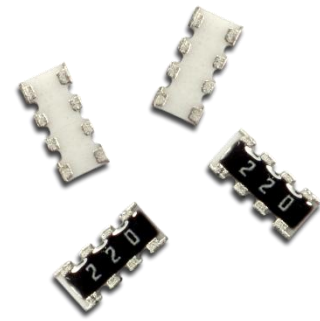


## BCN Series

### Features:

- Sulphur resistant version available (tested to ASTM-B809)
- AEC-Q200 (BCN10 and BCN164AB)
- Convex terminations
- Isolated and bussed versions



All parts are Pb-free and comply with EU Directive 2011/65/EU amended by (EU) 2015/863

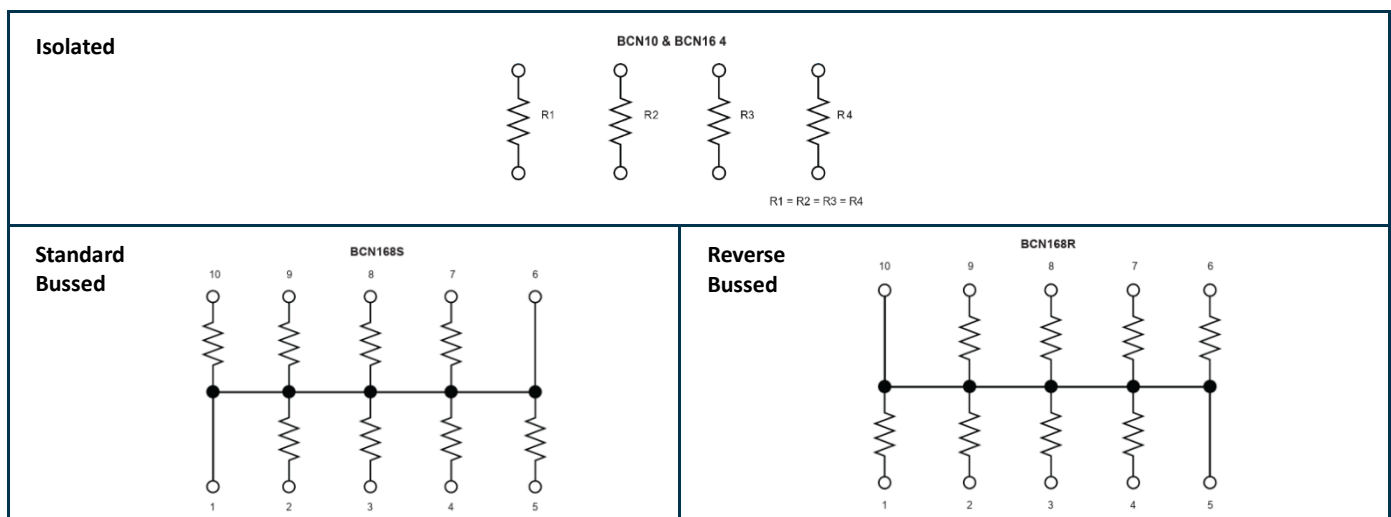
## Summary of Types

| Type   | Part Number Start | Width (mm)     | Resistor Elements | Circuit  | Package Size    | Scalloped Convex | Square Convex |
|--------|-------------------|----------------|-------------------|----------|-----------------|------------------|---------------|
| BCN10  | BCN104AB          | 1              | 0402 x 4          | Isolated | 0804            |                  |               |
| BCN164 | BCN164A           | 1.6            | 0603 x 4          |          |                 | 1206             |               |
|        | BCN164AB          |                |                   |          |                 |                  |               |
| BCN168 | BCN168SB          |                | 0603 x 8          |          | Standard Bussed |                  |               |
|        | BCN168RB          | Reverse Bussed |                   |          |                 |                  |               |

## Electrical Data

|                               |        | BCN10  | BCN164 | BCN168     |
|-------------------------------|--------|--|--------|------------|
| Resistor power rating at 70°C | mW     | 63   |        | 32         |
| Package power rating at 70°C  | mW     | 250  |        |            |
| Limiting element voltage      | V      | 25   | 50     | 25         |
| Maximum overload voltage      | V      | 50   | 100    | 63         |
| Resistance range              | Ω      | 10R – 1M0                                      |        | 100R – 1M0 |
| Resistance tolerance          | %      | 1, 5   |        | 5          |
| TCR                           | ppm/°C | ±200   |        |            |
| Standard values               |        | E24 (for 5% tolerance), E96 (for 1% tolerance) |        |            |
| Ambient temperature range     | °C     | -55 to +155                                    |        |            |

## Circuit Data



### General Note

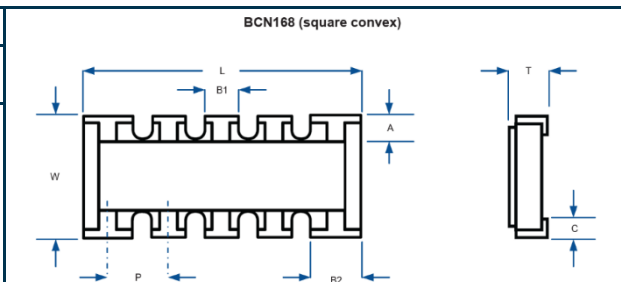
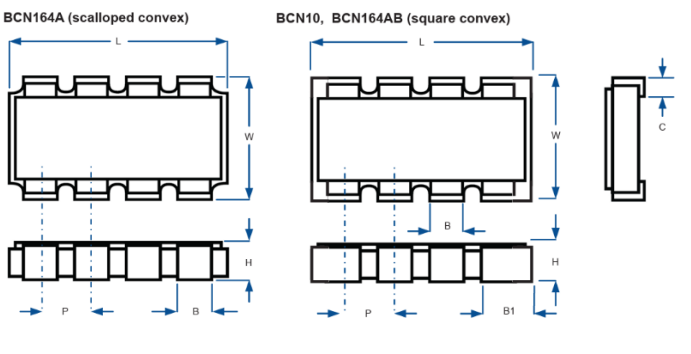
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### Physical Data

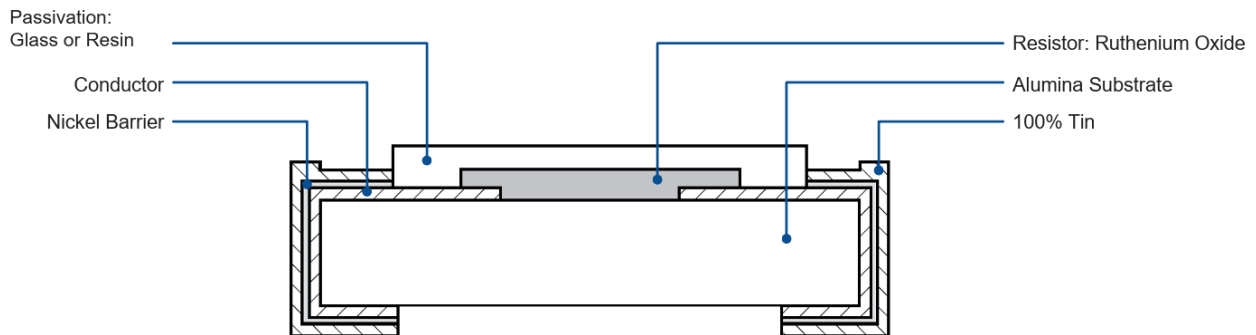
| Dimensions in mm and weight in mg |  |  |  |  |  |  |  |  | Type   | L         | W         | H         | P         | B        | B1       | C          | Wt. nom. |
|-----------------------------------|--|--|--|--|--|--|--|--|--------|-----------|-----------|-----------|-----------|----------|----------|------------|----------|
|                                   |  |  |  |  |  |  |  |  |        |           |           |           |           |          |          |            |          |
|                                   |  |  |  |  |  |  |  |  | BCN10  | 2 ±0.1    | 1 ±0.1    | 0.45 ±0.1 | 0.5 ±0.05 | 0.3 ±0.1 | 0.4 ±0.1 | 0.26 ±0.19 | 1.97     |
|                                   |  |  |  |  |  |  |  |  | BCN164 | 3.2 ±0.15 | 1.6 ±0.15 | 0.5 ±0.15 | 0.8 ±0.05 | 0.5 ±0.1 | -        | 0.28 ±0.18 | 6.66     |

| Dimensions in mm and weight in mg |  |  |  |  |  |  |  |  |  | Type   | L        | W        | T        | A         | B1         | B2        | C nom. | P nom. | Wt. nom. |
|-----------------------------------|--|--|--|--|--|--|--|--|--|--------|----------|----------|----------|-----------|------------|-----------|--------|--------|----------|
|                                   |  |  |  |  |  |  |  |  |  |        |          |          |          |           |            |           |        |        |          |
|                                   |  |  |  |  |  |  |  |  |  | BCN168 | 3.2 ±0.2 | 1.6 ±0.2 | 0.5 ±0.1 | 0.3 ±0.15 | 0.36 ±0.15 | 0.5 ±0.15 | 0.2    | 0.64   | 7.21     |



### Construction



### Marking

BCN parts may be unmarked or marked with ohmic values. If marked, 5% tolerance parts are marked with three characters (e.g. 102), whilst 1% tolerance parts may be marked with 3 or 4 characters (e.g. 102, 1001, 4991).

### Performance Data

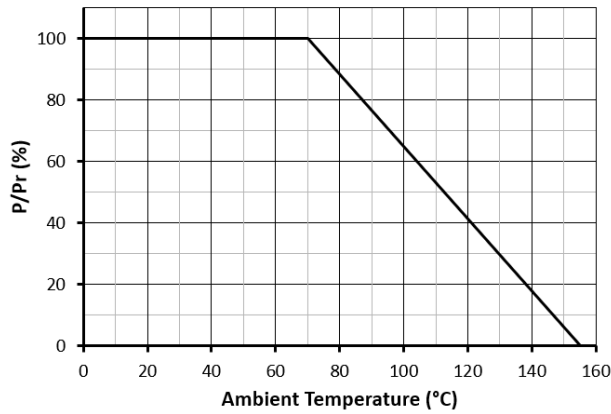
| Test                            | Method  | ±ΔR% | Maximum (+0.1Ω) |
|---------------------------------|---|------|-----------------|
| Load life                       | 1000 hours, cyclic load at 70°C                   | ±ΔR% | 3               |
| Short term overload             | 2.5 x rated voltage for 5s                        | ±ΔR% | 2               |
| High temperature operation      | 1000 hours, 155°C                                 | ±ΔR% | 3               |
| Temperature cycling             | 5 cycles, -55 to +155°C                           | ±ΔR% | 1.5             |
| Moisture resistance             | 1000 hours, 40°C, 95% RH                          | ±ΔR% | 3               |
| Resistance to solder heat       | 260°C for 10s                                     | ±ΔR% | 1               |
| Sulphur resistance <sup>1</sup> | 1000 hours, 50°C, 92% RH, 3-5ppm H <sub>2</sub> S | ±ΔR% | 0.5             |

Note 1: Anti-sulphur construction only.

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### Temperature Derating



### Recommended Solder Pads

| Dimensions in mm |             |     |             |             |               |              |              |              |
|------------------|-------------|-----|-------------|-------------|---------------|--------------|--------------|--------------|
| Type             | P           | P1  | A           | B           | X             | X1           | Y            | L            |
| BCN10            | 0.6<br>±0.1 | 0.5 | 0.5<br>±0.1 | 1.5<br>±0.3 | 0.25<br>±0.15 | 0.45<br>±0.1 | 0.5<br>±0.15 | 2.15<br>±0.1 |

| Dimensions in mm |     |           |            |      |      |   |
|------------------|-----|-----------|------------|------|------|---|
| Type             | P   | A         | B          | C    | X    | Y |
| BCN164           | 0.8 | 1<br>±0.2 | 3<br>±0.15 | 0.35 | 0.45 | 1 |

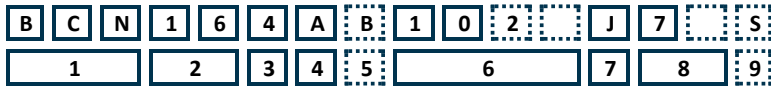
| Dimensions in mm |      |     |     |     |      |     |
|------------------|------|-----|-----|-----|------|-----|
| Type             | P    | A   | B   | X   | X1   | Y   |
| BCN168           | 0.64 | 1.2 | 2.4 | 0.3 | 0.45 | 0.6 |

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### Ordering Procedure

**Example: BCN164AB102J7S** (BCN 1.6mm wide, 4 resistors, isolated circuit, square edge, convex terminations at 1 kilohm  $\pm 5\%$ , on a 7" reel, anti-sulphur construction, Pb-free)



| 1      | 2          | 3              | 4                   | 5          | 6  | 7                  | 8                      | 9                |
|--------|------------|----------------|---------------------|------------|--|--------------------|------------------------|------------------|
| Series | Width      | Resistor Count | Circuit             | Edge       | Value  | Tolerance          | Packaging              | Construction     |
| BCN    | 10 = 1mm   | 4              | A = Isolated        | Blank =    | 3 digits for E24 at 5%                             | F = $\pm 1\%$      | 7 = 7" reel (standard) | Blank = Standard |
|        | 16 = 1.6mm | 8              | S = Standard bussed | Scalloped  | 4 digits for uniquely E96 and for all values at 1% | J = $\pm 5\%$      | 13 = 13" reel          | S = Anti-sulphur |
|        |            |                | R = Reverse bussed  | B = Square | JP = Jumper  | (Blank for Jumper) |                        |                  |

| Valid Options |   |   |   |   |   |   |   |    |                                 | Packaging Quantity & Tape |   |
|---------------|---|---|---|---|---|---|---|----|---------------------------------|---------------------------|---|
| 1             | 2 | 3 | 4 | 5 | 6 | 9 |   |    |                                 |                           | 8   |
| B             | C | N | 1 | 0 | 4 | A | B | JP | S (5% tolerance & 7" reel only) |                           | 7 = 10,000/reel, 13 = 40,000/reel, Paper tape |
| B             | C | N | 1 | 6 | 4 | A |   | JP | S (1% tolerance & 7" reel only) |                           |   |
| B             | C | N | 1 | 6 | 4 | A | B | JP | S                               |                           | 7 = 5,000/reel, 13 = 20,000/reel, Paper tape  |
| B             | C | N | 1 | 6 | 8 | S | B |    |                                 |                           |   |
| B             | C | N | 1 | 6 | 8 | R | B |    | S (7" reel only)                |                           |   |

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