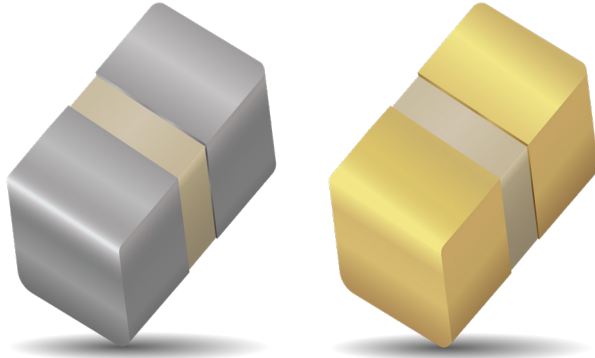


# RF/Microwave Capacitors

## RF/Microwave Multilayer Capacitors (MLC)

### 550L Series UBC™ Ultra-Broadband Capacitor



## GENERAL DESCRIPTION

KYOCERA AVX new 550L Ultra-Broadband Capacitor is manufactured with highest quality materials to provide reliable and repeatable Ultra-Broadband performance from 16 KHz through 70+ GHz. It exhibits ultra-low insertion loss, flat frequency response and excellent return loss, and is ideal for D.C. Blocking, Coupling, Bypassing and Feedback applications requiring Ultra-Broadband performance.

The 550L is a one-piece orientation-insensitive 0402 SMT package, fully compatible with high speed automated pick-and-place manufacturing. It is designed to meet the most stringent requirements of Ultra-Broadband applications.

## ADVANTAGES

- Ultra-Broadband performance
- Ultra-Low Insertion Loss
- Flat Frequency Response
- Excellent Return Loss
- Unit-to-Unit Performance Repeatability
- Rugged Ceramic Construction

## TYPICAL CIRCUIT APPLICATIONS

- Optoelectronics/High Speed Data
- Transimpedance amplifiers
- Receive and Transmit Optical Sub-Assembly (ROSA/TOSA)
- Synchronous Optical Network (SONET)
- Broadband test equipment
- Broadband Microwave/Millimeter Wave

## FEATURES

- 0402 Case Size
- Capacitance: 100 nF
- Operating Frequency: 16 KHz (-3 dB roll-off) to 70+ GHz\*
- Insertion Loss: <0.5 dB typical
- Orientation-insensitive
- One Piece Construction
- Voltage Rating: 16 WVDC\*\*
- RoHS Compliant Terminations
- Gold Termination Available

\* 25°C, no bias applied

\*\* Operating Temperature Dependent

## ELECTRICAL SPECIFICATIONS

|                                               |                                                                                             |
|-----------------------------------------------|---------------------------------------------------------------------------------------------|
| <b>Capacitance</b>                            | 100 nF                                                                                      |
| <b>Rated Voltage</b>                          | 16 WVDC from -55°C to +85°C<br>10 WVDC from -55°C to +125°C                                 |
| <b>Dielectric Withstanding Voltage</b>        | 250% of rated WVDC for 5 secs.                                                              |
| <b>Operating Temperature Range</b>            | -55°C to +125°C                                                                             |
| <b>Temperature Coefficient of Capacitance</b> | ±15% (-55°C to +85°C), 16 WVDC<br>±22% (-55°C to +125°C), 10 WVDC                           |
| <b>Insulation Resistance</b>                  | 10 <sup>8</sup> Ω min. @ +25°C @ rated WVDC<br>10 <sup>7</sup> Ω min. @ +125°C @ rated WVDC |

## PACKAGING OPTIONS

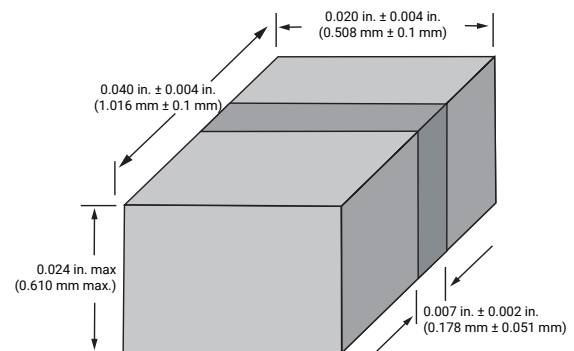


Tape & Reel



RoHS  
COMPLIANT

## MECHANICAL DIMENSIONS



RF/Microwave Capacitors  
RF/Microwave Multilayer Capacitors (MLC)  
550L Series UBC™ Ultra-Broadband Capacitor



HOW TO ORDER

**Series** 550

**Case Size** L

See mechanical dimensions below

**Capacitance** 104

EIA Capacitance Code in pF.  
First two digits = significant figures or "R" for decimal place.  
Third digit = number of zeros or after "R" significant figures

**Capacitance Tolerance Code** V

**Packaging** T

T = Tape and Reel, 1000 pc qty.  
T\500 = Tape and Reel, 500 pc qty

**Termination Style Code** T

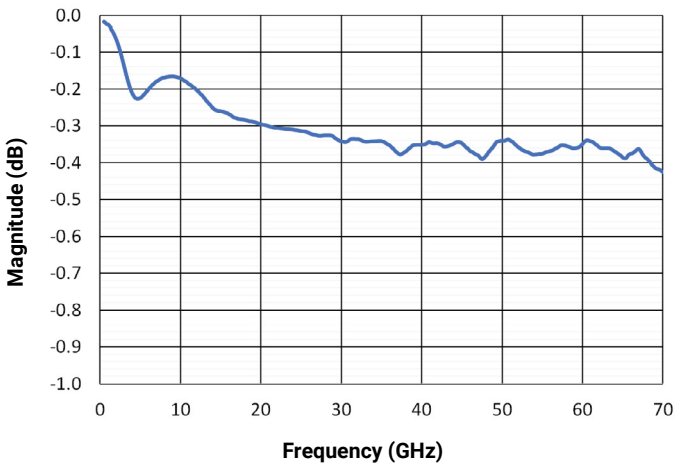
T = Tin Plated over Nickel Barrier (Standard)  
CA = Gold Plated over Nickel Barrier

| Code | K    | V          |
|------|------|------------|
| Tol. | ±10% | + 20% -10% |

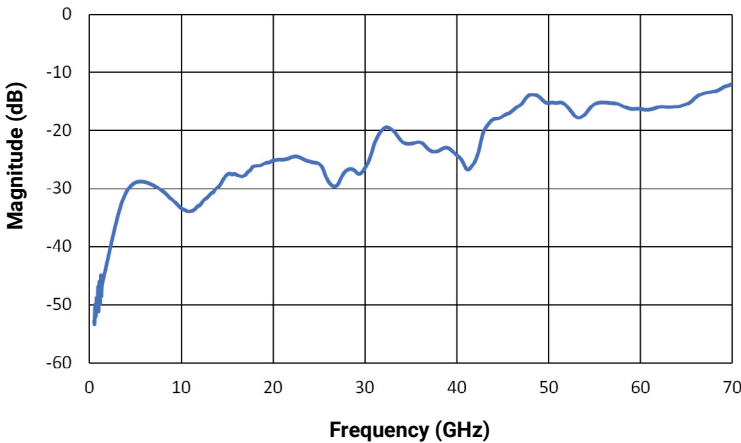
The above part number refers to a 550 Series (case size L) 100 nF capacitor, V Tolerance (+ 20% -10%), with T termination (Tin Plated over Nickel Barrier), tape and reel packaging.

PERFORMANCE DATA

550L Series Insertion Loss (S21)



550L Series Return Loss (S11)



550L Data Sheet Condition Description

The S-Parameter test was performed on Rogers RO4350B 10-mil thick substrate with a nominal impedance of 50 ohms. the board has a 10-mil gap at the center of a 22-mil wide ½ oz copper microstrip trace