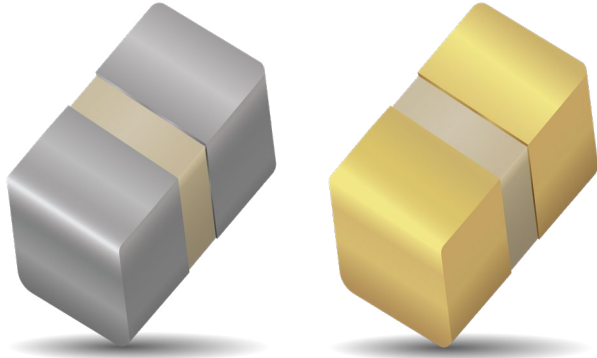


# RF/Microwave Capacitors

## RF/Microwave Multilayer Capacitors (MLC)

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



## GENERAL DESCRIPTION

AVX's new 550Z Ultra-Broadband Capacitor is manufactured with highest quality materials to provide reliable and repeatable Ultra-Broadband performance from 160 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 550Z is a one-piece orientation-insensitive 0201 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 & Transmit Optical Sub Assembly (ROSA/TOSA)
- Synchronous Optical Network (SONET)
- Broadband test equipment
- Broadband Microwave/Millimeter Wave

## FEATURES

- 0201 Case Size
- Capacitance: 10 nF
- Operating Frequency: 160 KHz (-3 dB roll-off) to 70+ GHz\*
- Insertion Loss: <0.4 dB typical
- Orientation-insensitive
- One Piece Construction
- Voltage Rating: 10 WVDC\*\*
- RoHS Compliant Terminations
- Gold Termination Available

\* 25°C, no bias applied

\*\* Operating temperature dependent

## ELECTRICAL SPECIFICATIONS

|   |   |
|---|---|
| <b>Capacitance</b>                            | 10 nF min.  |
| <b>Rated Voltage</b>                          | 6.3 WVDC from -55°C to +125°C<br>10 WVDC from -55°C to +85°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> | ±22% (-55°C to +125°C)<br>±15% (-55°C to +85°C)   |
| <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 |

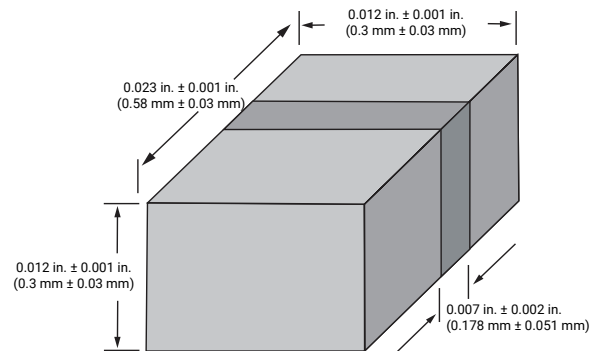
## PACKAGING OPTIONS



Tape & Reel



## MECHANICAL DIMENSIONS



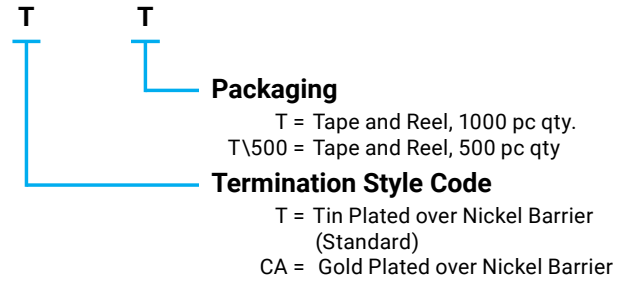
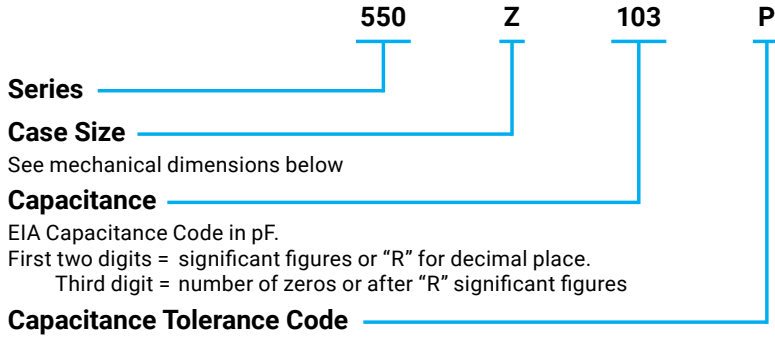
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## RF/Microwave Multilayer Capacitors (MLC)

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



#### HOW TO ORDER

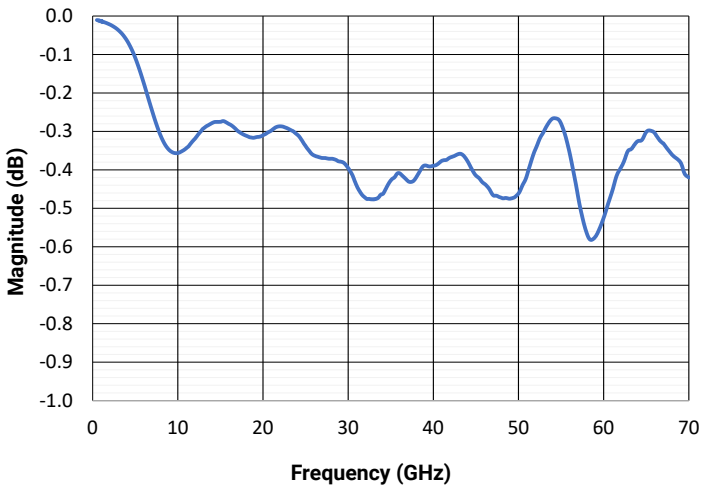


| Code | P          |
|------|------------|
| Tol. | +100%, -0% |

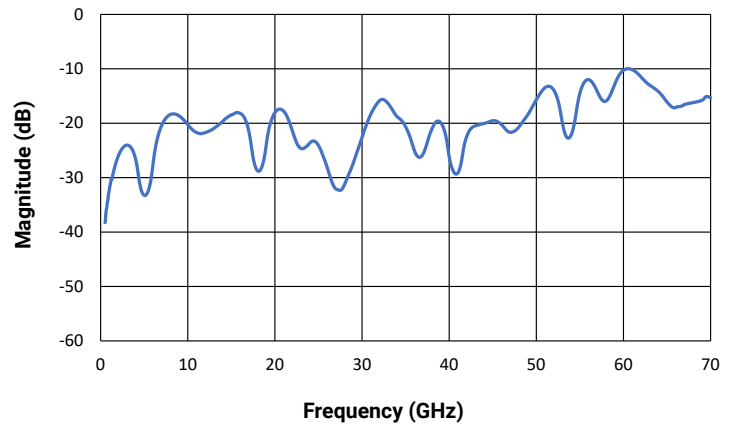
The above part number refers to a 550 Series (case size z) 10 nF capacitor, P tolerance, with T termination (Tin Plated over Nickel Barrier), tape and reel packaging.

#### PERFORMANCE DATA

##### 550Z Series Insertion Loss (S21)



##### 550Z Series Return Loss (S11)



#### AVX 550Z Data Sheet Test Condition Description

All testing performed on 10-mil-thick Rogers RO3006 microstrip board, with the device under test subtending a 10 mil gap in a 13.4-mil-wide center trace (nominal 50-ohm characteristic impedance).

