               | 1.1              | 600           | 7.8     | 721                     | 397  | 1.12             | 749    | 245             | 1.14              | 401    | 214             | 1.16              | 318    | 214             |
| Contact Factory                             | 1.15             | 575           | 7.6     | 718                     | 395  | 1.17             | 745    | 232             | 1.20              | 396    | 207             | 1.22              | 312    | 208             |
| <b>U<sub>R</sub> = 16V (Voltage code Y)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP02Y#1R2-B--                               | 1.2              | 550           | 7.4     | 714                     | 393  | 1.22             | 742    | 218             | 1.25              | 391    | 200             | 1.27              | 306    | 202             |
| Contact Factory                             | 1.25             | 525           | 7.2     | 711                     | 391  | 1.27             | 738    | 205             | 1.31              | 386    | 193             | 1.32              | 301    | 195             |
| MP02Y#1R3-B--                               | 1.3              | 500           | 7.0     | 707                     | 389  | 1.32             | 734    | 192             | 1.36              | 381    | 185             | 1.38              | 295    | 189             |
| Contact Factory                             | 1.35             | 485           | 6.9     | 704                     | 387  | 1.37             | 731    | 179             | 1.41              | 376    | 178             | 1.43              | 289    | 183             |
| MP02Y#1R4-B--                               | 1.4              | 470           | 6.8     | 700                     | 385  | 1.42             | 727    | 165             | 1.47              | 371    | 171             | 1.49              | 283    | 177             |
| Contact Factory                             | 1.45             | 460           | 6.7     | 697                     | 383  | 1.47             | 724    | 152             | 1.52              | 366    | 164             | 1.54              | 278    | 170             |
| MP02Y#1R5-B--                               | 1.5              | 450           | 6.5     | 693                     | 381  | 1.52             | 720    | 139             | 1.58              | 361    | 157             | 1.60              | 272    | 164             |
| Contact Factory                             | 1.55             | 440           | 6.5     | 690                     | 379  | 1.56             | 716    | 135             | 1.62              | 358    | 153             | 1.65              | 269    | 159             |
| MP02Y#1R6-B--                               | 1.6              | 430           | 6.5     | 686                     | 377  | 1.61             | 716    | 130             | 1.67              | 355    | 148             | 1.70              | 267    | 155             |
| Contact Factory                             | 1.65             | 422           | 6.5     | 683                     | 375  | 1.66             | 709    | 126             | 1.72              | 352    | 143             | 1.76              | 264    | 150             |

"#"-can be either "J" or "K" temperature coefficient



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at [www.kyocera-avx.com/disclaimer/](http://www.kyocera-avx.com/disclaimer/) by reference and should be reviewed in full before placing any order.

# Accu-P® MP Medical Grade



## 0402 Typical Electrical Tables

| Part Number                      | Capacitance (pF) | ESR Max. mOhm | SRF GHz | Q Standard Value @ 1GHz |      | Frequency 900MHz |        |                 | Frequency 1900MHz |        |                 | Frequency 2400MHz |        |                 |
|----------------------------------|------------------|---------------|---------|-------------------------|------|------------------|--------|-----------------|-------------------|--------|-----------------|-------------------|--------|-----------------|
|                                  |                  |               |         | Typ.                    | Min. | Ceff (pF)        | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) |
|                                  |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP02Y#1R7-B--                    | 1.7              | 415           | 6.4     | 679                     | 373  | 1.71             | 705    | 122             | 1.77              | 349    | 139             | 1.81              | 267    | 146             |
| Contact Factory                  | 1.75             | 408           | 6.3     | 676                     | 372  | 1.75             | 702    | 118             | 1.82              | 347    | 134             | 1.86              | 259    | 141             |
| MP02Y#1R8-B--                    | 1.8              | 400           | 6.2     | 672                     | 370  | 1.80             | 698    | 113             | 1.87              | 344    | 130             | 1.92              | 256    | 137             |
| Contact Factory                  | 1.85             | 395           | 6.1     | 669                     | 368  | 1.85             | 694    | 109             | 1.92              | 341    | 125             | 1.97              | 253    | 132             |
| MP02Y#1R9-B--                    | 1.9              | 390           | 6.0     | 665                     | 366  | 1.90             | 690    | 105             | 1.97              | 338    | 121             | 2.02              | 251    | 128             |
| Contact Factory                  | 1.95             | 385           | 5.9     | 662                     | 364  | 1.94             | 687    | 101             | 2.01              | 335    | 116             | 2.08              | 248    | 123             |
| MP02Y#2R0-B--                    | 2                | 380           | 5.7     | 658                     | 362  | 1.99             | 683    | 96              | 2.06              | 332    | 112             | 2.13              | 245    | 119             |
| MP02Y#2R1-B--                    | 2.1              | 370           | 5.4     | 651                     | 358  | 2.10             | 676    | 93              | 2.18              | 326    | 108             | 2.26              | 241    | 115             |
| MP02Y#2R2-B--                    | 2.2              | 360           | 5.1     | 643                     | 354  | 2.21             | 669    | 89              | 2.30              | 321    | 104             | 2.38              | 236    | 112             |
| MP02Y#2R3-B--                    | 2.3              | 350           | 5.0     | 636                     | 350  | 2.31             | 662    | 85              | 2.42              | 315    | 101             | 2.51              | 231    | 109             |
| MP02Y#2R4-B--                    | 2.4              | 340           | 4.9     | 629                     | 346  | 2.42             | 656    | 81              | 2.54              | 309    | 97              | 2.64              | 226    | 106             |
| MP02Y#2R5-B--                    | 2.5              | 330           | 4.7     | 622                     | 342  | 2.53             | 649    | 77              | 2.65              | 303    | 94              | 2.76              | 221    | 102             |
| MP02Y#2R6-B--                    | 2.6              | 320           | 4.6     | 614                     | 338  | 2.64             | 642    | 74              | 2.77              | 298    | 90              | 2.89              | 216    | 99              |
| MP02Y#2R7-B--                    | 2.7              | 310           | 4.5     | 607                     | 334  | 2.75             | 635    | 70              | 2.89              | 292    | 86              | 3.02              | 211    | 96              |
| MP02Y#2R8-B--                    | 2.8              | 300           | 4.5     | 600                     | 330  | 2.85             | 628    | 68              | 3.01              | 288    | 83              | 3.15              | 207    | 92              |
| MP02Y#2R9-B--                    | 2.9              | 295           | 4.4     | 592                     | 326  | 2.95             | 621    | 66              | 3.13              | 283    | 80              | 3.28              | 203    | 88              |
| MP02Y#3R0-B--                    | 3                | 280           | 4.4     | 585                     | 322  | 3.06             | 614    | 64              | 3.24              | 279    | 76              | 3.41              | 200    | 84              |
| MP02Y#3R1-B--                    | 3.1              | 275           | 4.4     | 578                     | 318  | 3.16             | 607    | 62              | 3.36              | 274    | 73              | 3.54              | 196    | 80              |
| MP02Y#3R2-B--                    | 3.2              | 275           | 4.3     | 570                     | 314  | 3.27             | 600    | 60              | 3.48              | 270    | 70              | 3.67              | 192    | 76              |
| MP02Y#3R3-B--                    | 3.3              | 270           | 4.3     | 563                     | 310  | 3.37             | 593    | 58              | 3.60              | 265    | 67              | 3.80              | 188    | 72              |
| MP02Y#3R4-B--                    | 3.4              | 265           | 4.3     | 556                     | 306  | 3.47             | 586    | 57              | 3.71              | 261    | 63              | 3.93              | 184    | 68              |
| MP02Y#3R5-B--                    | 3.5              | 260           | 4.2     | 548                     | 302  | 3.58             | 579    | 55              | 3.83              | 256    | 60              | 4.06              | 180    | 64              |
| MP02Y#3R6-B--                    | 3.6              | 255           | 4.2     | 541                     | 298  | 3.68             | 572    | 53              | 3.95              | 252    | 57              | 4.19              | 177    | 60              |
| MP02Y#3R7-B--                    | 3.7              | 250           | 4.1     | 534                     | 294  | 3.78             | 565    | 51              | 4.06              | 247    | 54              | 4.32              | 173    | 56              |
| MP02Y#3R8-B--                    | 3.8              | 245           | 4.0     | 526                     | 289  | 3.89             | 558    | 49              | 4.18              | 243    | 50              | 4.45              | 169    | 52              |
| MP02Y#3R9-B--                    | 3.9              | 240           | 3.9     | 519                     | 285  | 3.99             | 551    | 47              | 4.30              | 238    | 47              | 4.58              | 165    | 48              |
| MP02Y#4R0-B--                    | 4                | 235           | 3.9     | 513                     | 282  | 4.10             | 545    | 47              | 4.42              | 235    | 47              | 4.73              | 162    | 48              |
| MP02Y#4R1-B--                    | 4.1              | 235           | 3.8     | 507                     | 279  | 4.20             | 539    | 47              | 4.55              | 232    | 46              | 4.87              | 160    | 48              |
| MP02Y#4R2-B--                    | 4.2              | 230           | 3.8     | 501                     | 275  | 4.30             | 534    | 46              | 4.67              | 228    | 46              | 5.01              | 157    | 48              |
| MP02Y#4R3-B--                    | 4.3              | 225           | 3.7     | 495                     | 272  | 4.41             | 528    | 46              | 4.79              | 225    | 46              | 5.16              | 154    | 48              |
| MP02Y#4R4-B--                    | 4.4              | 220           | 3.7     | 489                     | 269  | 4.51             | 522    | 46              | 4.92              | 222    | 46              | 5.30              | 151    | 47              |
| MP02Y#4R5-B--                    | 4.5              | 215           | 3.6     | 483                     | 265  | 4.61             | 516    | 46              | 5.04              | 219    | 45              | 5.44              | 149    | 47              |
| MP02Y#4R6-B--                    | 4.6              | 215           | 3.6     | 477                     | 262  | 4.72             | 511    | 45              | 5.16              | 216    | 45              | 5.59              | 146    | 47              |
| MP02Y#4R7-B--                    | 4.7              | 210           | 3.5     | 471                     | 259  | 4.82             | 505    | 45              | 5.29              | 213    | 45              | 5.73              | 143    | 47              |
| MP02Y#5R1-B--                    | 5.1              | 205           | 3.4     | 446                     | 245  | 5.23             | 482    | 44              | 5.78              | 200    | 43              | 6.30              | 133    | 47              |
| MP02Y#5R6-B--                    | 5.6              | 200           | 3.3     | 416                     | 229  | 5.75             | 453    | 43              | 6.40              | 184    | 42              | 7.02              | 119    | 46              |
| MP02Y#6R2-B--                    | 6.2              | 195           | 3.0     | 488                     | 213  | 6.41             | 427    | 44              | 7.26              | 167    | 44              | 8.11              | 107    | 47              |
| MP02Y#6R8-B--                    | 6.8              | 190           | 2.8     | 360                     | 198  | 7.07             | 400    | 44              | 8.12              | 150    | 45              | 9.19              | 95     | 48              |
| MP02Y#7R5-B--                    | 7.5              | 185           | 2.7     | 338                     | 186  | 7.85             | 378    | 45              | 9.17              | 139    | 47              | 10.57             | 86     | 49              |
| MP02Y#8R2-B--                    | 8.2              | 180           | 2.6     | 315                     | 173  | 8.62             | 356    | 45              | 10.22             | 128    | 48              | 11.95             | 77     | 50              |
| MP02Y#9R1-B--                    | 9.1              | 175           | 2.5     | 292                     | 160  | 9.63             | 333    | 45              | 11.75             | 115    | 47              | 14.23             | 69     | 50              |
| MP02Y#100-B--                    | 10               | 170           | 2.4     | 268                     | 148  | 10.65            | 310    | 45              | 13.28             | 103    | 47              | 16.50             | 61     | 49              |
| MP02Y#110-B--                    | 11               | 170           | 2.3     | 242                     | 133  | 11.77            | 285    | 44              | 14.98             | 89     | 46              | 19.04             | 51     | 49              |
| MP02Y#120-B--                    | 12               | 165           | 2.2     | 217                     | 119  | 12.90            | 259    | 44              | 16.68             | 75     | 45              | 21.57             | 42     | 48              |
| MP02YK130-B--                    | 13               | 165           | 2.2     | 202                     | 111  | 14.03            | 241    | 44              | 18.83             | 68     | 47              | 25.73             | 38     | 49              |
| MP02YK140-B--                    | 14               | 160           | 2.1     | 187                     | 103  | 15.17            | 223    | 44              | 20.97             | 62     | 49              | 29.89             | 33     | 49              |
| MP02YK150-B--                    | 15               | 160           | 2.1     | 173                     | 94   | 16.30            | 204    | 45              | 23.12             | 56     | 51              | 34.05             | 29     | 50              |
| MP02-K160-B--                    | 16               | 155           | 2.0     | 157                     | 87   | 17.53            | 187    | 44              | 25.91             | 50     | 49              | 41.44             | 25     | 49              |
| MP02YK170-B--                    | 17               | 155           | 1.9     | 143                     | 79   | 18.75            | 169    | 43              | 28.70             | 45     | 46              | 48.82             | 21     | 47              |
| <b>UR = 25V (Voltage code 3)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP023#R05-B--                    | 0.05             | N/A           | 20.9    | 856                     | 471  | 0.06             | 881    | 1411            | 0.06              | 562    | 1216            | 0.06              | 498    | 983             |
| MP023#OR1-B--                    | 0.1              | 6000          | 19.4    | 848                     | 466  | 0.11             | 873    | 1316            | 0.11              | 554    | 1115            | 0.11              | 490    | 914             |
| MP023#R15-B--                    | 0.15             | 4800          | 17.9    | 840                     | 462  | 0.16             | 866    | 1222            | 0.16              | 547    | 1013            | 0.16              | 482    | 845             |
| MP023#OR2-B--                    | 0.2              | 3600          | 16.4    | 832                     | 457  | 0.21             | 858    | 1128            | 0.21              | 539    | 912             | 0.22              | 474    | 776             |
| MP023#R25-B--                    | 0.25             | 2700          | 15.5    | 823                     | 453  | 0.26             | 850    | 1033            | 0.27              | 523    | 810             | 0.27              | 465    | 707             |
| MP023#OR3-B--                    | 0.3              | 1800          | 14.6    | 815                     | 448  | 0.31             | 842    | 939             | 0.32              | 525    | 708             | 0.32              | 457    | 638             |
| MP023#R35-B--                    | 0.35             | 1650          | 14.1    | 807                     | 444  | 0.36             | 834    | 844             | 0.37              | 517    | 607             | 0.37              | 449    | 569             |
| MP023#OR4-B--                    | 0.4              | 1500          | 125.0   | 799                     | 439  | 0.41             | 827    | 750             | 0.42              | 510    | 505             | 0.42              | 441    | 500             |
| MP023#R45-B--                    | 0.45             | 1400          | 11.9    | 791                     | 435  | 0.46             | 819    | 667             | 0.47              | 502    | 458             | 0.48              | 432    | 453             |
| MP023#OR5-B--                    | 0.5              | 1300          | 11.3    | 783                     | 430  | 0.51             | 811    | 583             | 0.52              | 495    | 410             | 0.53              | 424    | 407             |
| MP023#R55-B--                    | 0.55             | 1200          | 10.9    | 774                     | 426  | 0.57             | 803    | 500             | 0.57              | 487    | 363             | 0.58              | 416    | 360             |
| MP023#OR6-B--                    | 0.6              | 1100          | 10.4    | 766                     | 421  | 0.62             | 796    | 465             | 0.62              | 480    | 343             | 0.63              | 408    | 339             |
| MP023#R65-B--                    | 0.65             | 1025          | 10.0    | 758                     | 417  | 0.67             | 788    | 431             | 0.67              | 472    | 322             | 0.68              | 399    | 317             |
| MP023#OR7-B--                    | 0.7              | 950           | 9.5     | 750                     | 413  | 0.72             | 780    | 396             | 0.72              | 465    | 302             | 0.73              | 391    | 296             |
| MP023#R75-B--                    | 0.75             | 900           | 9.3     | 746                     | 410  | 0.77             | 776    | 375             | 0.78              | 456    | 290             | 0.79              | 381    | 285             |

"#"-can be either "J" or "K" temperature coefficient



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at [www.kyocera-avx.com/disclaimer/](http://www.kyocera-avx.com/disclaimer/) by reference and should be reviewed in full before placing any order.

# Accu-P® MP Medical Grade



## 0402 Typical Electrical Tables

| Part Number                      | Capacitance (pF) | ESR Max. mOhm | SRF GHz | Q Standard Value @ 1GHz |      | Frequency 900MHz |        |                 | Frequency 1900MHz |        |                 | Frequency 2400MHz |        |                 |
|----------------------------------|------------------|---------------|---------|-------------------------|------|------------------|--------|-----------------|-------------------|--------|-----------------|-------------------|--------|-----------------|
|                                  |                  |               |         | Typ.                    | Min. | Ceff (pF)        | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) |
|                                  |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP023#0R8-B--                    | 0.8              | 850           | 9.1     | 743                     | 408  | 0.82             | 772    | 354             | 0.83              | 447    | 277             | 0.84              | 370    | 273             |
| MP023#R85-B--                    | 0.85             | 800           | 9.0     | 739                     | 406  | 0.87             | 768    | 334             | 0.88              | 438    | 265             | 0.89              | 360    | 262             |
| MP023#0R9-B--                    | 0.9              | 750           | 8.8     | 735                     | 404  | 0.92             | 764    | 313             | 0.93              | 429    | 253             | 0.95              | 350    | 250             |
| MP023#R95-B--                    | 0.95             | 712           | 8.4     | 732                     | 402  | 0.97             | 760    | 292             | 0.98              | 420    | 240             | 1.00              | 339    | 239             |
| MP023#1R0-B--                    | 1                | 675           | 8.0     | 728                     | 400  | 1.02             | 756    | 271             | 1.04              | 411    | 228             | 1.05              | 329    | 227             |
| Contact Factory                  | 1.05             | 638           | 7.9     | 725                     | 398  | 1.07             | 752    | 258             | 1.09              | 406    | 221             | 1.11              | 323    | 221             |
| MP023#1R1-B--                    | 1.1              | 600           | 7.8     | 721                     | 397  | 1.12             | 749    | 245             | 1.14              | 401    | 214             | 1.16              | 318    | 214             |
| Contact Factory                  | 1.15             | 575           | 7.6     | 718                     | 395  | 1.17             | 745    | 232             | 1.20              | 396    | 207             | 1.22              | 312    | 208             |
| MP023#1R2-B--                    | 1.2              | 550           | 7.4     | 714                     | 393  | 1.22             | 742    | 218             | 1.25              | 391    | 200             | 1.27              | 306    | 202             |
| Contact Factory                  | 1.25             | 525           | 7.2     | 711                     | 391  | 1.27             | 738    | 205             | 1.31              | 386    | 193             | 1.32              | 301    | 195             |
| MP023#1R3-B--                    | 1.3              | 500           | 7.0     | 707                     | 389  | 1.32             | 734    | 192             | 1.36              | 381    | 185             | 1.38              | 295    | 189             |
| Contact Factory                  | 1.35             | 485           | 6.9     | 704                     | 387  | 1.37             | 731    | 179             | 1.41              | 376    | 178             | 1.43              | 289    | 183             |
| MP023#1R4-B--                    | 1.4              | 470           | 6.8     | 700                     | 385  | 1.42             | 727    | 165             | 1.47              | 371    | 171             | 1.49              | 283    | 177             |
| Contact Factory                  | 1.45             | 460           | 6.7     | 697                     | 383  | 1.47             | 724    | 152             | 1.52              | 366    | 164             | 1.54              | 278    | 170             |
| MP023#1R5-B--                    | 1.5              | 450           | 6.5     | 693                     | 381  | 1.52             | 720    | 139             | 1.58              | 361    | 157             | 1.60              | 272    | 164             |
| Contact Factory                  | 1.55             | 440           | 6.5     | 690                     | 379  | 1.56             | 716    | 135             | 1.62              | 358    | 153             | 1.65              | 269    | 159             |
| MP023#1R6-B--                    | 1.6              | 430           | 6.5     | 686                     | 377  | 1.61             | 716    | 130             | 1.67              | 355    | 148             | 1.70              | 267    | 155             |
| Contact Factory                  | 1.65             | 422           | 6.5     | 683                     | 375  | 1.66             | 709    | 126             | 1.72              | 352    | 143             | 1.76              | 264    | 150             |
| MP023#1R7-B--                    | 1.7              | 415           | 6.4     | 679                     | 373  | 1.71             | 705    | 122             | 1.77              | 349    | 139             | 1.81              | 267    | 146             |
| Contact Factory                  | 1.75             | 408           | 6.3     | 676                     | 372  | 1.75             | 702    | 118             | 1.82              | 347    | 134             | 1.86              | 259    | 141             |
| MP023#1R8-B--                    | 1.8              | 400           | 6.2     | 672                     | 370  | 1.80             | 698    | 113             | 1.87              | 344    | 130             | 1.92              | 256    | 137             |
| Contact Factory                  | 1.85             | 395           | 6.1     | 669                     | 368  | 1.85             | 694    | 109             | 1.92              | 341    | 125             | 1.97              | 253    | 132             |
| MP023#1R9-B--                    | 1.9              | 390           | 6.0     | 665                     | 366  | 1.90             | 690    | 105             | 1.97              | 338    | 121             | 2.02              | 251    | 128             |
| Contact Factory                  | 1.95             | 385           | 5.9     | 662                     | 364  | 1.94             | 687    | 101             | 2.01              | 335    | 116             | 2.08              | 248    | 123             |
| MP023#2R0-B--                    | 2                | 380           | 5.7     | 658                     | 362  | 1.99             | 683    | 96              | 2.06              | 332    | 112             | 2.13              | 245    | 119             |
| MP023#2R1-B--                    | 2.1              | 370           | 5.4     | 651                     | 358  | 2.10             | 676    | 93              | 2.18              | 326    | 108             | 2.26              | 241    | 115             |
| MP023#2R2-B--                    | 2.2              | 360           | 5.1     | 643                     | 354  | 2.21             | 669    | 89              | 2.30              | 321    | 104             | 2.38              | 236    | 112             |
| MP023#2R3-B--                    | 2.3              | 350           | 5.0     | 636                     | 350  | 2.31             | 662    | 85              | 2.42              | 315    | 101             | 2.51              | 231    | 109             |
| MP023#2R4-B--                    | 2.4              | 340           | 4.9     | 629                     | 346  | 2.42             | 656    | 81              | 2.54              | 309    | 97              | 2.64              | 226    | 106             |
| MP023#2R5-B--                    | 2.5              | 330           | 4.7     | 622                     | 342  | 2.53             | 649    | 77              | 2.65              | 303    | 94              | 2.76              | 221    | 102             |
| MP023#2R6-B--                    | 2.6              | 320           | 4.6     | 614                     | 338  | 2.64             | 642    | 74              | 2.77              | 298    | 90              | 2.89              | 216    | 99              |
| MP023#2R7-B--                    | 2.7              | 310           | 4.5     | 607                     | 334  | 2.75             | 635    | 70              | 2.89              | 292    | 86              | 3.02              | 211    | 96              |
| MP023#2R8-B--                    | 2.8              | 300           | 4.5     | 600                     | 330  | 2.85             | 628    | 68              | 3.01              | 288    | 83              | 3.15              | 207    | 92              |
| MP023#2R9-B--                    | 2.9              | 295           | 4.4     | 592                     | 326  | 2.95             | 621    | 66              | 3.13              | 283    | 80              | 3.28              | 203    | 88              |
| MP023#3R0-B--                    | 3                | 280           | 4.4     | 585                     | 322  | 3.06             | 614    | 64              | 3.24              | 279    | 76              | 3.41              | 200    | 84              |
| MP023#3R1-B--                    | 3.1              | 275           | 4.4     | 578                     | 318  | 3.16             | 607    | 62              | 3.36              | 274    | 73              | 3.54              | 196    | 80              |
| MP023#3R2-B--                    | 3.2              | 275           | 4.3     | 570                     | 314  | 3.27             | 600    | 60              | 3.48              | 270    | 70              | 3.67              | 192    | 76              |
| MP023#3R3-B--                    | 3.3              | 270           | 4.3     | 563                     | 310  | 3.37             | 593    | 58              | 3.60              | 265    | 67              | 3.80              | 188    | 72              |
| MP023#3R4-B--                    | 3.4              | 265           | 4.3     | 556                     | 306  | 3.47             | 586    | 57              | 3.71              | 261    | 63              | 3.93              | 184    | 68              |
| MP023#3R5-B--                    | 3.5              | 260           | 4.2     | 548                     | 302  | 3.58             | 579    | 55              | 3.83              | 256    | 60              | 4.06              | 180    | 64              |
| MP023#3R6-B--                    | 3.6              | 255           | 4.2     | 541                     | 298  | 3.68             | 572    | 53              | 3.95              | 252    | 57              | 4.19              | 177    | 60              |
| MP023#3R7-B--                    | 3.7              | 250           | 4.1     | 534                     | 294  | 3.78             | 565    | 51              | 4.06              | 247    | 54              | 4.32              | 173    | 56              |
| MP023#3R8-B--                    | 3.8              | 245           | 4.0     | 526                     | 289  | 3.89             | 558    | 49              | 4.18              | 243    | 50              | 4.45              | 169    | 52              |
| MP023#3R9-B--                    | 3.9              | 240           | 3.9     | 519                     | 285  | 3.99             | 551    | 47              | 4.30              | 238    | 47              | 4.58              | 165    | 48              |
| <b>UR = 25V (Voltage code 3)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP023#4R0-B--                    | 4                | 235           | 3.9     | 513                     | 282  | 4.10             | 545    | 47              | 4.42              | 235    | 47              | 4.73              | 162    | 48              |
| MP023#4R1-B--                    | 4.1              | 235           | 3.8     | 507                     | 279  | 4.20             | 539    | 47              | 4.55              | 232    | 46              | 4.87              | 160    | 48              |
| MP023#4R2-B--                    | 4.2              | 230           | 3.8     | 501                     | 275  | 4.30             | 534    | 46              | 4.67              | 228    | 46              | 5.01              | 157    | 48              |
| MP023#4R3-B--                    | 4.3              | 225           | 3.7     | 495                     | 272  | 4.41             | 528    | 46              | 4.79              | 225    | 46              | 5.16              | 154    | 48              |
| MP023#4R4-B--                    | 4.4              | 220           | 3.7     | 489                     | 269  | 4.51             | 522    | 46              | 4.92              | 222    | 46              | 5.30              | 151    | 47              |
| MP023#4R5-B--                    | 4.5              | 215           | 3.6     | 483                     | 265  | 4.61             | 516    | 46              | 5.04              | 219    | 45              | 5.44              | 149    | 47              |
| MP023#4R6-B--                    | 4.6              | 215           | 3.6     | 477                     | 262  | 4.72             | 511    | 45              | 5.16              | 216    | 45              | 5.59              | 146    | 47              |
| MP023#4R7-B--                    | 4.7              | 210           | 3.5     | 471                     | 259  | 4.82             | 505    | 45              | 5.29              | 213    | 45              | 5.73              | 143    | 47              |
| MP023#5R1-B--                    | 5.1              | 205           | 3.4     | 446                     | 245  | 5.23             | 482    | 44              | 5.78              | 200    | 43              | 6.30              | 133    | 47              |
| MP023#5R6-B--                    | 5.6              | 200           | 3.3     | 416                     | 229  | 5.75             | 453    | 43              | 6.40              | 184    | 42              | 7.02              | 119    | 46              |
| MP023#6R2-B--                    | 6.2              | 195           | 3.0     | 488                     | 213  | 6.41             | 427    | 44              | 7.26              | 167    | 44              | 8.11              | 107    | 47              |
| MP023#6R8-B--                    | 6.8              | 190           | 2.8     | 360                     | 198  | 7.07             | 400    | 44              | 8.12              | 150    | 45              | 9.19              | 95     | 48              |
| MP023#7R5-B--                    | 7.5              | 185           | 2.7     | 338                     | 186  | 7.85             | 378    | 45              | 9.17              | 139    | 47              | 10.57             | 86     | 49              |
| <b>UR = 50V (Voltage code 5)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP025#R05-B--                    | 0.05             | N/A           | 20.9    | 856                     | 471  | 0.06             | 881    | 1411            | 0.06              | 562    | 1216            | 0.06              | 498    | 983             |
| MP025#0R1-B--                    | 0.1              | 6000          | 19.4    | 848                     | 466  | 0.11             | 873    | 1316            | 0.11              | 554    | 1115            | 0.11              | 490    | 914             |
| MP025#R15-B--                    | 0.15             | 4800          | 17.9    | 840                     | 462  | 0.16             | 866    | 1222            | 0.16              | 547    | 1013            | 0.16              | 482    | 845             |
| MP025#0R2-B--                    | 0.2              | 3600          | 16.4    | 832                     | 457  | 0.21             | 858    | 1128            | 0.21              | 539    | 912             | 0.22              | 474    | 776             |
| MP025#R25-B--                    | 0.25             | 2700          | 15.5    | 823                     | 453  | 0.26             | 850    | 1033            | 0.27              | 523    | 810             | 0.27              | 465    | 707             |
| MP025#0R3-B--                    | 0.3              | 1800          | 14.6    | 815                     | 448  | 0.31             | 842    | 939             | 0.32              | 525    | 708             | 0.32              | 457    | 638             |

"#"-can be either "J" or "K" temperature coefficient

# Accu-P® MP Medical Grade



## 0402 Typical Electrical Tables

| Part Number     | Capacitance (pF) | ESR Max. mOhm | SRF GHz | Q Standard Value @ 1GHz |      | Frequency 900MHz |        |                 | Frequency 1900MHz |        |                 | Frequency 2400MHz |        |                 |
|-----------------|------------------|---------------|---------|-------------------------|------|------------------|--------|-----------------|-------------------|--------|-----------------|-------------------|--------|-----------------|
|                 |                  |               |         | Typ.                    | Min. | Ceff (pF)        | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) |
|                 |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP025#R35-B--   | 0.35             | 1650          | 14.1    | 807                     | 444  | 0.36             | 834    | 844             | 0.37              | 517    | 607             | 0.37              | 449    | 569             |
| MP025#OR4-B--   | 0.4              | 1500          | 125.0   | 799                     | 439  | 0.41             | 827    | 750             | 0.42              | 510    | 505             | 0.42              | 441    | 500             |
| MP025#R45-B--   | 0.45             | 1400          | 11.9    | 791                     | 435  | 0.46             | 819    | 667             | 0.47              | 502    | 458             | 0.48              | 432    | 453             |
| MP025#OR5-B--   | 0.5              | 1300          | 11.3    | 783                     | 430  | 0.51             | 811    | 583             | 0.52              | 495    | 410             | 0.53              | 424    | 407             |
| MP025#R55-B--   | 0.55             | 1200          | 10.9    | 774                     | 426  | 0.57             | 803    | 500             | 0.57              | 487    | 363             | 0.58              | 416    | 360             |
| MP025#OR6-B--   | 0.6              | 1100          | 10.4    | 766                     | 421  | 0.62             | 796    | 465             | 0.62              | 480    | 343             | 0.63              | 408    | 339             |
| MP025#R65-B--   | 0.65             | 1025          | 10.0    | 758                     | 417  | 0.67             | 788    | 431             | 0.67              | 472    | 322             | 0.68              | 399    | 317             |
| MP025#OR7-B--   | 0.7              | 950           | 9.5     | 750                     | 413  | 0.72             | 780    | 396             | 0.72              | 465    | 302             | 0.73              | 391    | 296             |
| MP025#R75-B--   | 0.75             | 900           | 9.3     | 746                     | 410  | 0.77             | 776    | 375             | 0.78              | 456    | 290             | 0.79              | 381    | 285             |
| MP025#OR8-B--   | 0.8              | 850           | 9.1     | 743                     | 408  | 0.82             | 772    | 354             | 0.83              | 447    | 277             | 0.84              | 370    | 273             |
| MP025#R85-B--   | 0.85             | 800           | 9.0     | 739                     | 406  | 0.87             | 768    | 334             | 0.88              | 438    | 265             | 0.89              | 360    | 262             |
| MP025#OR9-B--   | 0.9              | 750           | 8.8     | 735                     | 404  | 0.92             | 764    | 313             | 0.93              | 429    | 253             | 0.95              | 350    | 250             |
| MP025#R95-B--   | 0.95             | 712           | 8.4     | 732                     | 402  | 0.97             | 760    | 292             | 0.98              | 420    | 240             | 1.00              | 339    | 239             |
| MP025#1R0-B--   | 1                | 675           | 8.0     | 728                     | 400  | 1.02             | 756    | 271             | 1.04              | 411    | 228             | 1.05              | 329    | 227             |
| Contact Factory | 1.05             | 638           | 7.9     | 725                     | 398  | 1.07             | 752    | 258             | 1.09              | 406    | 221             | 1.11              | 323    | 221             |
| MP025#1R1-B--   | 1.1              | 600           | 7.8     | 721                     | 397  | 1.12             | 749    | 245             | 1.14              | 401    | 214             | 1.16              | 318    | 214             |
| Contact Factory | 1.15             | 575           | 7.6     | 718                     | 395  | 1.17             | 745    | 232             | 1.20              | 396    | 207             | 1.22              | 312    | 208             |
| MP025#1R2-B--   | 1.2              | 550           | 7.4     | 714                     | 393  | 1.22             | 742    | 218             | 1.25              | 391    | 200             | 1.27              | 306    | 202             |
| Contact Factory | 1.25             | 525           | 7.2     | 711                     | 391  | 1.27             | 738    | 205             | 1.31              | 386    | 193             | 1.32              | 301    | 195             |
| MP025#1R3-B--   | 1.3              | 500           | 7.0     | 707                     | 389  | 1.32             | 734    | 192             | 1.36              | 381    | 185             | 1.38              | 295    | 189             |
| Contact Factory | 1.35             | 485           | 6.9     | 704                     | 387  | 1.37             | 731    | 179             | 1.41              | 376    | 178             | 1.43              | 289    | 183             |
| MP025#1R4-B--   | 1.4              | 470           | 6.8     | 700                     | 385  | 1.42             | 727    | 165             | 1.47              | 371    | 171             | 1.49              | 283    | 177             |
| Contact Factory | 1.45             | 460           | 6.7     | 697                     | 383  | 1.47             | 724    | 152             | 1.52              | 366    | 164             | 1.54              | 278    | 170             |
| MP025#1R5-B--   | 1.5              | 450           | 6.5     | 693                     | 381  | 1.52             | 720    | 139             | 1.58              | 361    | 157             | 1.60              | 272    | 164             |
| Contact Factory | 1.55             | 440           | 6.5     | 690                     | 379  | 1.56             | 716    | 135             | 1.62              | 358    | 153             | 1.65              | 269    | 159             |
| MP025#1R6-B--   | 1.6              | 430           | 6.5     | 686                     | 377  | 1.61             | 716    | 130             | 1.67              | 355    | 148             | 1.70              | 267    | 155             |
| Contact Factory | 1.65             | 422           | 6.5     | 683                     | 375  | 1.66             | 709    | 126             | 1.72              | 352    | 143             | 1.76              | 264    | 150             |
| MP025#1R7-B--   | 1.7              | 415           | 6.4     | 679                     | 373  | 1.71             | 705    | 122             | 1.77              | 349    | 139             | 1.81              | 267    | 146             |
| Contact Factory | 1.75             | 408           | 6.3     | 676                     | 372  | 1.75             | 702    | 118             | 1.82              | 347    | 134             | 1.86              | 259    | 141             |
| MP025#1R8-B--   | 1.8              | 400           | 6.2     | 672                     | 370  | 1.80             | 698    | 113             | 1.87              | 344    | 130             | 1.92              | 256    | 137             |

"# "=can be either "J" or "K" temperature coefficient

# Accu-P® MP Medical Grade

## 0603 Typical Electrical Tables



| Part Number     | Capacitance (pF) | ESR Max. mOhm | SRF GHz | Q Standard Value @ 1GHz |      | Frequency 900MHz |        |                 | Frequency 1900MHz |        |                 | Frequency 2400MHz |        |                 |
|-----------------|------------------|---------------|---------|-------------------------|------|------------------|--------|-----------------|-------------------|--------|-----------------|-------------------|--------|-----------------|
|                 |                  |               |         | Typ.                    | Min. | Ceff (pF)        | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) |
|                 |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP03Z#R05-B--   | 0.05             | N/A           | 25.6    | 1200                    | 660  | 0.06             | 1333   | 945             | 0.06              | 556    | 832             | 0.06              | 397    | 880             |
| MP03Z#R01-B--   | 0.1              | 6000          | 18.1    | 1156                    | 636  | 0.11             | 1284   | 675             | 0.11              | 535    | 628             | 0.11              | 382    | 667             |
| MP03Z#R15-B--   | 0.15             | 4800          | 14.8    | 1111                    | 611  | 0.16             | 1235   | 555             | 0.16              | 514    | 533             | 0.16              | 367    | 567             |
| MP03Z#R2-B--    | 0.2              | 3600          | 12.8    | 1067                    | 587  | 0.21             | 1185   | 483             | 0.21              | 494    | 474             | 0.22              | 353    | 505             |
| MP03Z#R25-B--   | 0.25             | 2700          | 11.4    | 1022                    | 562  | 0.26             | 1136   | 433             | 0.27              | 473    | 433             | 0.27              | 338    | 462             |
| MP03Z#R3-B--    | 0.3              | 1800          | 10.4    | 978                     | 538  | 0.31             | 1086   | 397             | 0.32              | 453    | 402             | 0.32              | 323    | 430             |
| MP03Z#R35-B--   | 0.35             | 1650          | 9.7     | 933                     | 513  | 0.36             | 1037   | 368             | 0.37              | 432    | 378             | 0.37              | 309    | 404             |
| MP03Z#R4-B--    | 0.4              | 1500          | 9.0     | 889                     | 489  | 0.41             | 988    | 345             | 0.42              | 412    | 358             | 0.42              | 294    | 383             |
| MP03Z#R45-B--   | 0.45             | 1400          | 8.5     | 844                     | 464  | 0.46             | 938    | 326             | 0.47              | 391    | 341             | 0.48              | 279    | 365             |
| MP03Z#R5-B--    | 0.5              | 1300          | 8.1     | 800                     | 440  | 0.51             | 889    | 310             | 0.52              | 370    | 327             | 0.53              | 265    | 350             |
| MP03Z#R55-B--   | 0.55             | 1200          | 7.7     | 788                     | 434  | 0.57             | 875    | 296             | 0.57              | 363    | 315             | 0.58              | 261    | 337             |
| MP03Z#R6-B--    | 0.6              | 1100          | 7.4     | 777                     | 427  | 0.62             | 860    | 283             | 0.62              | 356    | 304             | 0.63              | 258    | 326             |
| MP03Z#R65-B--   | 0.65             | 1025          | 7.1     | 765                     | 421  | 0.67             | 846    | 273             | 0.67              | 348    | 294             | 0.68              | 255    | 315             |
| MP03Z#R7-B--    | 0.7              | 950           | 6.8     | 754                     | 414  | 0.72             | 832    | 263             | 0.72              | 341    | 285             | 0.73              | 252    | 306             |
| MP03Z#R75-B--   | 0.75             | 900           | 6.6     | 742                     | 408  | 0.77             | 817    | 254             | 0.78              | 334    | 277             | 0.79              | 248    | 298             |
| MP03Z#R8-B--    | 0.8              | 800           | 6.4     | 730                     | 402  | 0.82             | 803    | 247             | 0.83              | 326    | 270             | 0.84              | 245    | 290             |
| MP03Z#R85-B--   | 0.85             | 750           | 6.2     | 719                     | 395  | 0.87             | 789    | 239             | 0.88              | 319    | 264             | 0.89              | 242    | 283             |
| MP03Z#R9-B--    | 0.9              | 700           | 6.0     | 707                     | 389  | 0.92             | 775    | 233             | 0.93              | 312    | 258             | 0.95              | 239    | 277             |
| MP03Z#R95-B--   | 0.95             | 650           | 5.9     | 696                     | 383  | 0.97             | 760    | 227             | 0.98              | 304    | 252             | 1.00              | 235    | 271             |
| MP03Z#1R0-B--   | 1                | 600           | 5.7     | 684                     | 376  | 1.019            | 746    | 216             | 1.061             | 297    | 242             | 1.101             | 232    | 260             |
| Contact Factory | 1.05             | 575           | 5.6     | 667                     | 367  | 1.076            | 731    | 213             | 1.126             | 290    | 239             | 1.171             | 226    | 256             |
| MP03Z#1R1-B--   | 1.1              | 550           | 5.4     | 649                     | 357  | 1.134            | 717    | 210             | 1.190             | 282    | 236             | 1.241             | 220    | 253             |
| Contact Factory | 1.15             | 525           | 5.3     | 632                     | 347  | 1.192            | 702    | 206             | 1.254             | 275    | 233             | 1.311             | 214    | 250             |
| MP03Z#1R2-B--   | 1.2              | 500           | 5.2     | 614                     | 338  | 1.250            | 687    | 203             | 1.318             | 267    | 230             | 1.381             | 209    | 247             |
| Contact Factory | 1.25             | 475           | 5.1     | 605                     | 333  | 1.307            | 677    | 200             | 1.382             | 262    | 227             | 1.451             | 203    | 244             |
| MP03Z#1R3-B--   | 1.3              | 450           | 5.0     | 596                     | 328  | 1.365            | 667    | 197             | 1.446             | 257    | 224             | 1.521             | 197    | 241             |
| Contact Factory | 1.35             | 435           | 4.9     | 587                     | 323  | 1.423            | 658    | 194             | 1.511             | 252    | 221             | 1.591             | 191    | 238             |
| MP03Z#1R4-B--   | 1.4              | 420           | 4.8     | 578                     | 318  | 1.481            | 648    | 190             | 1.575             | 247    | 218             | 1.661             | 185    | 235             |
| Contact Factory | 1.45             | 405           | 4.8     | 569                     | 313  | 1.538            | 638    | 187             | 1.639             | 242    | 215             | 1.731             | 179    | 232             |
| MP03Z#1R5-B--   | 1.5              | 390           | 4.7     | 560                     | 308  | 1.596            | 628    | 184             | 1.703             | 237    | 212             | 1.801             | 173    | 229             |
| Contact Factory | 1.55             | 380           | 4.6     | 551                     | 303  | 1.645            | 620    | 181             | 1.760             | 233    | 209             | 1.866             | 170    | 226             |
| MP03Z#1R6-B--   | 1.6              | 370           | 4.5     | 542                     | 298  | 1.694            | 611    | 178             | 1.817             | 228    | 206             | 1.930             | 166    | 222             |
| Contact Factory | 1.65             | 360           | 4.5     | 534                     | 293  | 1.743            | 603    | 175             | 1.874             | 224    | 203             | 1.995             | 163    | 219             |
| MP03Z#1R7-B--   | 1.7              | 350           | 4.4     | 525                     | 289  | 1.792            | 595    | 172             | 1.931             | 219    | 200             | 2.060             | 159    | 216             |
| Contact Factory | 1.75             | 340           | 4.3     | 516                     | 284  | 1.841            | 587    | 169             | 1.988             | 215    | 197             | 2.124             | 156    | 213             |
| MP03Z#1R8-B--   | 1.8              | 330           | 4.2     | 507                     | 279  | 1.890            | 578    | 166             | 2.045             | 211    | 194             | 2.189             | 153    | 209             |
| Contact Factory | 1.85             | 320           | 4.2     | 498                     | 274  | 1.939            | 570    | 163             | 2.102             | 206    | 191             | 2.253             | 149    | 206             |
| MP03Z#1R9-B--   | 1.9              | 310           | 4.1     | 490                     | 269  | 1.988            | 562    | 160             | 2.158             | 202    | 188             | 2.318             | 146    | 203             |
| Contact Factory | 1.95             | 300           | 4.1     | 481                     | 264  | 2.037            | 553    | 157             | 2.215             | 197    | 185             | 2.383             | 142    | 199             |
| MP03Z#2R0-B--   | 2                | 290           | 4.0     | 472                     | 260  | 2.086            | 545    | 154             | 2.272             | 193    | 182             | 2.447             | 139    | 196             |
| MP03Z#2R1-B--   | 2.1              | 285           | 3.9     | 462                     | 254  | 2.190            | 535    | 151             | 2.402             | 187    | 180             | 2.604             | 134    | 193             |
| MP03Z#2R2-B--   | 2.2              | 280           | 3.8     | 452                     | 249  | 2.295            | 524    | 148             | 2.532             | 181    | 177             | 2.761             | 129    | 191             |
| MP03Z#2R3-B--   | 2.3              | 275           | 3.8     | 442                     | 243  | 2.400            | 514    | 145             | 2.662             | 175    | 175             | 2.917             | 124    | 188             |
| MP03Z#2R4-B--   | 2.4              | 270           | 3.7     | 433                     | 238  | 2.504            | 503    | 143             | 2.793             | 168    | 172             | 3.074             | 118    | 186             |
| MP03Z#2R5-B--   | 2.5              | 265           | 3.6     | 423                     | 232  | 2.609            | 493    | 140             | 2.923             | 162    | 170             | 3.230             | 113    | 183             |
| MP03Z#2R6-B--   | 2.6              | 265           | 3.6     | 413                     | 227  | 2.714            | 482    | 137             | 3.053             | 156    | 167             | 3.387             | 108    | 181             |
| MP03Z#2R7-B--   | 2.7              | 260           | 3.5     | 403                     | 222  | 2.818            | 472    | 134             | 3.183             | 150    | 165             | 3.543             | 103    | 178             |
| MP03Z#2R8-B--   | 2.8              | 255           | 3.4     | 395                     | 217  | 3.933            | 463    | 133             | 3.336             | 147    | 164             | 3.742             | 100    | 177             |
| MP03Z#2R9-B--   | 2.9              | 255           | 3.4     | 388                     | 213  | 3.047            | 453    | 131             | 3.489             | 144    | 162             | 3.940             | 97     | 175             |
| MP03Z#3R0-B--   | 3                | 250           | 3.3     | 380                     | 209  | 3.162            | 444    | 130             | 3.642             | 140    | 161             | 4.139             | 95     | 174             |
| MP03Z#3R1-B--   | 3.1              | 245           | 3.2     | 372                     | 205  | 3.276            | 435    | 129             | 3.795             | 137    | 160             | 4.337             | 92     | 172             |
| MP03Z#3R2-B--   | 3.2              | 245           | 3.2     | 365                     | 201  | 3.391            | 425    | 127             | 3.947             | 134    | 159             | 4.536             | 89     | 171             |
| MP03Z#3R3-B--   | 3.3              | 250           | 3.1     | 357                     | 196  | 3.506            | 416    | 126             | 4.100             | 131    | 157             | 4.734             | 86     | 169             |
| MP03Z#3R4-B--   | 3.4              | 235           | 3.1     | 349                     | 192  | 3.620            | 407    | 125             | 4.253             | 128    | 156             | 4.933             | 84     | 168             |
| MP03Z#3R5-B--   | 3.5              | 235           | 3.1     | 342                     | 188  | 3.735            | 397    | 123             | 4.406             | 125    | 155             | 5.131             | 81     | 166             |
| MP03Z#3R6-B--   | 3.6              | 230           | 3.0     | 334                     | 184  | 3.849            | 388    | 122             | 4.559             | 121    | 154             | 5.330             | 78     | 165             |
| MP03Z#3R7-B--   | 3.7              | 225           | 3.0     | 326                     | 179  | 3.964            | 379    | 121             | 4.712             | 118    | 152             | 5.528             | 75     | 164             |
| MP03Z#3R8-B--   | 3.8              | 225           | 3.0     | 318                     | 175  | 4.078            | 369    | 119             | 4.865             | 115    | 151             | 5.727             | 73     | 162             |
| MP03Z#3R9-B--   | 3.9              | 220           | 2.9     | 311                     | 171  | 4.193            | 360    | 118             | 5.019             | 112    | 150             | 5.925             | 70     | 161             |
| MP03Z#4R0-B--   | 4                | 215           | 2.9     | 307                     | 169  | 4.301            | 355    | 117             | 5.188             | 110    | 149             | 6.188             | 68     | 160             |
| MP03Z#4R1-B--   | 4.1              | 215           | 2.8     | 303                     | 167  | 4.410            | 351    | 116             | 5.358             | 108    | 148             | 6.450             | 67     | 159             |
| MP03Z#4R2-B--   | 4.2              | 210           | 2.8     | 299                     | 164  | 4.518            | 347    | 116             | 5.528             | 106    | 148             | 6.713             | 65     | 158             |
| MP03Z#4R3-B--   | 4.3              | 210           | 2.7     | 295                     | 162  | 4.627            | 342    | 115             | 5.698             | 104    | 147             | 6.975             | 64     | 157             |
| MP03Z#4R4-B--   | 4.4              | 205           | 2.7     | 291                     | 160  | 4.735            | 338    | 114             | 5.867             | 102    | 146             | 7.238             | 62     | 157             |

"#"-can be either "J" or "K" temperature coefficient



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at [www.kyocera-avx.com/disclaimer/](http://www.kyocera-avx.com/disclaimer/) by reference and should be reviewed in full before placing any order.

# Accu-P® MP Medical Grade



## 0603 Typical Electrical Tables

| Part Number                      | Capacitance (pF) | ESR Max. mOhm | SRF GHz | Q Standard Value @ 1GHz |      | Frequency 900MHz |        |                 | Frequency 1900MHz |        |                 | Frequency 2400MHz |        |                 |
|----------------------------------|------------------|---------------|---------|-------------------------|------|------------------|--------|-----------------|-------------------|--------|-----------------|-------------------|--------|-----------------|
|                                  |                  |               |         | Typ.                    | Min. | Ceff (pF)        | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) |
|                                  |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP03Z#4R5-B--                    | 4.5              | 205           | 2.7     | 287                     | 158  | 4.843            | 333    | 113             | 6.037             | 100    | 146             | 7.500             | 61     | 156             |
| MP03Z#4R6-B--                    | 4.6              | 200           | 2.6     | 283                     | 156  | 4.952            | 329    | 112             | 6.207             | 98     | 145             | 7.763             | 59     | 155             |
| MP03Z#4R7-B--                    | 4.7              | 200           | 2.6     | 279                     | 154  | 5.060            | 324    | 112             | 6.377             | 96     | 144             | 8.025             | 58     | 154             |
| MP03Z#5R1-B--                    | 5.1              | 195           | 2.5     | 263                     | 145  | 5.494            | 307    | 109             | 7.057             | 88     | 142             | 9.075             | 52     | 151             |
| MP03Z#5R6-B--                    | 5.6              | 190           | 2.4     | 244                     | 134  | 6.035            | 285    | 105             | 7.906             | 78     | 138             | 10.39             | 44     | 147             |
| MP03Z#6R2-B--                    | 6.2              | 185           | 2.3     | 228                     | 126  | 6.865            | 267    | 102             | 9.517             | 72     | 133             | 13.66             | 40     | 141             |
| MP03Z#6R8-B--                    | 6.8              | 180           | 2.2     | 213                     | 117  | 7.694            | 250    | 100             | 11.13             | 66     | 128             | 16.93             | 35     | 135             |
| MP03Z#7R5-B--                    | 7.5              | 175           | 2.1     | 195                     | 107  | 8.367            | 227    | 98              | 12.63             | 57     | 125             | 20.91             | 28     | 132             |
| MP03Z#8R2-B--                    | 8.2              | 170           | 2.0     | 176                     | 97   | 9.041            | 205    | 96              | 14.14             | 49     | 123             | 24.88             | 21     | 129             |
| MP03Z#9R1-B--                    | 9.1              | 165           | 1.9     | 161                     | 89   | 10.20            | 188    | 96              | 18.09             | 42     | 122             | 40.00             | 16     | 128             |
| MP03Z#100-B--                    | 10               | 160           | 1.8     | 146                     | 80   | 11.37            | 171    | 95              | 22.05             | 36     | 121             | 70.00             | 12     | 127             |
| MP03Z#110-B--                    | 11               | 155           | 1.7     | 129                     | 71   | 12.66            | 153    | 95              | 26.44             | 29     | 120             | 140.0             | 6      | 126             |
| MP03Z#120-B--                    | 12               | 155           | 1.6     | 112                     | 62   | 13.95            | 134    | 94              | 30.83             | 22     | 119             | 231.3             | 1      | 125             |
| MP03Z#130-B--                    | 13               | 150           | 1.6     | 102                     | 56   | 15.31            | 122    | 93              | 40.37             | 18     | 118             | N/A               | N/A    | N/A             |
| MP03Z#140-B--                    | 14               | 150           | 1.5     | 92                      | 51   | 16.67            | 111    | 92              | 49.91             | 15     | 118             | N/A               | N/A    | N/A             |
| MP03Z#150-B--                    | 15               | 145           | 1.5     | 82                      | 45   | 18.03            | 99     | 90              | 59.44             | 11     | 117             | N/A               | N/A    | N/A             |
| MP03Z#160-B--                    | 16               | 145           | 1.4     | 79                      | 43   | 19.61            | 96     | 90              | 80.00             | 8      | 117             | N/A               | N/A    | N/A             |
| MP03Z#170-B--                    | 17               | 140           | 1.4     | 76                      | 42   | 21.18            | 92     | 90              | 120.0             | 6      | 116             | N/A               | N/A    | N/A             |
| MP03Z#180-B--                    | 18               | 140           | 1.3     | 73                      | 40   | 22.76            | 89     | 90              | 190.0             | 4      | 116             | N/A               | N/A    | N/A             |
| MP03Z#190-B--                    | 19               | 140           | 1.3     | 69                      | 38   | 24.37            | 84     | 89              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP03Z#200-B--                    | 20               | 135           | 1.2     | 65                      | 36   | 25.98            | 80     | 89              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP03Z#220-B--                    | 22               | 135           | 1.2     | 57                      | 31   | 29.21            | 72     | 87              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP03Z#240-B--                    | 24               | 135           | 1.2     | 48                      | 26   | 34.44            | 62     | 87              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP03ZK270-B--                    | 27               | 130           | 1.1     | 43                      | 24   | 41.87            | 56     | 86              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP03ZK300-B--                    | 30               | 130           | 1.0     | 37                      | 21   | 49.29            | 49     | 85              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP03ZK330-B--                    | 33               | 130           | 1.0     | 32                      | 18   | 56.72            | 43     | 84              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP03ZK390-B--                    | 39               | 120           | 1.0     | 21                      | 12   | 71.57            | 30     | 82              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP03ZK470-B--                    | 47               | 120           | 1.0     | 15                      | 10   | 92.31            | 10     | 79              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| <b>Ur = 16V (Voltage code Y)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP03Y#R05-B--                    | 0.05             | N/A           | 25.6    | 1200                    | 660  | 0.06             | 1333   | 945             | 0.06              | 556    | 832             | 0.06              | 397    | 880             |
| MP03Y#R1-B--                     | 0.1              | 6000          | 18.1    | 1156                    | 636  | 0.11             | 1284   | 675             | 0.11              | 535    | 628             | 0.11              | 382    | 667             |
| MP03Y#R15-B--                    | 0.15             | 4800          | 14.8    | 1111                    | 611  | 0.16             | 1235   | 555             | 0.16              | 514    | 533             | 0.16              | 367    | 567             |
| MP03Y#R2-B--                     | 0.2              | 3600          | 12.8    | 1067                    | 587  | 0.21             | 1185   | 483             | 0.21              | 494    | 474             | 0.22              | 353    | 505             |
| MP03Y#R25-B--                    | 0.25             | 2700          | 11.4    | 1022                    | 562  | 0.26             | 1136   | 433             | 0.27              | 473    | 433             | 0.27              | 338    | 462             |
| MP03Y#R3-B--                     | 0.3              | 1800          | 10.4    | 978                     | 538  | 0.31             | 1086   | 397             | 0.32              | 453    | 402             | 0.32              | 323    | 430             |
| MP03Y#R35-B--                    | 0.35             | 1650          | 9.7     | 933                     | 513  | 0.36             | 1037   | 368             | 0.37              | 432    | 378             | 0.37              | 309    | 404             |
| MP03Y#R4-B--                     | 0.4              | 1500          | 9.0     | 889                     | 489  | 0.41             | 988    | 345             | 0.42              | 412    | 358             | 0.42              | 294    | 383             |
| MP03Y#R45-B--                    | 0.45             | 1400          | 8.5     | 844                     | 464  | 0.46             | 938    | 326             | 0.47              | 391    | 341             | 0.48              | 279    | 365             |
| MP03Y#R5-B--                     | 0.5              | 1300          | 8.1     | 800                     | 440  | 0.51             | 889    | 310             | 0.52              | 370    | 327             | 0.53              | 265    | 350             |
| MP03Y#R55-B--                    | 0.55             | 1200          | 7.7     | 788                     | 434  | 0.57             | 875    | 296             | 0.57              | 363    | 315             | 0.58              | 261    | 337             |
| MP03Y#R6-B--                     | 0.6              | 1100          | 7.4     | 777                     | 427  | 0.62             | 860    | 283             | 0.62              | 356    | 304             | 0.63              | 258    | 326             |
| MP03Y#R65-B--                    | 0.65             | 1025          | 7.1     | 765                     | 421  | 0.67             | 846    | 273             | 0.67              | 348    | 294             | 0.68              | 255    | 315             |
| MP03Y#R7-B--                     | 0.7              | 950           | 6.8     | 754                     | 414  | 0.72             | 832    | 263             | 0.72              | 341    | 285             | 0.73              | 252    | 306             |
| MP03Y#R75-B--                    | 0.75             | 900           | 6.6     | 742                     | 408  | 0.77             | 817    | 254             | 0.78              | 334    | 277             | 0.79              | 248    | 298             |
| MP03Y#R8-B--                     | 0.8              | 800           | 6.4     | 730                     | 402  | 0.82             | 803    | 247             | 0.83              | 326    | 270             | 0.84              | 245    | 290             |
| MP03Y#R85-B--                    | 0.85             | 750           | 6.2     | 719                     | 395  | 0.87             | 789    | 239             | 0.88              | 319    | 264             | 0.89              | 242    | 283             |
| MP03Y#R9-B--                     | 0.9              | 700           | 6.0     | 707                     | 389  | 0.92             | 775    | 233             | 0.93              | 312    | 258             | 0.95              | 239    | 277             |
| MP03Y#R95-B--                    | 0.95             | 650           | 5.9     | 696                     | 383  | 0.97             | 760    | 227             | 0.98              | 304    | 252             | 1.00              | 235    | 271             |
| MP03Y#R10-B--                    | 1                | 600           | 5.7     | 684                     | 376  | 1.019            | 746    | 216             | 1.061             | 297    | 242             | 1.101             | 232    | 260             |
| Contact Factory                  | 1.05             | 575           | 5.6     | 667                     | 367  | 1.076            | 731    | 213             | 1.126             | 290    | 239             | 1.171             | 226    | 256             |
| MP03Y#R11-B--                    | 1.1              | 550           | 5.4     | 649                     | 357  | 1.134            | 717    | 210             | 1.190             | 282    | 236             | 1.241             | 220    | 253             |
| Contact Factory                  | 1.15             | 525           | 5.3     | 632                     | 347  | 1.192            | 702    | 206             | 1.254             | 275    | 233             | 1.311             | 214    | 250             |
| MP03Y#R12-B--                    | 1.2              | 500           | 5.2     | 614                     | 338  | 1.250            | 687    | 203             | 1.318             | 267    | 230             | 1.381             | 209    | 247             |
| Contact Factory                  | 1.25             | 475           | 5.1     | 605                     | 333  | 1.307            | 677    | 200             | 1.382             | 262    | 227             | 1.451             | 203    | 244             |
| <b>Ur = 16V (Voltage code Y)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP03Y#R13-B--                    | 1.3              | 450           | 5.0     | 596                     | 328  | 1.365            | 667    | 197             | 1.446             | 257    | 224             | 1.521             | 197    | 241             |
| Contact Factory                  | 1.35             | 435           | 4.9     | 587                     | 323  | 1.423            | 658    | 194             | 1.511             | 252    | 221             | 1.591             | 191    | 238             |
| MP03Y#R14-B--                    | 1.4              | 420           | 4.8     | 578                     | 318  | 1.481            | 648    | 190             | 1.575             | 247    | 218             | 1.661             | 185    | 235             |
| Contact Factory                  | 1.45             | 405           | 4.8     | 569                     | 313  | 1.538            | 638    | 187             | 1.639             | 242    | 215             | 1.731             | 179    | 232             |
| MP03Y#R15-B--                    | 1.5              | 390           | 4.7     | 560                     | 308  | 1.596            | 628    | 184             | 1.703             | 237    | 212             | 1.801             | 173    | 229             |
| Contact Factory                  | 1.55             | 380           | 4.6     | 551                     | 303  | 1.645            | 620    | 181             | 1.760             | 233    | 209             | 1.866             | 170    | 226             |
| MP03Y#R16-B--                    | 1.6              | 370           | 4.5     | 542                     | 298  | 1.694            | 611    | 178             | 1.817             | 228    | 206             | 1.930             | 166    | 222             |
| Contact Factory                  | 1.65             | 360           | 4.5     | 534                     | 293  | 1.743            | 603    | 175             | 1.874             | 224    | 203             | 1.995             | 163    | 219             |
| MP03Y#R17-B--                    | 1.7              | 350           | 4.4     | 525                     | 289  | 1.792            | 595    | 172             | 1.931             | 219    | 200             | 2.060             | 159    | 216             |
| Contact Factory                  | 1.75             | 340           | 4.3     | 516                     | 284  | 1.841            | 587    | 169             | 1.988             | 215    | 197             | 2.124             | 156    | 213             |

"#"-can be either "J" or "K" temperature coefficient

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at [www.kyocera-avx.com/disclaimer/](http://www.kyocera-avx.com/disclaimer/) by reference and should be reviewed in full before placing any order.

# Accu-P<sup>®</sup> MP Medical Grade



## 0603 Typical Electrical Tables

| Part Number                      | Capacitance (pF) | ESR Max. mOhm | SRF GHz | Q Standard Value @ 1GHz |      | Frequency 900MHz |        |                 | Frequency 1900MHz |        |                 | Frequency 2400MHz |        |                 |
|----------------------------------|------------------|---------------|---------|-------------------------|------|------------------|--------|-----------------|-------------------|--------|-----------------|-------------------|--------|-----------------|
|                                  |                  |               |         | Typ.                    | Min. | Ceff (pF)        | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) |
|                                  |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP03Y#1R8-B--                    | 1.8              | 330           | 4.2     | 507                     | 279  | 1.890            | 578    | 166             | 2.045             | 211    | 194             | 2.189             | 153    | 209             |
| Contact Factory                  | 1.85             | 320           | 4.2     | 498                     | 274  | 1.939            | 570    | 163             | 2.102             | 206    | 191             | 2.253             | 149    | 206             |
| MP03Y#1R9-B--                    | 1.9              | 310           | 4.1     | 490                     | 269  | 1.988            | 562    | 160             | 2.158             | 202    | 188             | 2.318             | 146    | 203             |
| Contact Factory                  | 1.95             | 300           | 4.1     | 481                     | 264  | 2.037            | 553    | 157             | 2.215             | 197    | 185             | 2.383             | 142    | 199             |
| MP03Y#2R0-B--                    | 2                | 290           | 4.0     | 472                     | 260  | 2.086            | 545    | 154             | 2.272             | 193    | 182             | 2.447             | 139    | 196             |
| MP03Y#2R1-B--                    | 2.1              | 285           | 3.9     | 462                     | 254  | 2.190            | 535    | 151             | 2.402             | 187    | 180             | 2.604             | 134    | 193             |
| MP03Y#2R2-B--                    | 2.2              | 280           | 3.8     | 452                     | 249  | 2.295            | 524    | 148             | 2.532             | 181    | 177             | 2.761             | 129    | 191             |
| MP03Y#2R3-B--                    | 2.3              | 275           | 3.8     | 442                     | 243  | 2.400            | 514    | 145             | 2.662             | 175    | 175             | 2.917             | 124    | 188             |
| MP03Y#2R4-B--                    | 2.4              | 270           | 3.7     | 433                     | 238  | 2.504            | 503    | 143             | 2.793             | 168    | 172             | 3.074             | 118    | 186             |
| MP03Y#2R5-B--                    | 2.5              | 265           | 3.6     | 423                     | 232  | 2.609            | 493    | 140             | 2.923             | 162    | 170             | 3.230             | 113    | 183             |
| MP03Y#2R6-B--                    | 2.6              | 265           | 3.6     | 413                     | 227  | 2.714            | 482    | 137             | 3.053             | 156    | 167             | 3.387             | 108    | 181             |
| MP03Y#2R7-B--                    | 2.7              | 260           | 3.5     | 403                     | 222  | 2.818            | 472    | 134             | 3.183             | 150    | 165             | 3.543             | 103    | 178             |
| MP03Y#2R8-B--                    | 2.8              | 255           | 3.4     | 395                     | 217  | 3.933            | 463    | 133             | 3.336             | 147    | 164             | 3.742             | 100    | 177             |
| MP03Y#2R9-B--                    | 2.9              | 255           | 3.4     | 388                     | 213  | 3.047            | 453    | 131             | 3.489             | 144    | 162             | 3.940             | 97     | 175             |
| MP03Y#3R0-B--                    | 3                | 250           | 3.3     | 380                     | 209  | 3.162            | 444    | 130             | 3.642             | 140    | 161             | 4.139             | 95     | 174             |
| MP03Y#3R1-B--                    | 3.1              | 245           | 3.2     | 372                     | 205  | 3.276            | 435    | 129             | 3.795             | 137    | 160             | 4.337             | 92     | 172             |
| MP03Y#3R2-B--                    | 3.2              | 245           | 3.2     | 365                     | 201  | 3.391            | 425    | 127             | 3.947             | 134    | 159             | 4.536             | 89     | 171             |
| MP03Y#3R3-B--                    | 3.3              | 250           | 3.1     | 357                     | 196  | 3.506            | 416    | 126             | 4.100             | 131    | 157             | 4.734             | 86     | 169             |
| MP03Y#3R4-B--                    | 3.4              | 235           | 3.1     | 349                     | 192  | 3.620            | 407    | 125             | 4.253             | 128    | 156             | 4.933             | 84     | 168             |
| MP03Y#3R5-B--                    | 3.5              | 235           | 3.1     | 342                     | 188  | 3.735            | 397    | 123             | 4.406             | 125    | 155             | 5.131             | 81     | 166             |
| MP03Y#3R6-B--                    | 3.6              | 230           | 3.0     | 334                     | 184  | 3.849            | 388    | 122             | 4.559             | 121    | 154             | 5.330             | 78     | 165             |
| MP03Y#3R7-B--                    | 3.7              | 225           | 3.0     | 326                     | 179  | 3.964            | 379    | 121             | 4.712             | 118    | 152             | 5.528             | 75     | 164             |
| MP03Y#3R8-B--                    | 3.8              | 225           | 3.0     | 318                     | 175  | 4.078            | 369    | 119             | 4.865             | 115    | 151             | 5.727             | 73     | 162             |
| MP03Y#3R9-B--                    | 3.9              | 220           | 2.9     | 311                     | 171  | 4.193            | 360    | 118             | 5.019             | 112    | 150             | 5.925             | 70     | 161             |
| MP03Y#4R0-B--                    | 4                | 215           | 2.9     | 307                     | 169  | 4.301            | 355    | 117             | 5.188             | 110    | 149             | 6.188             | 68     | 160             |
| MP03Y#4R1-B--                    | 4.1              | 215           | 2.8     | 303                     | 167  | 4.410            | 351    | 116             | 5.358             | 108    | 148             | 6.450             | 67     | 159             |
| MP03Y#4R2-B--                    | 4.2              | 210           | 2.8     | 299                     | 164  | 4.518            | 347    | 116             | 5.528             | 106    | 148             | 6.713             | 65     | 158             |
| MP03Y#4R3-B--                    | 4.3              | 210           | 2.7     | 295                     | 162  | 4.627            | 342    | 115             | 5.698             | 104    | 147             | 6.975             | 64     | 157             |
| MP03Y#4R4-B--                    | 4.4              | 205           | 2.7     | 291                     | 160  | 4.735            | 338    | 114             | 5.867             | 102    | 146             | 7.238             | 62     | 157             |
| MP03Y#4R5-B--                    | 4.5              | 205           | 2.7     | 287                     | 158  | 4.843            | 333    | 113             | 6.037             | 100    | 146             | 7.500             | 61     | 156             |
| MP03Y#4R6-B--                    | 4.6              | 200           | 2.6     | 283                     | 156  | 4.952            | 329    | 112             | 6.207             | 98     | 145             | 7.763             | 59     | 155             |
| MP03Y#4R7-B--                    | 4.7              | 200           | 2.6     | 279                     | 154  | 5.060            | 324    | 112             | 6.377             | 96     | 144             | 8.025             | 58     | 154             |
| MP03Y#5R1-B--                    | 5.1              | 195           | 2.5     | 263                     | 145  | 5.494            | 307    | 109             | 7.057             | 88     | 142             | 9.075             | 52     | 151             |
| MP03Y#5R6-B--                    | 5.6              | 190           | 2.4     | 244                     | 134  | 6.035            | 285    | 105             | 7.906             | 78     | 138             | 10.390            | 44     | 147             |
| MP03Y#6R2-B--                    | 6.2              | 185           | 2.3     | 228                     | 126  | 6.865            | 267    | 102             | 9.517             | 72     | 133             | 13.660            | 40     | 141             |
| MP03Y#6R8-B--                    | 6.8              | 180           | 2.2     | 213                     | 117  | 7.694            | 250    | 100             | 11.130            | 66     | 128             | 16.930            | 35     | 135             |
| MP03Y#7R5-B--                    | 7.5              | 175           | 2.1     | 195                     | 107  | 8.367            | 227    | 98              | 12.630            | 57     | 125             | 20.910            | 28     | 132             |
| MP03Y#8R2-B--                    | 8.2              | 170           | 2.0     | 176                     | 97   | 9.041            | 205    | 96              | 14.140            | 49     | 123             | 24.880            | 21     | 129             |
| MP03Y#9R1-B--                    | 9.1              | 165           | 1.9     | 161                     | 89   | 10.20            | 188    | 96              | 18.09             | 42     | 122             | 40.00             | 16     | 128             |
| MP03Y#100-B--                    | 10               | 160           | 1.8     | 146                     | 80   | 11.37            | 171    | 95              | 22.05             | 36     | 121             | 70.00             | 12     | 127             |
| MP03Y#110-B--                    | 11               | 155           | 1.7     | 129                     | 71   | 12.66            | 153    | 95              | 26.44             | 29     | 120             | 140.0             | 6      | 126             |
| MP03Y#120-B--                    | 12               | 155           | 1.6     | 112                     | 62   | 13.95            | 134    | 94              | 30.83             | 22     | 119             | 231.3             | 1      | 125             |
| MP03Y#130-B--                    | 13               | 150           | 1.6     | 102                     | 56   | 15.31            | 122    | 93              | 40.37             | 18     | 118             | N/A               | N/A    | N/A             |
| MP03Y#140-B--                    | 14               | 150           | 1.5     | 92                      | 51   | 16.67            | 111    | 92              | 49.91             | 15     | 118             | N/A               | N/A    | N/A             |
| MP03Y#150-B--                    | 15               | 145           | 1.5     | 82                      | 45   | 18.03            | 99     | 90              | 59.44             | 11     | 117             | N/A               | N/A    | N/A             |
| MP03Y#160-B--                    | 16               | 145           | 1.4     | 79                      | 43   | 19.61            | 96     | 90              | 80.00             | 8      | 117             | N/A               | N/A    | N/A             |
| MP03Y#170-B--                    | 17               | 140           | 1.4     | 76                      | 42   | 21.18            | 92     | 90              | 120.0             | 6      | 116             | N/A               | N/A    | N/A             |
| MP03Y#180-B--                    | 18               | 140           | 1.3     | 73                      | 40   | 22.76            | 89     | 90              | 190.0             | 4      | 116             | N/A               | N/A    | N/A             |
| MP03Y#190-B--                    | 19               | 140           | 1.3     | 69                      | 38   | 24.37            | 84     | 89              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| <b>UR = 16V (Voltage code Y)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP03Y#200-B--                    | 20               | 135           | 1.2     | 65                      | 36   | 25.98            | 80     | 89              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP03Y#220-B--                    | 22               | 135           | 1.2     | 57                      | 31   | 29.21            | 72     | 87              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP03Y#240-B--                    | 24               | 135           | 1.2     | 48                      | 26   | 34.44            | 62     | 87              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP03YK270-B--                    | 27               | 130           | 1.1     | 43                      | 24   | 41.87            | 56     | 86              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP03YK300-B--                    | 30               | 130           | 1.0     | 37                      | 21   | 49.29            | 49     | 85              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP03YK330-B--                    | 33               | 130           | 1.0     | 32                      | 18   | 56.72            | 43     | 84              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP03YK390-B--                    | 39               | 120           | 1.0     | 21                      | 12   | 71.57            | 30     | 82              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| <b>UR = 25V (Voltage code 3)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP033#R05-B--                    | 0.05             | N/A           | 25.6    | 1200                    | 660  | 0.06             | 1333   | 945             | 0.06              | 556    | 832             | 0.06              | 397    | 880             |
| MP033#OR1-B--                    | 0.1              | 6000          | 18.1    | 1156                    | 636  | 0.11             | 1284   | 675             | 0.11              | 535    | 628             | 0.11              | 382    | 667             |
| MP033#R15-B--                    | 0.15             | 4800          | 14.8    | 1111                    | 611  | 0.16             | 1235   | 555             | 0.16              | 514    | 533             | 0.16              | 367    | 567             |
| MP033#OR2-B--                    | 0.2              | 3600          | 12.8    | 1067                    | 587  | 0.21             | 1185   | 483             | 0.21              | 494    | 474             | 0.22              | 353    | 505             |
| MP033#R25-B--                    | 0.25             | 2700          | 11.4    | 1022                    | 562  | 0.26             | 1136   | 433             | 0.27              | 473    | 433             | 0.27              | 338    | 462             |
| MP033#OR3-B--                    | 0.3              | 1800          | 10.4    | 978                     | 538  | 0.31             | 1086   | 397             | 0.32              | 453    | 402             | 0.32              | 323    | 430             |
| MP033#R35-B--                    | 0.35             | 1650          | 9.7     | 933                     | 513  | 0.36             | 1037   | 368             | 0.37              | 432    | 378             | 0.37              | 309    | 404             |

"#"-can be either "J" or "K" temperature coefficient



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at [www.kyocera-avx.com/disclaimer/](http://www.kyocera-avx.com/disclaimer/) by reference and should be reviewed in full before placing any order.

# Accu-P<sup>®</sup> MP Medical Grade



## 0603 Typical Electrical Tables

| Part Number                                 | Capacitance (pF) | ESR Max. mOhm | SRF GHz | Q Standard Value @ 1GHz |      | Frequency 900MHz |        |                 | Frequency 1900MHz |        |                 | Frequency 2400MHz |        |                 |
|---|------------------|---------------|---------|-------------------------|------|------------------|--------|-----------------|-------------------|--------|-----------------|-------------------|--------|-----------------|
|   |                  |               |         | Typ.                    | Min. | Ceff (pF)        | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) |
|   |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP033#0R4-B--                               | 0.4              | 1500          | 9.0     | 889                     | 489  | 0.41             | 988    | 345             | 0.42              | 412    | 358             | 0.42              | 294    | 383             |
| MP033#R45-B--                               | 0.45             | 1400          | 8.5     | 844                     | 464  | 0.46             | 938    | 326             | 0.47              | 391    | 341             | 0.48              | 279    | 365             |
| MP033#0R5-B--                               | 0.5              | 1300          | 8.1     | 800                     | 440  | 0.51             | 889    | 310             | 0.52              | 370    | 327             | 0.53              | 265    | 350             |
| MP033#R55-B--                               | 0.55             | 1200          | 7.7     | 788                     | 434  | 0.57             | 875    | 296             | 0.57              | 363    | 315             | 0.58              | 261    | 337             |
| MP033#0R6-B--                               | 0.6              | 1100          | 7.4     | 777                     | 427  | 0.62             | 860    | 283             | 0.62              | 356    | 304             | 0.63              | 258    | 326             |
| MP033#R65-B--                               | 0.65             | 1025          | 7.1     | 765                     | 421  | 0.67             | 846    | 273             | 0.67              | 348    | 294             | 0.68              | 255    | 315             |
| MP033#0R7-B--                               | 0.7              | 950           | 6.8     | 754                     | 414  | 0.72             | 832    | 263             | 0.72              | 341    | 285             | 0.73              | 252    | 306             |
| MP033#R75-B--                               | 0.75             | 900           | 6.6     | 742                     | 408  | 0.77             | 817    | 254             | 0.78              | 334    | 277             | 0.79              | 248    | 298             |
| MP033#0R8-B--                               | 0.8              | 800           | 6.4     | 730                     | 402  | 0.82             | 803    | 247             | 0.83              | 326    | 270             | 0.84              | 245    | 290             |
| MP033#R85-B--                               | 0.85             | 750           | 6.2     | 719                     | 395  | 0.87             | 789    | 239             | 0.88              | 319    | 264             | 0.89              | 242    | 283             |
| MP033#0R9-B--                               | 0.9              | 700           | 6.0     | 707                     | 389  | 0.92             | 775    | 233             | 0.93              | 312    | 258             | 0.95              | 239    | 277             |
| MP033#R95-B--                               | 0.95             | 650           | 5.9     | 696                     | 383  | 0.97             | 760    | 227             | 0.98              | 304    | 252             | 1.00              | 235    | 271             |
| MP033#1R0-B--                               | 1                | 600           | 5.7     | 684                     | 376  | 1.019            | 746    | 216             | 1.061             | 297    | 242             | 1.101             | 232    | 260             |
| Contact Factory                             | 1.05             | 575           | 5.6     | 667                     | 367  | 1.076            | 731    | 213             | 1.126             | 290    | 239             | 1.171             | 226    | 256             |
| MP033#1R1-B--                               | 1.1              | 550           | 5.4     | 649                     | 357  | 1.134            | 717    | 210             | 1.190             | 282    | 236             | 1.241             | 220    | 253             |
| Contact Factory                             | 1.15             | 525           | 5.3     | 632                     | 347  | 1.192            | 702    | 206             | 1.254             | 275    | 233             | 1.311             | 214    | 250             |
| MP033#1R2-B--                               | 1.2              | 500           | 5.2     | 614                     | 338  | 1.250            | 687    | 203             | 1.318             | 267    | 230             | 1.381             | 209    | 247             |
| Contact Factory                             | 1.25             | 475           | 5.1     | 605                     | 333  | 1.307            | 677    | 200             | 1.382             | 262    | 227             | 1.451             | 203    | 244             |
| MP033#1R3-B--                               | 1.3              | 450           | 5.0     | 596                     | 328  | 1.365            | 667    | 197             | 1.446             | 257    | 224             | 1.521             | 197    | 241             |
| Contact Factory                             | 1.35             | 435           | 4.9     | 587                     | 323  | 1.423            | 658    | 194             | 1.511             | 252    | 221             | 1.591             | 191    | 238             |
| MP033#1R4-B--                               | 1.4              | 420           | 4.8     | 578                     | 318  | 1.481            | 648    | 190             | 1.575             | 247    | 218             | 1.661             | 185    | 235             |
| Contact Factory                             | 1.45             | 405           | 4.8     | 569                     | 313  | 1.538            | 638    | 187             | 1.639             | 242    | 215             | 1.731             | 179    | 232             |
| MP033#1R5-B--                               | 1.5              | 390           | 4.7     | 560                     | 308  | 1.596            | 628    | 184             | 1.703             | 237    | 212             | 1.801             | 173    | 229             |
| Contact Factory                             | 1.55             | 380           | 4.6     | 551                     | 303  | 1.645            | 620    | 181             | 1.760             | 233    | 209             | 1.866             | 170    | 226             |
| MP033#1R6-B--                               | 1.6              | 370           | 4.5     | 542                     | 298  | 1.694            | 611    | 178             | 1.817             | 228    | 206             | 1.930             | 166    | 222             |
| Contact Factory                             | 1.65             | 360           | 4.5     | 534                     | 293  | 1.743            | 603    | 175             | 1.874             | 224    | 203             | 1.995             | 163    | 219             |
| MP033#1R7-B--                               | 1.7              | 350           | 4.4     | 525                     | 289  | 1.792            | 595    | 172             | 1.931             | 219    | 200             | 2.060             | 159    | 216             |
| Contact Factory                             | 1.75             | 340           | 4.3     | 516                     | 284  | 1.841            | 587    | 169             | 1.988             | 215    | 197             | 2.124             | 156    | 213             |
| MP033#1R8-B--                               | 1.8              | 330           | 4.2     | 507                     | 279  | 1.890            | 578    | 166             | 2.045             | 211    | 194             | 2.189             | 153    | 209             |
| Contact Factory                             | 1.85             | 320           | 4.2     | 498                     | 274  | 1.939            | 570    | 163             | 2.102             | 206    | 191             | 2.253             | 149    | 206             |
| MP033#1R9-B--                               | 1.9              | 310           | 4.1     | 490                     | 269  | 1.988            | 562    | 160             | 2.158             | 202    | 188             | 2.318             | 146    | 203             |
| Contact Factory                             | 1.95             | 300           | 4.1     | 481                     | 264  | 2.037            | 553    | 157             | 2.215             | 197    | 185             | 2.383             | 142    | 199             |
| MP033#2R0-B--                               | 2                | 290           | 4.0     | 472                     | 260  | 2.086            | 545    | 154             | 2.272             | 193    | 182             | 2.447             | 139    | 196             |
| MP033#2R1-B--                               | 2.1              | 285           | 3.9     | 462                     | 254  | 2.190            | 535    | 151             | 2.402             | 187    | 180             | 2.604             | 134    | 193             |
| MP033#2R2-B--                               | 2.2              | 280           | 3.8     | 452                     | 249  | 2.295            | 524    | 148             | 2.532             | 181    | 177             | 2.761             | 129    | 191             |
| MP033#2R3-B--                               | 2.3              | 275           | 3.8     | 442                     | 243  | 2.400            | 514    | 145             | 2.662             | 175    | 175             | 2.917             | 124    | 188             |
| MP033#2R4-B--                               | 2.4              | 270           | 3.7     | 433                     | 238  | 2.504            | 503    | 143             | 2.793             | 168    | 172             | 3.074             | 118    | 186             |
| MP033#2R5-B--                               | 2.5              | 265           | 3.6     | 423                     | 232  | 2.609            | 493    | 140             | 2.923             | 162    | 170             | 3.230             | 113    | 183             |
| MP033#2R6-B--                               | 2.6              | 265           | 3.6     | 413                     | 227  | 2.714            | 482    | 137             | 3.053             | 156    | 167             | 3.387             | 108    | 181             |
| MP033#2R7-B--                               | 2.7              | 260           | 3.5     | 403                     | 222  | 2.818            | 472    | 134             | 3.183             | 150    | 165             | 3.543             | 103    | 178             |
| MP033#2R8-B--                               | 2.8              | 255           | 3.4     | 395                     | 217  | 3.933            | 463    | 133             | 3.336             | 147    | 164             | 3.742             | 100    | 177             |
| MP033#2R9-B--                               | 2.9              | 255           | 3.4     | 388                     | 213  | 3.047            | 453    | 131             | 3.489             | 144    | 162             | 3.940             | 97     | 175             |
| MP033#3R0-B--                               | 3                | 250           | 3.3     | 380                     | 209  | 3.162            | 444    | 130             | 3.642             | 140    | 161             | 4.139             | 95     | 174             |
| MP033#3R1-B--                               | 3.1              | 245           | 3.2     | 372                     | 205  | 3.276            | 435    | 129             | 3.795             | 137    | 160             | 4.337             | 92     | 172             |
| <b>U<sub>R</sub> = 25V (Voltage code 3)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP033#3R2-B--                               | 3.2              | 245           | 3.2     | 365                     | 201  | 3.391            | 425    | 127             | 3.947             | 134    | 159             | 4.536             | 89     | 171             |
| MP033#3R3-B--                               | 3.3              | 250           | 3.1     | 357                     | 196  | 3.506            | 416    | 126             | 4.100             | 131    | 157             | 4.734             | 86     | 169             |
| MP033#3R4-B--                               | 3.4              | 235           | 3.1     | 349                     | 192  | 3.620            | 407    | 125             | 4.253             | 128    | 156             | 4.933             | 84     | 168             |
| MP033#3R5-B--                               | 3.5              | 235           | 3.1     | 342                     | 188  | 3.735            | 397    | 123             | 4.406             | 125    | 155             | 5.131             | 81     | 166             |
| MP033#3R6-B--                               | 3.6              | 230           | 3.0     | 334                     | 184  | 3.849            | 388    | 122             | 4.559             | 121    | 154             | 5.330             | 78     | 165             |
| MP033#3R7-B--                               | 3.7              | 225           | 3.0     | 326                     | 179  | 3.964            | 379    | 121             | 4.712             | 118    | 152             | 5.528             | 75     | 164             |
| MP033#3R8-B--                               | 3.8              | 225           | 3.0     | 318                     | 175  | 4.078            | 369    | 119             | 4.865             | 115    | 151             | 5.727             | 73     | 162             |
| MP033#3R9-B--                               | 3.9              | 220           | 2.9     | 311                     | 171  | 4.193            | 360    | 118             | 5.019             | 112    | 150             | 5.925             | 70     | 161             |
| MP033#4R0-B--                               | 4                | 215           | 2.9     | 307                     | 169  | 4.301            | 355    | 117             | 5.188             | 110    | 149             | 6.188             | 68     | 160             |
| MP033#4R1-B--                               | 4.1              | 215           | 2.8     | 303                     | 167  | 4.410            | 351    | 116             | 5.358             | 108    | 148             | 6.450             | 67     | 159             |
| MP033#4R2-B--                               | 4.2              | 210           | 2.8     | 299                     | 164  | 4.518            | 347    | 116             | 5.528             | 106    | 148             | 6.713             | 65     | 158             |
| MP033#4R3-B--                               | 4.3              | 210           | 2.7     | 295                     | 162  | 4.627            | 342    | 115             | 5.698             | 104    | 147             | 6.975             | 64     | 157             |
| MP033#4R4-B--                               | 4.4              | 205           | 2.7     | 291                     | 160  | 4.735            | 338    | 114             | 5.867             | 102    | 146             | 7.238             | 62     | 157             |
| MP033#4R5-B--                               | 4.5              | 205           | 2.7     | 287                     | 158  | 4.843            | 333    | 113             | 6.037             | 100    | 146             | 7.500             | 61     | 156             |
| MP033#4R6-B--                               | 4.6              | 200           | 2.6     | 283                     | 156  | 4.952            | 329    | 112             | 6.207             | 98     | 145             | 7.763             | 59     | 155             |
| MP033#4R7-B--                               | 4.7              | 200           | 2.6     | 279                     | 154  | 5.060            | 324    | 112             | 6.377             | 96     | 144             | 8.025             | 58     | 154             |
| MP033#5R1-B--                               | 5.1              | 195           | 2.5     | 263                     | 145  | 5.494            | 307    | 109             | 7.057             | 88     | 142             | 9.075             | 52     | 151             |
| MP033#5R6-B--                               | 5.6              | 190           | 2.4     | 244                     | 134  | 6.035            | 285    | 105             | 7.906             | 78     | 138             | 10.390            | 44     | 147             |
| MP033#6R2-B--                               | 6.2              | 185           | 2.3     | 228                     | 126  | 6.865            | 267    | 102             | 9.517             | 72     | 133             | 13.660            | 40     | 141             |
| MP033#6R8-B--                               | 6.8              | 180           | 2.2     | 213                     | 117  | 7.694            | 250    | 100             | 11.130            | 66     | 128             | 16.930            | 35     | 135             |

"#"-can be either "J" or "K" temperature coefficient



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at [www.kyocera-avx.com/disclaimer/](http://www.kyocera-avx.com/disclaimer/) by reference and should be reviewed in full before placing any order.

# Accu-P® MP Medical Grade

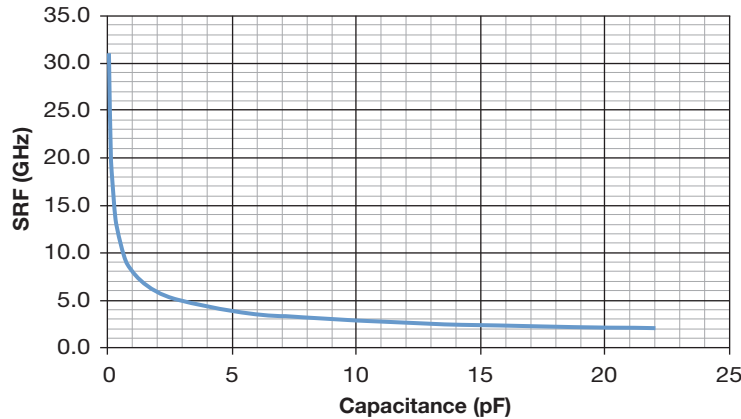


## 0603 Typical Electrical Tables

| Part Number                                 | Capacitance (pF) | ESR Max. mOhm | SRF GHz | Q Standard Value @ 1GHz |      | Frequency 900MHz |        |                 | Frequency 1900MHz |        |                 | Frequency 2400MHz |        |                 |
|---|------------------|---------------|---------|-------------------------|------|------------------|--------|-----------------|-------------------|--------|-----------------|-------------------|--------|-----------------|
|   |                  |               |         | Typ.                    | Min. | Ceff (pF)        | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) | Ceff (pF)         | Q Typ. | ESR Typ. (mOhm) |
|   |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP033#7R5-B--                               | 7.5              | 175           | 2.1     | 195                     | 107  | 8.367            | 227    | 98              | 12.630            | 57     | 125             | 20.910            | 28     | 132             |
| MP033#8R2-B--                               | 8.2              | 170           | 2.0     | 176                     | 97   | 9.041            | 205    | 96              | 14.140            | 49     | 123             | 24.880            | 21     | 129             |
| MP033#9R1-B--                               | 9.1              | 165           | 1.9     | 161                     | 89   | 10.20            | 188    | 96              | 18.09             | 42     | 122             | 40.00             | 16     | 128             |
| MP033#100-B--                               | 10               | 160           | 1.8     | 146                     | 80   | 11.37            | 171    | 95              | 22.05             | 36     | 121             | 70.00             | 12     | 127             |
| MP033#110-B--                               | 11               | 155           | 1.7     | 129                     | 71   | 12.66            | 153    | 95              | 26.44             | 29     | 120             | 140.0             | 6      | 126             |
| MP033#120-B--                               | 12               | 155           | 1.6     | 112                     | 62   | 13.95            | 134    | 94              | 30.83             | 22     | 119             | 231.3             | 1      | 125             |
| MP033#130-B--                               | 13               | 150           | 1.6     | 102                     | 56   | 15.31            | 122    | 93              | 40.37             | 18     | 118             | N/A               | N/A    | N/A             |
| MP033#140-B--                               | 14               | 150           | 1.5     | 92                      | 51   | 16.67            | 111    | 92              | 49.91             | 15     | 118             | N/A               | N/A    | N/A             |
| MP033#150-B--                               | 15               | 145           | 1.5     | 82                      | 45   | 18.03            | 99     | 90              | 59.44             | 11     | 117             | N/A               | N/A    | N/A             |
| MP033#160-B--                               | 16               | 145           | 1.4     | 79                      | 43   | 19.61            | 96     | 90              | 80.00             | 8      | 117             | N/A               | N/A    | N/A             |
| MP033#170-B--                               | 17               | 140           | 1.4     | 76                      | 42   | 21.18            | 92     | 90              | 120.0             | 6      | 116             | N/A               | N/A    | N/A             |
| MP033#180-B--                               | 18               | 140           | 1.3     | 73                      | 40   | 22.76            | 89     | 90              | 190.0             | 4      | 116             | N/A               | N/A    | N/A             |
| MP033#190-B--                               | 19               | 140           | 1.3     | 69                      | 38   | 24.37            | 84     | 89              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP033#200-B--                               | 20               | 135           | 1.2     | 65                      | 36   | 25.98            | 80     | 89              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP033#220-B--                               | 22               | 135           | 1.2     | 57                      | 31   | 29.21            | 72     | 87              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| MP033#240-B--                               | 24               | 135           | 1.2     | 48                      | 26   | 34.44            | 62     | 87              | N/A               | N/A    | N/A             | N/A               | N/A    | N/A             |
| <b>U<sub>R</sub> = 50V (Voltage code 5)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP035#R05-B--                               | 0.05             | N/A           | 25.6    | 1200                    | 660  | 0.06             | 1333   | 945             | 0.06              | 556    | 832             | 0.06              | 397    | 880             |
| MP035#R15-B--                               | 0.15             | 4800          | 14.8    | 1111                    | 611  | 0.16             | 1235   | 555             | 0.16              | 514    | 533             | 0.16              | 367    | 567             |
| MP035#R25-B--                               | 0.25             | 2700          | 11.4    | 1022                    | 562  | 0.26             | 1136   | 433             | 0.27              | 473    | 433             | 0.27              | 338    | 462             |
| MP035#R35-B--                               | 0.35             | 1650          | 9.7     | 933                     | 513  | 0.36             | 1037   | 368             | 0.37              | 432    | 378             | 0.37              | 309    | 404             |
| MP035#R45-B--                               | 0.45             | 1400          | 8.5     | 844                     | 464  | 0.46             | 938    | 326             | 0.47              | 391    | 341             | 0.48              | 279    | 365             |
| MP035#R55-B--                               | 0.55             | 1200          | 7.7     | 788                     | 434  | 0.57             | 875    | 296             | 0.57              | 363    | 315             | 0.58              | 261    | 337             |
| MP035#R65-B--                               | 0.65             | 1025          | 7.1     | 765                     | 421  | 0.67             | 846    | 273             | 0.67              | 348    | 294             | 0.68              | 255    | 315             |
| MP035#R75-B--                               | 0.75             | 900           | 6.6     | 742                     | 408  | 0.77             | 817    | 254             | 0.78              | 334    | 277             | 0.79              | 248    | 298             |
| MP035#R85-B--                               | 0.85             | 750           | 6.2     | 719                     | 395  | 0.87             | 789    | 239             | 0.88              | 319    | 264             | 0.89              | 242    | 283             |
| MP035#R95-B--                               | 0.95             | 650           | 5.9     | 696                     | 383  | 0.97             | 760    | 227             | 0.98              | 304    | 252             | 1.00              | 235    | 271             |
| MP035#R100-B--                              | 1                | 600           | 5.7     | 684                     | 376  | 1.019            | 746    | 216             | 1.061             | 297    | 242             | 1.101             | 232    | 260             |
| Contact Factory                             | 1.05             | 575           | 5.6     | 667                     | 367  | 1.076            | 731    | 213             | 1.126             | 290    | 239             | 1.171             | 226    | 256             |
| MP035#R110-B--                              | 1.1              | 550           | 5.4     | 649                     | 357  | 1.134            | 717    | 210             | 1.190             | 282    | 236             | 1.241             | 220    | 253             |
| <b>U<sub>R</sub> = 50V (Voltage code 5)</b> |                  |               |         |                         |      |                  |        |                 |                   |        |                 |                   |        |                 |
| MP031#R05-B--                               | 0.05             | N/A           | 25.6    | 1200                    | 660  | 0.06             | 1333   | 945             | 0.06              | 556    | 832             | 0.06              | 397    | 880             |
| MP031#R15-B--                               | 0.15             | 4800          | 14.8    | 1111                    | 611  | 0.16             | 1235   | 555             | 0.16              | 514    | 533             | 0.16              | 367    | 567             |
| MP031#R25-B--                               | 0.25             | 2700          | 11.4    | 1022                    | 562  | 0.26             | 1136   | 433             | 0.27              | 473    | 433             | 0.27              | 338    | 462             |
| MP031#R35-B--                               | 0.35             | 1650          | 9.7     | 933                     | 513  | 0.36             | 1037   | 368             | 0.37              | 432    | 378             | 0.37              | 309    | 404             |
| MP031#R45-B--                               | 0.45             | 1400          | 8.5     | 844                     | 464  | 0.46             | 938    | 326             | 0.47              | 391    | 341             | 0.48              | 279    | 365             |
| MP031#R55-B--                               | 0.55             | 1200          | 7.7     | 788                     | 434  | 0.57             | 875    | 296             | 0.57              | 363    | 315             | 0.58              | 261    | 337             |
| MP031#R65-B--                               | 0.65             | 1025          | 7.1     | 765                     | 421  | 0.67             | 846    | 273             | 0.67              | 348    | 294             | 0.68              | 255    | 315             |
| MP031#R75-B--                               | 0.75             | 900           | 6.6     | 742                     | 408  | 0.77             | 817    | 254             | 0.78              | 334    | 277             | 0.79              | 248    | 298             |
| MP031#R85-B--                               | 0.85             | 750           | 6.2     | 719                     | 395  | 0.87             | 789    | 239             | 0.88              | 319    | 264             | 0.89              | 242    | 283             |
| MP031#R95-B--                               | 0.95             | 650           | 5.9     | 696                     | 383  | 0.97             | 760    | 227             | 0.98              | 304    | 252             | 1.00              | 235    | 271             |
| MP031#R100-B--                              | 1                | 600           | 5.7     | 684                     | 376  | 1.019            | 746    | 216             | 1.061             | 297    | 242             | 1.101             | 232    | 260             |

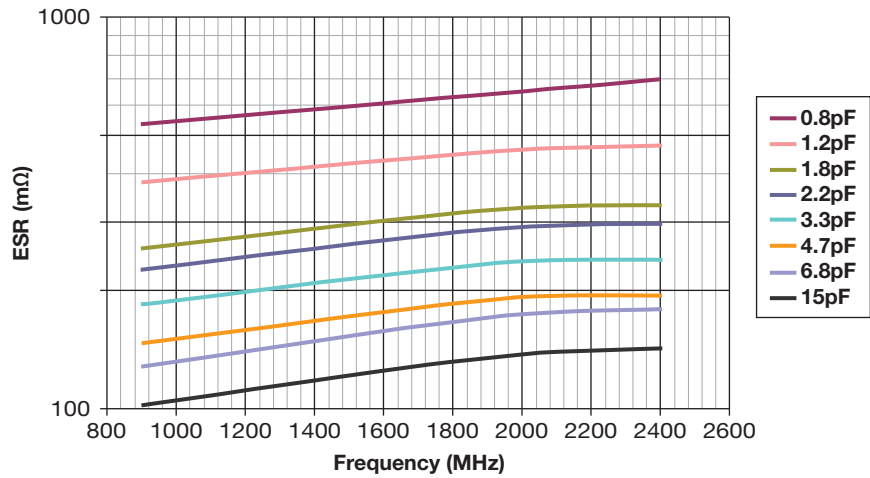
“#”=can be either “J” or “K” temperature coefficient

Accu-P<sup>®</sup> 0201 Typical SRF vs Capacitance



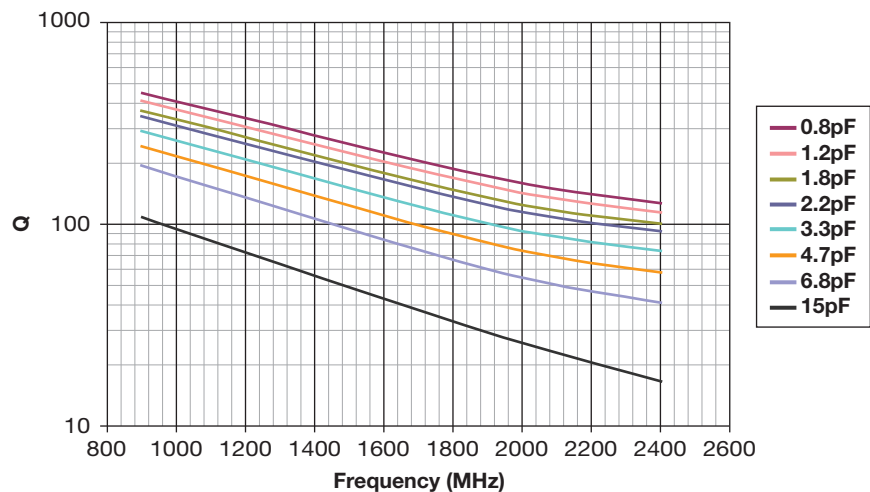
Measured on HP8720ES

Accu-P<sup>®</sup> 0201 Typical ESR vs Frequency



Measured on Agilent 4278A/4991A

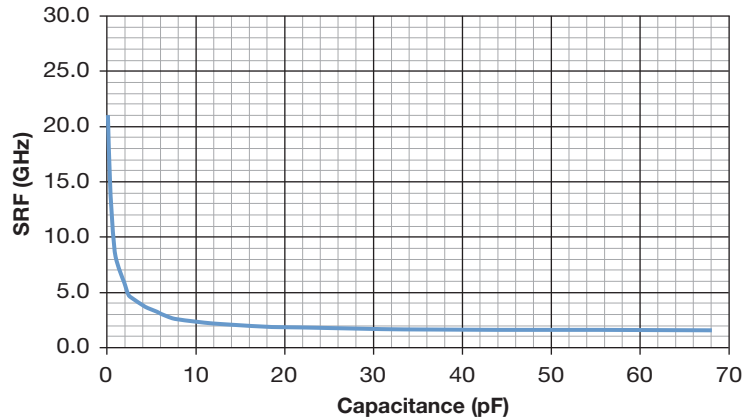
Accu-P<sup>®</sup> 0201 Typical Q vs Frequency



Measured on Agilent 4278A/4991A

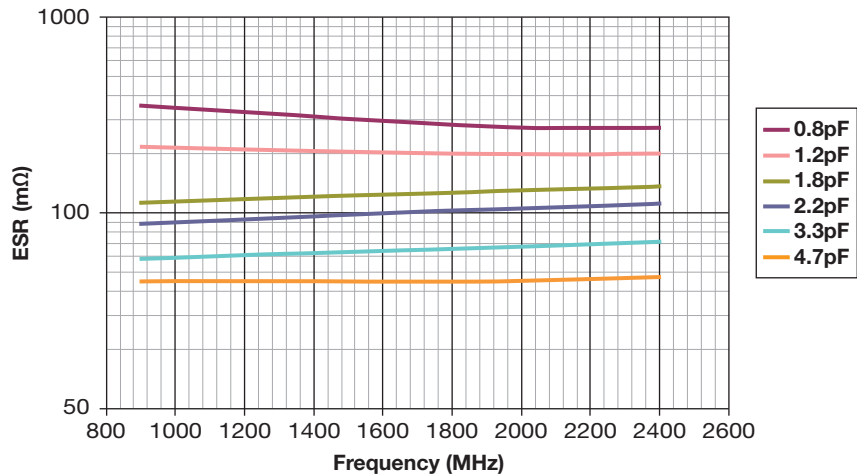
## High Frequency Characteristics

**Accu-P<sup>®</sup> 0402 Typical SRF vs Capacitance**



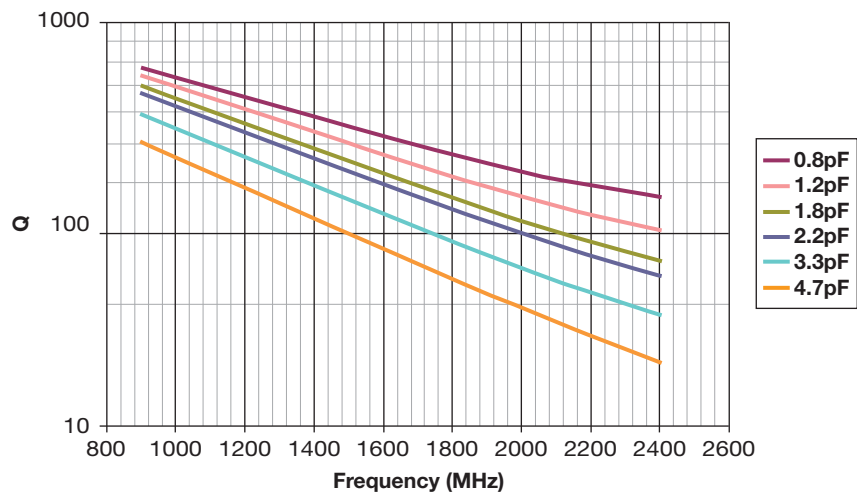
Measured on HP8720ES

**Accu-P<sup>®</sup> 0402 Typical ESR vs Frequency**



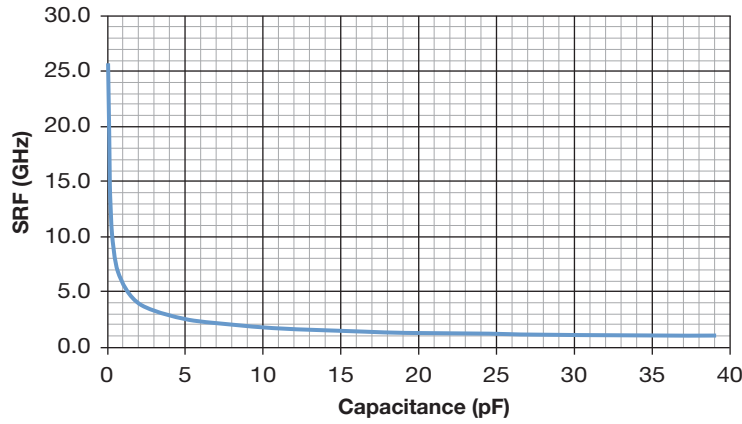
Measured on Agilent 4278A/4991A

**Accu-P<sup>®</sup> 0402 Typical Q vs Frequency**



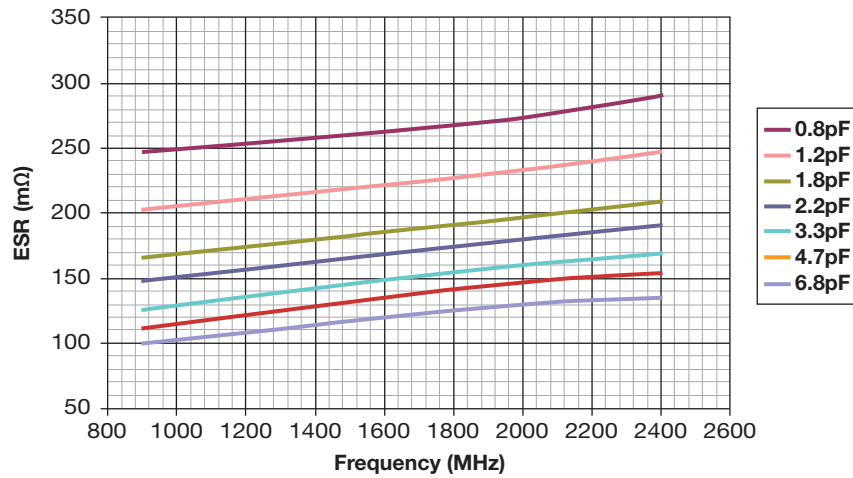
Measured on Agilent 4278A/4991A

Accu-P<sup>®</sup> 0603 Typical SRF vs Capacitance



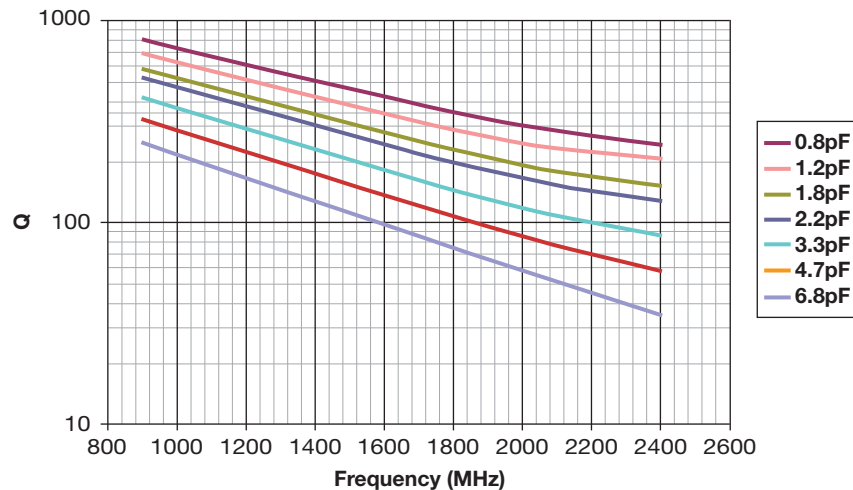
Measured on HP8720ES

Accu-P<sup>®</sup> 0603 Typical ESR vs Frequency



Measured on Agilent 4278A/4991A

Accu-P<sup>®</sup> 0603 Typical Q vs Frequency



Measured on Agilent 4278A/4991A

# Accu-P<sup>®</sup> MP Medical Grade

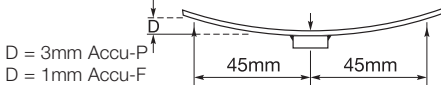
## Environmental / Mechanical Characteristics



### ENVIRONMENTAL CHARACTERISTICS

| TEST   | CONDITIONS                                       | REQUIREMENT  |
|--|--|--|
| <b>Life (Endurance)</b><br>MIL-STD-202F Method 108A                                  | 125°C, 2U <sub>R</sub> , 1000 hours              | No visible damage<br>$\Delta C/C \leq 2\%$ for C $\geq$ 5pF<br>$\Delta C \leq 0.25\text{pF}$ for C<5pF |
| <b>Accelerated Damp Heat Steady State</b><br>MIL-STD-202F Method 103B                | 85°C, 85% RH, U <sub>R</sub> , 1000 hours        | No visible damage<br>$\Delta C/C \leq 2\%$ for C $\geq$ 5pF<br>$\Delta C \leq 0.25\text{pF}$ for C<5pF |
| <b>Temperature Cycling</b><br>MIL-STD-202F Method 107E<br>MIL-STD-883D Method 1010.7 | -55°C to +125°C, 15 cycles – Accu-P <sup>®</sup> | No visible damage<br>$\Delta C/C \leq 2\%$ for C $\geq$ 5pF<br>$\Delta C \leq 0.25\text{pF}$ for C<5pF |
| <b>Resistance to Solder Heat</b><br>IEC-68-2-58                                      | 260°C $\pm$ 5°C for 10 secs                      | C remains within initial limits  |

### MECHANICAL CHARACTERISTICS

| TEST   | CONDITIONS   | REQUIREMENT  |
|--|--|--|
| <b>Solderability</b><br>IEC-68-2-58  | Components completely immersed in a solder bath at 235°C for 2 secs.   | Terminations to be well tinned, minimum 95% coverage   |
| <b>Leach Resistance</b><br>IEC-68-2-58   | Components completely immersed in a solder bath at 260 $\pm$ 5°C for 60 secs.  | Dissolution of termination faces $\leq$ 15% of area<br>Dissolution of termination edges $\leq$ 25% of length |
| <b>Adhesion</b><br>MIL-STD-202F Method 211A  | A force of 5N applied for 10 secs.   | No visible damage  |
| <b>Termination Bond Strength</b><br>IEC-68-2-21 Amend. 2                                     | Tested as shown in diagram<br><br>D = 3mm Accu-P<br>D = 1mm Accu-F | No visible damage<br>$\Delta C/C \leq 2\%$ for C $\geq$ 5pF<br>$\Delta C \leq 0.25\text{pF}$ for C<5pF       |
| <b>Robustness of Termination</b><br>IEC-68-2-21 Amend. 2                                     | A force of 5N applied for 10 secs.   | No visible damage  |
| <b>High Frequency Vibration</b><br>MIL-STD-202F Method 201A, 204D (Accu-P <sup>®</sup> only) | 55Hz to 2000Hz, 20G  | No visible damage  |
| <b>Storage</b>   | 12 months minimum with components stored in “as received” packaging  | Good solderability   |

### QUALITY & RELIABILITY

Accu-P<sup>®</sup> is based on well established thin-film technology and materials.

### ON-LINE PROCESS CONTROL

This program forms an integral part of the production cycle and acts as a feedback system to regulate and control production processes. The test procedures, which are integrated into the production process, were developed after long research work and are based on the highly developed semiconductor industry test procedures and equipment. These measures help KYOCERA AVX to produce a consistent and high yield line of products.

### FINAL QUALITY INSPECTION

Finished parts are tested for standard electrical parameters and visual/mechanical characteristics. Each production lot is 100% evaluated for: capacitance and proof voltage at 2.5 U<sub>R</sub>. In addition, production is periodically evaluated for:

Average capacitance with histogram printout for capacitance distribution;  
IR and Breakdown Voltage distribution;  
Temperature Coefficient;  
Solderability;  
Dimensional, mechanical and temperature stability.

### QUALITY ASSURANCE

The reliability of these thin-film chip capacitors has been studied intensively for several years. Various measures have been taken to obtain the high reliability required today by the industry. Quality assurance policy is based on well established international industry standards. The reliability of the capacitors is determined by accelerated testing under the following conditions:

|                                    |  |
|------------------------------------|--|
| Life (Endurance)                   | 125°C, 2U <sub>R</sub> , 1000 hours        |
| Accelerated Damp Heat Steady State | 85°C, 85% RH, U <sub>R</sub> , 1000 hours. |

### RF POWER APPLICATIONS

In RF power applications capacitor losses generate heat. Two factors of particular importance to designers are:

- Minimizing the generation of heat.
- Dissipating heat as efficiently as possible.

### CAPACITOR HEATING

- The major source of heat generation in a capacitor in RF power applications is a function of RF current (I) and ESR, from the relationship:

$$\text{Power dissipation} = I_{\text{RMS}}^2 \times \text{ESR}$$

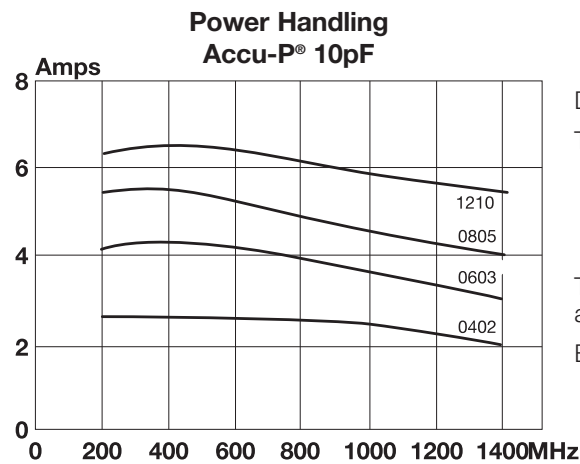
- Accu-P® capacitors are specially designed to minimize

ESR and therefore RF heating. Values of ESR for Accu-P® capacitors are significantly less than those of ceramic MLC components currently available.

### HEAT DISSIPATION

- Heat is dissipated from a capacitor through a variety of paths, but the key factor in the removal of heat is the thermal conductivity of the capacitor material.
- The higher the thermal conductivity of the capacitor, the more rapidly heat will be dissipated.
- The table below illustrates the importance of thermal conductivity to the performance of Accu-P® in power applications.

| PRODUCT                  | MATERIAL                      | THERMAL CONDUCTIVITY W/mK |
|--------------------------|-------------------------------|---------------------------|
| Accu-P®<br>Microwave MLC | Alumina<br>Magnesium Titanate | 18.9<br>6.0               |



Data used in calculating the graph:

Thermal impedance of capacitors:

|      |         |
|------|---------|
| 0402 | 17°C/W  |
| 0603 | 12°C/W  |
| 0805 | 6.5°C/W |
| 1210 | 5°C/W   |

Thermal impedance measured using RF generator, amplifier and strip-line transformer.

ESR of capacitors measured on Boonton 34A

### THERMAL IMPEDANCE

Thermal impedance of Accu-P® chips is shown below compared with the thermal impedance of Microwave MLC's.

| CAPACITOR TYPE | CHIP SIZE | THERMAL IMPEDANCE (°C/W) |
|----------------|-----------|--------------------------|
| Accu-P®        | 0805      | 6.5                      |
|                | 1210      | 5                        |
| Microwave MLC  | 0505      | 12                       |
|                | 1210      | 7.5                      |

The thermal impedance expresses the temperature difference in °C between chip center and termination caused by a power dissipation of 1 watt in the chip. It is expressed in °C/W.

### ADVANTAGES OF ACCU-P® IN RF POWER CIRCUITS

The optimized design of Accu-P® offers the designer of RF power circuits the following advantages:

- Reduced power losses due to the inherently low ESR of Accu-P®.
- Increased power dissipation due to the high thermal conductivity of Accu-P®.

• THE ONLY TRUE TEST OF A CAPACITOR IN ANY PARTICULAR APPLICATION IS ITS PERFORMANCE UNDER OPERATING CONDITIONS IN THE ACTUAL CIRCUIT.

### PRACTICAL APPLICATION IN RF POWER CIRCUITS

- There is a wide variety of different experimental methods for measuring the power handling performance of a capacitor in RF power circuits. Each method has its own problems and few of them exactly reproduce the conditions present in "real" circuit applications.
- Similarly, there is a very wide range of different circuit applications, all with their unique characteristics and operating conditions which cannot possibly be covered by such "theoretical" testing.

### GENERAL

Accu-P® SMD capacitors are designed for soldering to printed circuit boards or other substrates. The construction of the components is such that they will withstand the time/temperature profiles used in both wave and reflow soldering methods.

### CIRCUIT BOARD TYPE

The circuit board types which may be used with Accu-P® are as follows:

All flexible types of circuit boards (eg. FR-4, G-10) and also alumina.

For other circuit board materials, please consult factory.

### HANDLING

SMD capacitors should be handled with care to avoid damage or contamination from perspiration and skin oils. The use of plastic tipped tweezers or vacuum pick-ups is strongly recommended for individual components. Bulk handling should ensure that abrasion and mechanical shock are minimized. For automatic equipment, taped and reeled product gives the ideal medium for direct presentation to the placement machine.

### COMPONENT PAD DESIGN

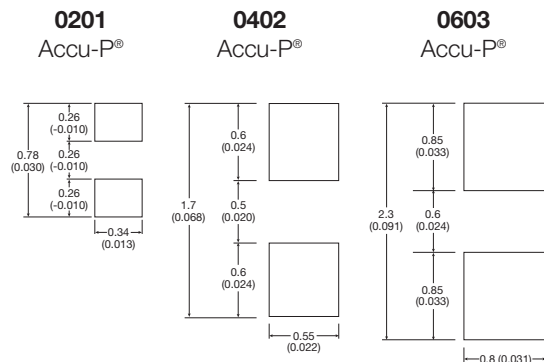
Component pads must be designed to achieve good joints and minimize component movement during reflow soldering. Pad designs are given below for both wave and reflow soldering.

The basis of these designs is:

- Pad width equal to component width. It is permissible to decrease this to as low as 85% of component width but it is not advisable to go below this.
- Pad overlap 0.5mm beneath large components. Pad overlap about 0.3mm beneath small components.
- Pad extension of 0.5mm for reflow of large components and pad extension about 0.3mm for reflow of small components. Pad extension about 1.0mm for wave soldering.

### REFLOW SOLDERING

#### PAD DIMENSIONS: millimeters (inches)



### PREHEAT & SOLDERING

The rate of preheat in production should not exceed 4°C/second and a recommended maximum is about 2°C/second. Temperature differential from preheat to soldering should not exceed 100°C.

For further specific application or process advice, please consult KYOCERA AVX.

### COOLING

After soldering, the assembly should preferably be allowed to cool naturally. In the event of assisted cooling, similar conditions to those recommended for preheating should be used.

### HAND SOLDERING & REWORK

Hand soldering is permissible. Preheat of the PCB to 150°C is required. The most preferable technique is to use hot air soldering tools. Where a soldering iron is used, a temperature controlled model not exceeding 30 watts should be used and set to not more than 260°C.

### CLEANING RECOMMENDATIONS

Care should be taken to ensure that the devices are thoroughly cleaned of flux residues, especially the space beneath the device. Such residues may otherwise become conductive and effectively offer a lossy bypass to the device. Various recommended cleaning conditions (which must be optimized for the flux system being used) are as follows:

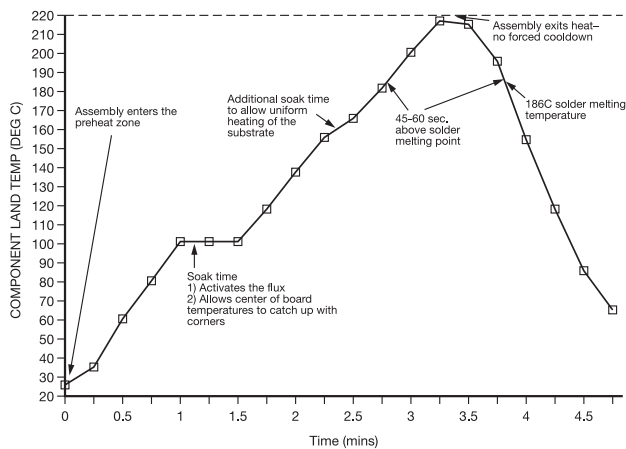
- Cleaning liquids. . . . . i-propanol, ethanol, acetylacetone, water and other standard PCB cleaning liquids.
- Ultrasonic conditions . . power-20w/liter max.  
frequency-20kHz to 45kHz.
- Temperature . . . . . 80°C maximum (if not otherwise limited by chosen solvent system).
- Time . . . . . 5 minutes max.

### STORAGE CONDITIONS

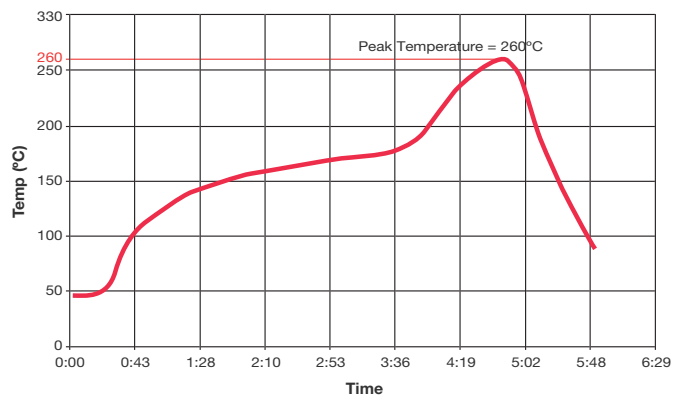
Recommended storage conditions for Accu-P® prior to use are as follows:

- Temperature . . . . . 15°C to 35°C
- Humidity . . . . . ≤65%
- Air Pressure . . . . . 860mbar to 1060mbar

### RECOMMENDED REFLOW SOLDERING PROFILE COMPONENTS WITH SnPb TERMINATIONS



### RECOMMENDED REFLOW SOLDERING PROFILE LEAD FREE COMPONENTS WITH Sn100 TERMINATIONS



# Accu-P<sup>®</sup> MP Medical Grade

## Automatic Insertion Packaging



### TAPE & REEL

All tape and reel specifications are in compliance with EIA 481-1-A.  
(equivalent to IEC 286 part 3).

- 8mm carrier
- Reeled quantities: Reels of 3,000 per 7" reel or 10,000 pieces per 13" reel  
01005, 0201 and 0402 = 5,000 pieces per 7" reel and 20,000 pieces per 13" reel

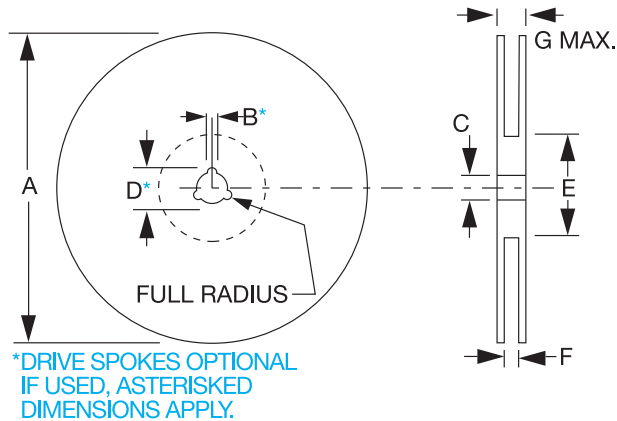
### REEL

#### DIMENSIONS: millimeters (inches)

| A <sup>(1)</sup>         | B                        | C                         | D                         | E                       | F                          | G                         |
|--------------------------|--------------------------|---------------------------|---------------------------|-------------------------|----------------------------|---------------------------|
| 180±1.0<br>(7.087±0.039) | 1.5 min.<br>(0.059 min.) | 13±0.2<br>(0.512 ± 0.008) | 20.2 min.<br>(0.795 min.) | 50 min.<br>(1.969 min.) | 9.6±1.5<br>(0.370 ± 0.050) | 14.4 max.<br>(0.567 max.) |

Metric dimensions will govern.  
Inch measurements rounded and for reference only.

(1) 330mm (13 inch) reels are available.

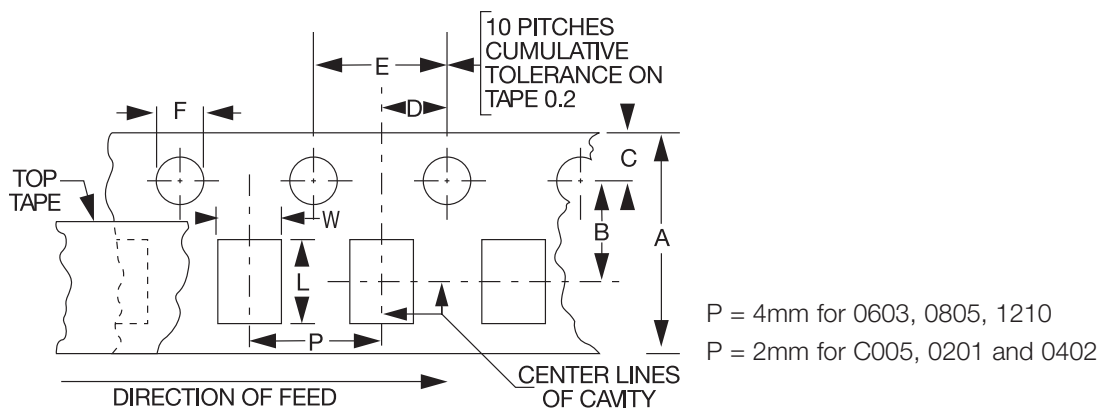


### CARRIER

#### DIMENSIONS: millimeters (inches)

| A                            | B                             | C                           | D                             | E                            | F   |
|------------------------------|-------------------------------|-----------------------------|-------------------------------|------------------------------|---|
| 8.0 ± 0.3<br>(0.315 ± 0.012) | 3.5 ± 0.05<br>(0.138 ± 0.002) | 1.75±0.1<br>(0.069 ± 0.004) | 2.0 ± 0.05<br>(0.079 ± 0.002) | 4.0 ± 0.1<br>(0.157 ± 0.004) | 1.5 <sup>+0.1</sup> <sub>-0.0</sub><br>(0.059 <sup>+0.004</sup> <sub>-0.000</sub> ) |

The nominal dimensions of the component compartment (W,L) are derived from the component size.



KYOCERA AVX reserves the right to change the information published herein without notice.