

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

### Features:

- EIA 0402 Case Size
- Capacitance: 100 nF
- Operating Frequency: 16 KHz (-3 dB roll-off) to 40+ GHz\*
- Insertion Loss: < 0.5 dB typical
- Orientation Insensitive
- One Piece Construction
- Voltage Rating: 16 WVDC\*\*
- RoHS Compliant Terminations
- Gold Terminations Available

ATC's new 550L Ultra-Broadband Capacitor is manufactured with highest quality materials to provide reliable and repeatable Ultra-Broadband performance from 16 KHz through 40+ 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.



### Patented Design

#### Advantages:

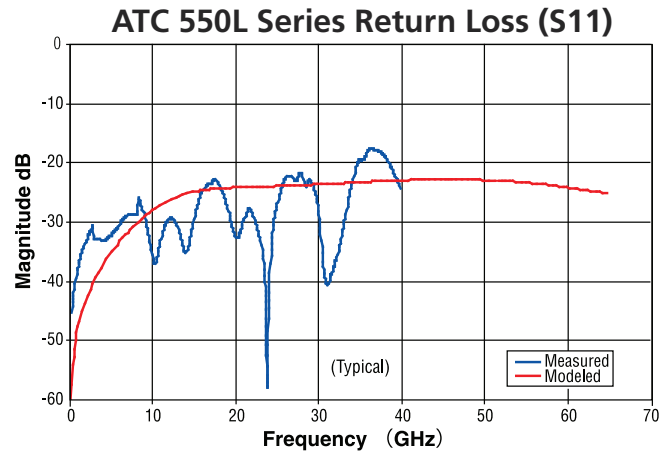
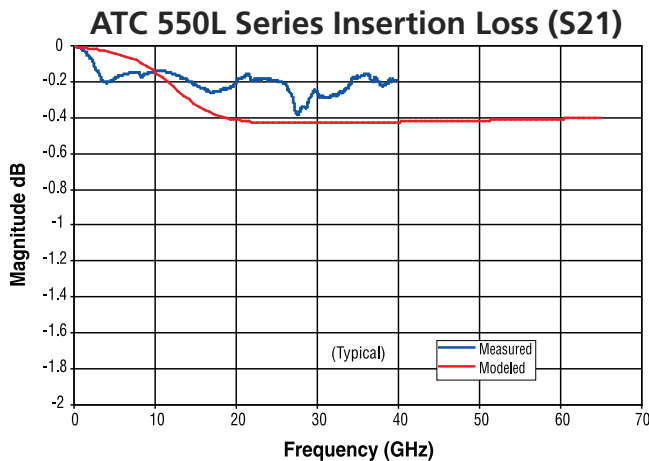
- Ultra-Broadband Performance
- Ultra-Low Insertion Loss
- Flat Frequency Response
- Excellent Return Loss
- Unit-to-Unit Performance Repeatability
- Rugged Ceramic Construction

\* 25 °C, no bias applied

\*\* Operating Temperature dependent

#### Applications:

- Optoelectronics/ High Speed Data
  - Transimpedance amplifiers
  - ROSA/TOSA†
  - SONENT††
  - Broadband Test Equipment
  - Broadband Microwave/ millimeter-wave
- † Receive and Transmit Optical Sub-Assembly  
†† Synchronous Optical Network



#### ATC 550L Data Sheet Test Condition Description

ATC testing to 40 GHz performed on 10-mil-thick Rogers R04350 microstrip board, with the device under test subtending a 24 mil gap in a 22-mil-wide center trace (nominal 50-ohm characteristic impedance). Modelithics model developed through testing on several different substrates, including 5-mil-thick Alumina measured through 65 GHz. The modeled results presented for R04350 were for a pad width of 20 mils and a gap of 16 mils.



Modeled data by  
Modelithics Corp.



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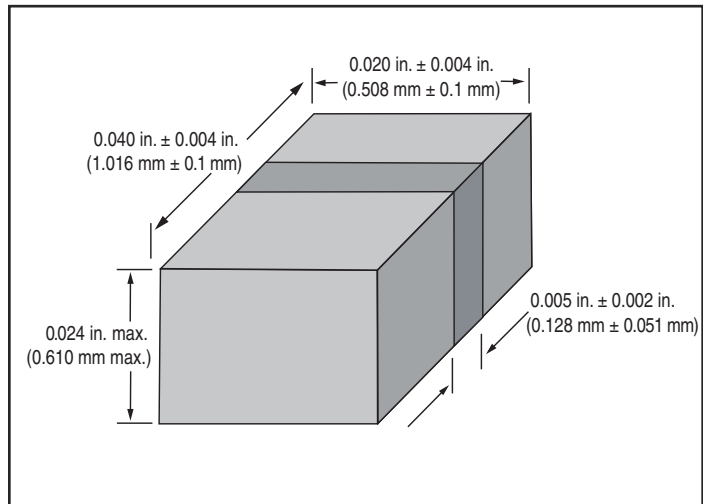
THE ENGINEERS' CHOICE®  
ISO 9001 REGISTERED

# ATC 550L SERIES UBC™ CAPACITORS

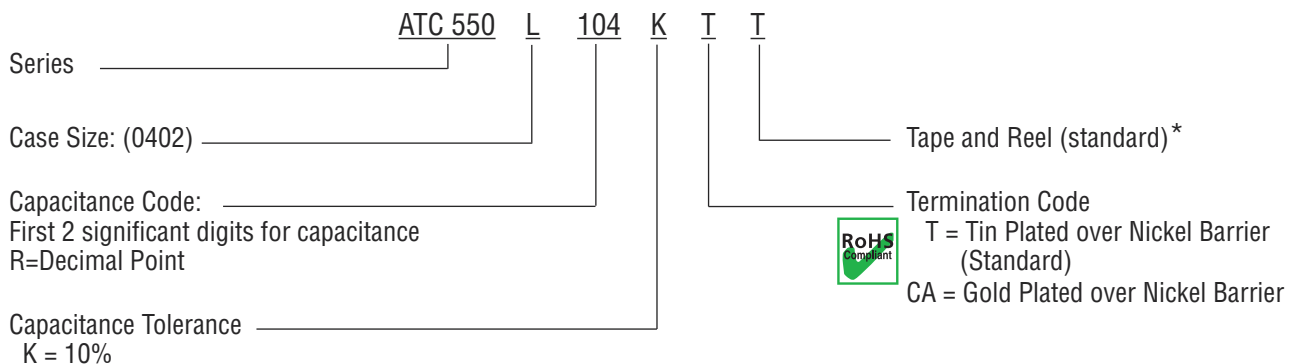
## Electrical Specifications:

- Capacitance: 100 nF
- Rated Voltage:
  - 16 WVDC from -55°C to +85°C
  - 10 WVDC from -55°C to +125°C
- Dielectric Withstanding Voltage (DWV):
  - 250% of rated WVDC for 5 secs.
- Operating Temperature Range:
  - 55°C to +125°C
- Temperature Coefficient of Capacitance (TCC):
  - ±15% (-55°C to +85°C)
  - ±22% (>85°C to +125°C)
- Insulation Resistance:
  - 10<sup>10</sup> Ω min. @ +25°C @ rated WVDC
  - 10<sup>9</sup> Ω min. @ +125°C @ rated WVDC

## Mechanical Dimensions



## ATC PART NUMBER CODE



\* 1000 pieces on 7" reel. Consult factory for other quantities.

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

ATC accepts orders for our parts using designations **with** or **without** the "ATC" prefix. Both methods of defining the part number are equivalent, i.e., part numbers referenced with the "ATC" prefix are interchangeable to parts referenced without the "ATC" prefix. Customers are free to use either in specifying or procuring parts from American Technical Ceramics.

For additional information and catalogs contact your ATC representative or call direct at (+1-631) 622-4700.

Consult factory for additional performance data.

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