Corporate Profile

American Technical Ceramics Corp. (ATC) provides component and custom integrated packaging solutions for the RF, microwave and telecommunications industries. For over forty years we have been “The Engineer’s Choice®”. ATC designs, develops, manufactures and markets Multilayer Capacitors, Single Layer Capacitors, Resistor Products, Inductors and Custom Thin Film Products for RF, microwave and millimeter-wave applications. Our products are primarily used in: wireless communications infrastructure, fiber optics, medical electronics, semiconductor manufacturing equipment, defense, aerospace, and satellite communications markets.

As part of our globalization initiative ATC has a wholly-owned subsidiary for European Direct Sales, Applications Support and Distribution, located in Kungens Kurva, Sweden. The Company’s wholly-owned subsidiary offering Technical Support for Asia is located in Shenzhen, P.R. China. ATC also has local offices in Holzkirchen, Germany, Guildford, England and Moscow, Russia.

RLC Products
- Multilayer Ceramic Capacitors
- Capacitor Assemblies for Power Applications
- Single Layer Ceramic Capacitors
- Resistor Products
- Inductor Products

Markets Served
- Wireless / Telecom Base Stations
- Semiconductor Manufacturing Equipment
- Medical Diagnostic Equipment
- Satellite Systems
- Public Safety Radio
- Avionic Systems
- Military and Aerospace
- Commercial Broadcast Transmitters
- Fiber Optic Communications
- Automotive Electronics

Process and Packaging
- Thin Film Custom Products: metalization and patterned substrates for a broad range of hybrid circuit requirements

ATC’s Quick Reference Product Selection Guide is designed to help you navigate through our products and services. The following parameters, included in ATC’s complete catalog, are highlights of each Product Series:
- Full electrical and mechanical specifications
- ESR, FSR, Q and TCC Performance Curves
- Power Handling Data
- Design Software
- Application Notes
- Thin Film Overview

Download complete pdf data sheets at www.atceramics.com
ATC’s website includes a complete listing of technical articles in pdf format, as well as new product updates and design support software. As an added convenience, ATC Multilayer Capacitor Kits and Inductor Design Kits may be purchased online.

NOTE: Contact ATC’s Applications Engineers for further technical information at (631) 622-4700.
To receive a full catalog, contact any ATC representative or call the factory.

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+86-755-2396-8759 • sales@atceramics-asia.com

www.atceramics.com
### Frequency Range 1: Up to 30 MHz

<table>
<thead>
<tr>
<th>Typical Applications</th>
<th>Capacitor Products</th>
<th>Power Capacitor Assemblies</th>
<th>Resistive Products</th>
<th>Inductor Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Frequency Communication Systems, Switch Mode Power Supplies, AM Broadcast, Semiconductor Fabrication, HF Amplifiers, Medical (MRI)</td>
<td>ATC 100 Series Porcelain MLCs</td>
<td>Extented Capacitance Assemblies</td>
<td>Resistors</td>
<td>WL Chip Inductors - EIA Sizes 0402 0603 0805 1008 1206</td>
</tr>
<tr>
<td></td>
<td>ATC 700 Series NPO Porcelain and Ceramic MLCs</td>
<td>Extended Voltage &amp; Current Assemblies</td>
<td>Terminations: SMT, Chip Leaded &amp; Flanged</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ATC 200 Series BX Ceramic MLCs</td>
<td>Matched Sets</td>
<td>Attenuators</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ATC 900 Series X7R Ceramic RF Power MLCs</td>
<td>Voltage Dividers</td>
<td>Non-Magnetic Series CR, LR, FR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ATC 520 / 545 Series</td>
<td>General Purpose</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ATC 520 / 545 Series</td>
<td>CDR / QPL Approved MIL-PRF-55681</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>ATC 520 / 545 Series</td>
<td>COTS</td>
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### Frequency Range 2: >30 MHz to 800 MHz

<table>
<thead>
<tr>
<th>Typical Applications</th>
<th>Capacitor Products</th>
<th>Power Capacitor Assemblies</th>
<th>Resistive Products</th>
<th>Inductor Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical (MRI), Aircraft, Marine, Public Safety, Military</td>
<td>ATC 100 Series Porcelain MLCs</td>
<td>Extented Capacitance Assemblies</td>
<td>Resistors</td>
<td>WL Chip Inductors - EIA Sizes 0402 0603 0805 1008 1206</td>
</tr>
<tr>
<td></td>
<td>ATC 700 Series NPO Porcelain and Ceramic MLCs</td>
<td>Extended Voltage &amp; Current Assemblies</td>
<td>Terminations: SMT, Chip Leaded &amp; Flanged</td>
<td></td>
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<tr>
<td></td>
<td>ATC 800 Series NPO Ceramic MLCs</td>
<td>Matched Sets</td>
<td>Attenuators</td>
<td></td>
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<tr>
<td></td>
<td>ATC 200 Series BX Ceramic MLCs</td>
<td>Voltage Dividers</td>
<td>Non-Magnetic Series CR, LR, FR</td>
<td></td>
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<tr>
<td></td>
<td>ATC 900 Series X7R Ceramic RF Power MLCs</td>
<td>General Purpose</td>
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<td>ATC 520 / 545 Series</td>
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### Frequency Range 3: >800 MHz to 3.5 GHz

<table>
<thead>
<tr>
<th>Typical Applications</th>
<th>Capacitor Products</th>
<th>Advanced Substrate Packaging</th>
<th>Resistive Products</th>
<th>Inductor Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless Infrastructure (Cellular / PCS / DCS / GPS / MMDS), Bluetooth, Wireless LAN (802.11)</td>
<td>ATC 100 Series Porcelain MLCs</td>
<td>Thin Film Circuit Fabrication Services</td>
<td>Resistors</td>
<td>WL Chip Inductors - EIA Sizes 0402 0603 0805 1008 1206</td>
</tr>
<tr>
<td></td>
<td>ATC 700 Series NPO Porcelain and Ceramic MLCs</td>
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<td>Terminations: SMT, Chip Leaded &amp; Flanged</td>
<td></td>
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<tr>
<td></td>
<td>ATC 800 Series NPO Ceramic MLCs</td>
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<td>Attenuators</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ATC 200 Series BX Ceramic MLCs</td>
<td></td>
<td>Non-Magnetic Series CR, LR, FR</td>
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<tr>
<td></td>
<td>ATC 520 / 545 Series</td>
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<td>ATC 520 / 545 Series</td>
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<td></td>
<td>ATC 520 / 545 Series</td>
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</table>

### Frequency Range 4: >3.5 GHz to 100 GHz

<table>
<thead>
<tr>
<th>Typical Applications</th>
<th>Capacitor Products</th>
<th>Advanced Substrate Packaging</th>
<th>Resistive Products</th>
<th>Inductor Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satellite Communications, LMDS, Radar, High Speed Data</td>
<td>ATC 100 Series Porcelain MLCs</td>
<td>Thin Film Circuit Fabrication Services</td>
<td>Resistors</td>
<td>WL Chip Inductors - EIA Sizes 0402 0603 0805 1008 1206</td>
</tr>
<tr>
<td></td>
<td>ATC 700 Series NPO Porcelain and Ceramic MLCs</td>
<td></td>
<td>Terminations: SMT, Chip Leaded &amp; Flanged</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ATC 800 Series NPO Ceramic MLCs</td>
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<td>Attenuators</td>
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<tr>
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<td>ATC 200 Series BX Ceramic MLCs</td>
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<td>Non-Magnetic Series CR, LR, FR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ATC 520 / 545 Series</td>
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<td>ATC 520 / 545 Series</td>
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</tr>
<tr>
<td></td>
<td>ATC 520 / 545 Series</td>
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</tr>
</tbody>
</table>

**ATC Products by Frequency Range**

- **Frequency Range 1**: Up to 30 MHz
- **Frequency Range 2**: >30 MHz to 800 MHz
- **Frequency Range 3**: >800 MHz to 3.5 GHz
- **Frequency Range 4**: >3.5 GHz to 100 GHz
ATC HIGH POWER RF RESISTIVE PRODUCTS
ATC’s complete line of high power resistive products are designed and manufactured in our ISO-9001 registered facility. These products are manufactured with non-toxic, cost effective, aluminum nitride based substrates and qualified to Mil-PRF-55342, MIL-STD 202, and ANSI / J-STD-002 specifications.

ATC high power resistive products are suitable for many wireless and satellite communication applications including GSM, PCS, W-CDMA, 3G, WCS, ISM and Wireless LAN. Other applications include medical, industrial, military and aerospace. Typical circuit applications are splitter-combiner networks, power amplifiers, synthesizers, MRI coils, isolators and circulators.

DC and RF Specifications:
- Resistance value: 50 and 100 Ω standard (10 to 200 available)
- Terminations: Typical VSWR from 1.05:1 to 1.20:1
- Resistors: Low parasitic capacitance (See catalog)
- Temperature Coefficient of Resistance (TCR) <150ppm/°C typical
- Operating temperature range: -55°C to +150°C

Mechanical Specifications:
- Substrate – Aluminum Nitride; Resistive Film – Tantalum Nitride; Terminals – Silver
- Flangeless and Flanged tabs – 100% silver leads; Covers – Alumina
- Copper flanges – Nickel or Silver plated
- Lead-Free, RoHS compliant

Non-magnetic products available

ATC RESISTOR SERIES
ATC CR Chip Resistors
- Power handling: 5 watts to 250 watts

ATC CS and CW Surface Mount Resistors
- Power handling: 2 watts to 40 watts

ATC LR Leaded Chip Resistors
- Power handling: 30 watts to 250 watts

ATC FR Flanged Resistors
- Power handling: 15 watts to 250 watts

ATC TERMINATION SERIES
ATC CT Series Chip Terminations
- Power handling: 5 watts to 225 watts

ATC CZ Series Surface Mount Terminations
- Power handling: 10 watts to 40 watts

ATC LT Series Leaded Terminations
- Power handling: 12 watts to 225 watts

ATC FT Series Flanged Terminations
- Power handling: 15 watts to 225 watts

ATC WL SERIES INDUCTOR PRODUCTS
ATC introduces its new family of RF surface mount inductor components, intended to complement its high frequency ultra low ESR capacitor products. The WL Series wire wound chip inductor products have been designed to provide excellent performance at competitive prices.

This Series includes the most widely used traditional EIA case sizes – 0402, 0603, 0805, 1008, and 1206. With an inductance range of 1 nH to 15,000 nH, these products have an operating temperature of -40°C to +125°C and a temperature coefficient of inductance (TCI) of +25 to +125 ppm/°C typical from -40°C to +125°C.

The WL inductor product line is intended for RF and microwave applications and features high self-resonant frequencies (SRF), high Q, and low DC resistance. These products are manufactured on a rugged core made of high quality ceramic material that exhibits high Q at high operating frequencies.

The WL Series is especially attractive for all 800 MHz to 3.4 GHz wireless applications where cost and performance are major factors. These applications include but are not limited to: cellular base stations, broadband wireless services, point-to-point and point-to-multipoint radio as well as other RF and microwave telecommunications systems.

All WL Series inductor products are supplied in tape and reel (2000 to 4000 parts per reel depending on case size) as standard, making them ideal for automated pick and place manufacturing applications. The terminations consist of a barrier layer with a lead-free tin-plated finish that exhibits excellent solderability for trouble-free attachments.

ATC WL (size = 0402)
- Inductance Range: 1.0 nH @ 250 MHz to 56 nH @ 250 MHz
- Tolerances: J (±5%), K (±10%)

ATC WL (size = 0603)
- Inductance Range: 1.6 nH @ 250 MHz to 390 nH @ 100 MHz
- Tolerances: G (±2%), J (±5%), K (±10%)

ATC WL (size = 0805)
- Inductance Range: 3.3 nH @ 250 MHz to 2700 nH @ 25 MHz
- Tolerances: G (±2%), J (±5%), K (±10%)

ATC WL (size = 1008)
- Inductance Range: 4.7 nH @ 50 MHz to 15,000 nH @ 7.9 MHz
- Tolerances: G (±2%), J (±5%), K (±10%)

ATC WL (size = 1206)
- Inductance Range: 6.8 nH @ 100 MHz to 1200 nH @ 35 MHz
- Tolerances: J (±5%), K (±10%)

ATC M illimeter-Wave / Broadband / Ultra-Broadband Surface Mount Capacitors
ATC 520 L Series Broadband Capacitors
- 160 KHz to 16 GHz

ATC 545 L Series UBC™ Ultra-Broadband Capacitors
- 16 KHz to 40+ GHz
**CAPACITORS** (page 12, 13,14)

**ATC 100 SERIES PORCELAIN SUPERCHIP® MLCS**
These capacitors feature high Q, low ESR / ESL, ultra-stable performance, low noise, high self-resonance and established reliability (QPL).

**Non-magnetic products available**
RoHS compliant terminations are standard. Refer to data sheets for other styles.

**ATC 100 B (size = .110" x .110")**
- Capacitance Range 0.1 pF to 1000 pF
- Available with encapsulation option for leaded styles only

**ATC 100 C (size = .250" x .250")**
- Capacitance Range 1 pF to 2700 pF
- High RF Current/Voltage

**ATC 100 E (size = .380" x .380")**
- Capacitance Range 1 pF to 5100 pF
- High RF Power
- Extended WVDC up to 7200 VDC
- High RF Current/Voltage
- High Reliability

**ATC 700 SERIES NPO PORCELAIN AND CERAMIC MLCS**
This series features low ESR / ESL, low noise, ultra-stable NPO performance, high self-resonance and rugged construction. They meet established reliability standards. These capacitors are available with encapsulation option for leaded styles only.

**ATC 700 B (size = .110" x .110")**
- Capacitance Range 0.1 pF to 5100 pF

**ATC 700 C (size = .250" x .250")**
- Capacitance Range 1 pF to 2700 pF

**ATC 700 E (size = .380" x .380")**
- Capacitance Range 1 pF to 5100 pF

**ATC 200 SERIES BX CERAMIC MLCS**
This series features low ESR / ESL, rugged construction and high reliability.

**ATC 200 A (size = .055" x .055")**
- Capacitance Range 510 pF to 0.01 µF

**ATC 200 B (size = .110" x .110")**
- Capacitance Range 5000 pF to 0.1 µF
- Available with encapsulation option for leaded styles only

**ATC 900 SERIES X7R CERAMIC RF POWER MLCS**
This series features low ESR/ESL, rugged construction, a mid-K, X7R dielectric, and high reliability.

**ATC 900 C (size = .250" x .250")**
- Capacitance Range 0.01 µF to 1 µF
- Available with encapsulation option for leaded styles only

**ATC GENERAL PURPOSE MLC CAPACITORS FOR SURFACE MOUNT APPLICATIONS**
ATC provides low cost general purpose capacitors which are not intended for precision designs but are suitable for many applications including DC blocking, coupling, bypassing, and filtering. Available in standard EIA case sizes.

**ATC MILITARY (CDR) PRODUCTS**
ATC is a QPL approved supplier for MIL-PRF-55681/4 and /5 fixed, multilayer, unencapsulated, monolithic porcelain and ceramic dielectric capacitors.

**ATC COTS (COMMERCIAL OFF THE SHELF) PRODUCTS**
Cost-effective upscreening of standard products for enhanced reliability applications.

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**POWER CAPACITOR ASSEMBLIES** (page 15)

**ATC POWER CAPACITOR ASSEMBLIES**
ATC power capacitor assemblies are manufactured to customer specifications using ATC’s proven standard products. Benefits include:

- **Reduced Assembly Steps / Handling Costs**: Combinations of capacitors pre-packaged in manageable mechanical configurations for customer specific “drop-in” applications.
- **Enhanced Reliability**: Overall elements and assemblies are 100% pre-tested to customer’s electrical requirements: Capacitance - Q - IR - DWV (to 10kV max). Elements are 100% ESR tested.
- **Reduced Purchasing Logistics**: Reduced inventory requirements in matched assemblies. This eliminates excess, wasted parts.
- **Reduced Technical Labor**: A alleviate need for engineering and technician resources in selecting electrically matched elements.
- **Guaranteed Performance**: ATC guarantees electrical / mechanical performance on an assembly level every time.

**Achieve Non-Standard Values and Ultra-Tight Tolerances**: ATC will “mix and match” values from our extensive inventory via computer matching programs to achieve any capacitor value specified by the designer.

**Non-magnetic products available**
ATC Series Assemblies: Extended capacitance

<table>
<thead>
<tr>
<th>Standard Designs</th>
<th>B Case</th>
<th>C Case</th>
<th>E Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of caps</td>
<td>2</td>
<td>2 - 6</td>
<td>2 - 8</td>
</tr>
<tr>
<td>Lead Type</td>
<td>L Bracket</td>
<td>L Bracket</td>
<td>L Bracket</td>
</tr>
<tr>
<td>Lead Material</td>
<td>Silver</td>
<td>Silver</td>
<td>Silver or Copper</td>
</tr>
<tr>
<td>Lead Thickness</td>
<td>.004 or .010</td>
<td>.004 or .010</td>
<td>.010 or .020</td>
</tr>
<tr>
<td></td>
<td>(0.10 or 0.25)*</td>
<td>(0.10 or 0.25)*</td>
<td>(0.25 or 0.51)*</td>
</tr>
<tr>
<td>Lead Length</td>
<td>0.5 (12.7)*</td>
<td>0.75 (19.1)*</td>
<td>2.0 (50.8)*</td>
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<tr>
<td></td>
<td>No. of holes (max.)</td>
<td>None</td>
<td>1 per lead</td>
</tr>
<tr>
<td>Mtg. Configuration</td>
<td>Horizontal/Vertical</td>
<td>Horizontal/Vertical</td>
<td>Horizontal/Vertical</td>
</tr>
<tr>
<td>Capacitor Spacer (typ.)</td>
<td>.050 or .070</td>
<td>.050 or .070</td>
<td>.090 (1.27 or 1.78)*</td>
</tr>
<tr>
<td></td>
<td>*inches (mm)</td>
<td>(1.27 or 1.78)*</td>
<td>(2.29)*</td>
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**ATC Series Assemblies: Extended voltage**

<table>
<thead>
<tr>
<th>Standard Designs</th>
<th>C Case</th>
<th>E Case</th>
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</thead>
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<td>No. of caps</td>
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<tr>
<td>Lead Type</td>
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<td>L Bracket</td>
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<tr>
<td>Lead Material</td>
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<tr>
<td>Lead Thickness</td>
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<tr>
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<td></td>
<td>No. of holes (max.)</td>
<td>1 per lead</td>
</tr>
<tr>
<td>Mtg. Configuration</td>
<td>Horizontal</td>
<td>Horizontal</td>
</tr>
<tr>
<td>Capacitor Spacer (typ.)</td>
<td>.050 (1.27)*</td>
<td>.050 (1.27)*</td>
</tr>
<tr>
<td></td>
<td>*inches (mm)</td>
<td></td>
</tr>
</tbody>
</table>

**Matched Sets**: Series or Parallel configurations for non-standard values or very close tolerance capacitance values.

**Voltage Dividers**: based on capacitive reactance, provided to customers' specific capacitance ratio.
ATC HIGH POWER RF RESISTIVE PRODUCTS
ATC’s complete line of high power resistive products are designed and manufactured in our ISO-9001 registered facility. These products are manufactured with non-toxic, cost effective, aluminum nitride base substrates and qualified to Mil-PRF-55342, MIL-STD 202, and ANSI/J-STD-002 specifications.

ATC high power resistive products are suitable for many wireless and satellite communication applications including GSM, PCS, W-CDMA, 3G, WCDMA, ISM and Wireless LAN. Other applications include medical, industrial, military and aerospace. Typical circuit applications are splitter-combiner networks, power amplifiers, synthesizers, MRI coils, isolators and circulators.

DC and RF Specifications:
- Resistance value: 50 and 100 standard (10 to 200 available)
- Terminations: Typical VSWR: 1.05:1 to 1.20:1
- Resistors: Low parasitic capacitance (See catalog)
- Temperature Coefficient of Resistance (TCR) <150ppm/°C typical
- Operating temperature range: -55°C to +150°C

Mechanical Specifications:
- Substrate – Aluminum Nitride; Resistive Film – Tantalum Nitride; Terminals – Silver
- Flangeless and Flanged tabs – 100% silver leads; Covers – Alumina
- Copper flanges – Nickel or Silver plated
- Lead-Free, RoHS compliant

Non-magnetic products available

ATC RESISTOR SERIES
ATC CR Chip Resistors
- Power handling: 5 watts to 250 watts

ATC CS and CW Surface Mount Resistors
- Power handling: 2 watts to 40 watts

ATC LR Lead Chip Resistors
- Power handling: 30 watts to 250 watts

ATC FR Flanged Resistors
- Power handling: 15 watts to 250 watts

ATC TERMINATION SERIES
ATC CT Series Chip Terminations
- Power handling: 5 watts to 225 watts

ATC CZ Series Surface Mount Terminations
- Power handling: 10 watts to 40 watts

ATC LT Series Leaded Terminations
- Power handling: 12 watts to 225 watts

ATC FT Series Flanged Terminations
- Power handling: 15 watts to 225 watts

ATC ATTENUATOR SERIES
ATC CA Series Chip Attenuators
- Power handling: up to 100 watts

ATC LA Series Leaded Attenuators
- Power handling: up to 100 watts

ATC FA Series Flanged Attenuators
- Power handling: up to 100 watts

ATC WL SERIES INDUCTOR PRODUCTS
ATC introduces its new family of RF surface mount inductor components, intended to complement its high frequency ultra low ESR capacitors products. The WL Series wire wound chip inductor products have been designed to provide excellent performance at competitive prices.

This Series includes the most widely used traditional EIA case sizes – 0402, 0603, 0805, 1008, and 1206. With an inductance range of 1 nH to 15,000 nH, these products have an operating temperature of -40°C to +125°C and a temperature coefficient of inductance (TCL) of +25 to +125 ppm/°C typical from -40°C to +125°C.

The WL inductor product line is intended for RF and microwave applications and features high self-resonant frequencies (SRF), high Q, and low DC resistance. These products are manufactured on a rugged core made of high quality ceramic material that exhibits high Q at high operating frequencies.

The WL Series is especially attractive for all 800 MHz to 3.4 GHz wireless applications where cost and performance are major factors. These applications include but are not limited to: cellular base stations, broadband wireless services, point-to-point and point-to-multipoint radio as well as other RF and microwave telecommunications systems.

All WL Series inductor products are supplied in tape and reel (2000 to 4000 parts per reel depending on case size) as standard, making them ideal for automated pick and place manufacturing applications. The terminations consist of a barrier layer with a lead-free tin-plated finish that exhibits excellent solderability for trouble-free attachments.

ATC WL (size = 0402)
- Inductance Range: 1.0 nH @ 250 MHz to 56 nH @ 250 MHz
- Tolerances: J (±5%), K (±10%)

ATC WL (size = 0603)
- Inductance Range: 1.6 nH @ 250 MHz to 390 nH @ 100 MHz
- Tolerances: G (±2%), J (±5%), K (±10%)

ATC WL (size = 0805)
- Inductance Range: 3.3 nH @ 250 MHz to 2700 nH @ 25 Mhz
- Tolerances: G (±2%), J (±5%), K (±10%)

ATC WL (size = 1008)
- Inductance Range: 4.7 nH @ 50 MHz to 15,000 nH @ 7.9 MHz
- Tolerances: G (±2%), J (±5%), K (±10%)

ATC WL (size = 1206)
- Inductance Range: 6.8 nH @ 100 MHz to 1200 nH @ 35 Mhz
- Tolerances: J (±5%), K (±10%)

ATC MILLIMETER-WAVE / BROADBAND / ULTRA-BROADBAND SURFACE MOUNT CAPACITORS
ATC 520 L Series Broadband Capacitors
- 160 KHz to 16 GHz

ATC 545 L Series UBC™ Ultra-Broadband Capacitors
- 16 KHz to 40+ GHz

ATC GENERAL PURPOSE MLC SURFACE MOUNT CAPACITORS
Low cost general purpose capacitors, not intended for precision designs but suitable for many applications including DC blocking, coupling, bypassing, and filtering. This offering consists of a variety of dielectric types from the most stable NPO to high K versions for maximum capacitance. Available in standard EIA case sizes.
Cost-effective upscreening of standard products for enhanced reliability applications. ATC COTS (COMMERCIAL OFF THE SHELF) PRODUCTS

unencapsulated, monolithic porcelain and ceramic dielectric capacitors. ATC is a QPL approved supplier for MIL-PRF-55681/4 and /5 fixed, multilayer, high reliability.

ATC MILITARY (CDR) PRODUCTS

Available with encapsulation option for leaded styles only

Capacitance Range 0.01 µF to 1 µF

ATC 900 SERIES X7R CERAMIC RF POWER MLCS

This series features low ESR / ESL, rugged construction, a mid-K, X7R dielectric, and high reliability.

ATC 900 C (size = .250" x .250")

• Capacitance Range 0.01 µF to 1 µF
• Available with encapsulation option for leaded styles only

ATC MILITARY (CDR) PRODUCTS

ATC is a QPL approved supplier for MIL-PRF-55681/4 and /5 fixed, multilayer, unencapsulated, monolithic porcelain and ceramic dielectric capacitors.

ATC COTS (COMMERCIAL OFF THE SHELF) PRODUCTS

Cost-effective upscreening of standard products for enhanced reliability applications.
**ATC HIGH POWER RF RESISTIVE PRODUCTS**

ATC’s complete line of high power resistive products are designed and manufactured in our ISO-9001, registered facility. These products are manufactured with non-toxic, cost effective, aluminum nitride base substrates and qualified to Mil-PRF-55342, MIL-STD 202, and ANSI/J-STD-002 specifications.

ATC high power resistive products are suitable for many wireless and satellite communication applications including GSM, PCS, W-CDMA, 3G, WCDM, and Wireless LAN. Other applications include medical, industrial, military and aerospace. Typical circuit applications are splitter-combiner networks, power amplifiers, synthesizers, MRI coils, isolators and circulators.

**DC and RF Specifications:**
- Resistance value: 50 and 100 standard (10 to 200 available)
- Terminations: Typical VSWR from 1.05:1 to 1.20:1
- Resistors: Low parasitic capacitance (See catalog)
- Temperature Coefficient of Resistance (TCR) <150ppm/°C typical
- Operating temperature range: -55°C to +125°C

**Mechanical Specifications:**
- Substrate – Aluminum Nitride; Resistive Film – Tantalum Nitride; Terminals – Silver
- Flangeless and Flanged tabs – 100% silver leads; Covers – Alumina
- Copper flanges – Nickel or Silver plated
- Lead-Free, RoHS compliant

**Non-magnetic products available**

**ATC RESISTOR SERIES**

**ATC CR Chip Resistors**
- Power handling: 5 watts to 250 watts

**ATC CS and CW Surface Mount Resistors**
- Power handling: 2 watts to 40 watts

**ATC LR Ledged Chip Resistors**
- Power handling: 30 watts to 250 watts

**ATC FR Flanged Resistors**
- Power handling: 15 watts to 250 watts

**ATC TERMINATION SERIES**

**ATC CT Series Chip Terminations**
- Power handling: 5 watts to 225 watts

**ATC CZ Series Surface Mount Terminations**
- Power handling: 10 watts to 40 watts

**ATC LT Series Ledged Terminations**
- Power handling: 12 watts to 225 watts

**ATC FT Series Flanged Terminations**
- Power handling: 15 watts to 225 watts

**ATC ATTENUATOR SERIES**

**ATC CA Series Chip Attenuators**
- Power handling: up to 100 watts

**ATC LA Series Ledged Attenuators**
- Power handling: up to 100 watts

**ATC FA Series Flanged Attenuators**
- Power handling: up to 100 watts

**ATC HIGH POWER RF RESISTIVE PRODUCTS**

ATC introduces its new family of RF surface mount inductor components, intended to complement its high frequency ultra low ESL capacitor products. The WL Series wire wound chip inductor products have been designed to provide excellent performance at competitive prices.

This Series includes the most widely used traditional EIA case sizes – 0402, 0603, 0805, 1008, and 1206. With an inductance range of 1 nH to 15,000 nH, these products have an operating temperature of -40°C to +125°C and a temperature coefficient of inductance (TCI) of +25 to +125 ppm/°C typical from -40°C to +125°C.

The WL inductor product line is intended for RF and microwave applications and features high self-resonant frequencies (SRF), high Q, and low DC resistance. These products are manufactured on a rugged core made of high quality ceramic material that exhibits high Q at high operating frequencies.

The WL Series is especially attractive for all 800 MHz to 3.4 GHz wireless applications where cost and performance are major factors. These applications include but are not limited to: cellular base stations, broadband wireless services, point-to-point and point-to-multipoint radio as well as other RF and microwave telecommunications systems.

All WL Series inductor products are supplied in tape and reel (2000 to 4000 parts per reel depending on case size) as standard, making them ideal for automated pick and place manufacturing applications. The terminations consist of a barrier layer with a lead-free tin-plated finish that exhibits excellent solderability for trouble-free attachments.

**ATC WL (size = 0402)**
- Inductance Range: 1.0 nH @ 250 MHz to 56 nH @ 250 MHz
  - Tolerances: J (±5%), K (±10%)

**ATC WL (size = 0603)**
- Inductance Range: 1.6 nH @ 250 MHz to 390 nH @ 100 MHz
  - Tolerances: G (±2%), J (±5%), K (±10%)

**ATC WL (size = 0805)**
- Inductance Range: 3.3 nH @ 250 MHz to 2700 nH @ 25 MHz
  - Tolerances: G (±2%), J (±5%), K (±10%)

**ATC WL (size = 1008)**
- Inductance Range: 4.7 nH @ 50 MHz to 15,000 nH @ 7.9 MHz
  - Tolerances: G (±2%), J (±5%), K (±10%)

**ATC WL (size = 1206)**
- Inductance Range: 6.8 nH @ 100 MHz to 1200 nH @ 35 MHz
  - Tolerances: J (±5%), K (±10%)

**ATC MILLIMETER-WAVE / BROADBAND / ULTRA-BROADBAND SURFACE MOUNT CAPACITORS**

**ATC 500 S Series Millimeter-Wave Capacitors**
- Low insertion loss and ultra-high self resonance surface mount millimeter-wave capacitors

**ATC 520 L Series Broadband Capacitors**
- 160 KHz to 16 GHz

**ATC 545 L Series UBC™ Ultra-Broadband Capacitors**
- 16 KHz to 40+ GHz

**ATC GENERAL PURPOSE MLC SURFACE MOUNT CAPACITORS**

Low cost general purpose capacitors, not intended for precision designs but suitable for many applications including DC blocking, coupling, bypassing, and filtering. This offering consists of a variety of dielectric types from the most stable NPO to high K versions for maximum capacitance. Available in standard EIA case sizes.
CAPACITORS (page 12, 13, 14)

**ATC 100 SERIES PORCELAIN SUPERCHIP® MLCS**
These capacitors feature High Q, low ESR / ESL, ultra-stable performance, low noise, high self-resonance and established reliability (QPL).

Non-magnetic products available
RoHS compliant terminations are standard. Refer to data sheets for other styles.

- **ATC 100 A** (size = .055” x .055”)
  - Capacitance Range 0.1 pF to 100 pF
- **ATC 100 B** (size = .110” x .110”)
  - Capacitance Range 0.1 pF to 1000 pF
  - Available with encapsulation option for leaded styles only

**ATC 700 SERIES NPO PORCELAIN AND CERAMIC MLCS**
This series features low ESR / ESL, low noise, ultra-stable NPO performance, high self-resonance and rugged construction. They meet established reliability standards.

- **ATC 700 A** (size = .055” x .055”)
  - Capacitance Range 0.1 pF to 1000 pF
- **ATC 700 B** (size =.110” x .110”)
  - Capacitance Range 0.1 pF to 5100 pF
  - Available with encapsulation option for leaded styles only

**ATC 600 SERIES ULTRA-LOW ESR HIGH Q MICROWAVE CAPACITORS**
Feature ultra-low ESR and high self-resonance. Environmentally safe terminations meet or exceed MIL-PRF-55681. Operating temperature is -55°C to +125°C

- **ATC 600 L** (size = 0402)
  - Capacitance Range 0.1 pF to 27 pF
  - Voltage Rating: 200 WVDC
- **ATC 600 S** (size = 0603)
  - Capacitance Range 0.1 pF to 100 pF
  - Voltage Rating: 250 WVDC
- **ATC 600 F** (size = 0805)
  - Capacitance Range 0.1 pF to 240 pF
  - Voltage Rating: 250 WVDC

**ATC 800 SERIES NPO CERAMIC HIGH RF POWER MLCS**
Advantages of these MLCs include optimized form factor, lowest ESR at wireless frequencies, highest self-resonance and superior thermal performance.

- **ATC 800 A** (size = .055” x .055”)
  - Capacitance Range 0.1 pF to 100 pF
- **ATC 800 B** (size = .110” x .110”)
  - Capacitance Range 0.1 pF to 1000 pF

**ATC SINGLE LAYER CAPACITORS**
For applications with operating frequencies up to 100 GHz. Capacitance range 0.04 pF to 10,000 pF, case sizes from 10 mils to 90 mils. “Design your own” option (custom sizes.)

**ATC MILITARY (CDR) PRODUCTS**
ATC is a QPL approved supplier for MIL-PRF-55681/4 and /5 fixed, multilayer, unencapsulated, monolithic porcelain and ceramic dielectric capacitors.

**ATC COTS (COMMERCIAL OFF THE SHELF) PRODUCTS**
Cost-effective upscreening of standard products for enhanced reliability applications.

**THIN FILM (page 16, 17)**

**ATC CUSTOM THIN FILM PRODUCTS**
ATC Custom Thin Film Products are manufactured to customer requirements for applications that include microwave/millimeter-wave, fiber optics and high-rel.

ATC brings a new standard of responsiveness and quality to thin film technology products. Custom metalization and patterned substrates are offered to address a broad spectrum of deposition and hybrid circuit fabrication requirements.

Custom metalization consists of sputtered and electroplated coatings made to specifications. Products may include via holes and odd shaped substrates in a wide choice of ceramics and dielectric materials. Three target, batch sputtering systems with load-locks are utilized for producing the most consistent film quality.

- Full in-house capability to support prototyping to large scale production
- Photolithography Sputtering, Electroplating, Laser Trimming, Laser Machining
- Custom metalization and patterned substrates
- Conductors, Resistors, Via Holes, Air Bridges, Crossovers, Wraparounds, Solder Dams

**Typical Hybrid Circuit Applications**

<table>
<thead>
<tr>
<th>CIRCUIT TYPE</th>
<th>APPLICATION</th>
<th>SUBSTRATE</th>
</tr>
</thead>
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<tr>
<td>Conductor</td>
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<td>Antenna</td>
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</table>

**Frequency Range 3:**

- >800 MHz to 3.5 GHz
ATC HIGH POWER RF RESISTIVE PRODUCTS

ATC's complete line of high power resistive products are designed and manufactured in our ISO-9001 registered facility. These products are manufactured with non-toxic, cost effective, aluminum nitride base substrates and qualified to MIL-PRF-55342, MIL-STD 202, and ANSI/J-STD-002 specifications.

ATC high power resistive products are suitable for many wireless and satellite communication applications including GSM, PCS, W-CDMA, 3G, WCS, ISM and Wireless LAN. Other applications include medical, industrial, military and aerospace applications. Typical circuit applications are splitter-combiner networks, power amplifiers, synthesizers, MRI coils, isolators and circulators.

DC and RF Specifications:
- Resistance value: 50 and 100 standard (10 to 200 available)
- Terminations: Typical VSWR from 1.05:1 to 1.20:1
- Resistors: Low parasitic capacitance (See catalog)
- Temperature Coefficient of Resistance (TCR) <150ppm/°C typical
- Operating temperature range: -55°C to +125°C

Mechanical Specifications:
- Substrate – Aluminum Nitride; Resistive Film – Tantalum Nitride; Terminals – Silver
- Flangeless and Flanged tabs – 100% silver leads; Covers – Alumina
- Copper flanges – Nickel or Silver plated
- Lead-Free, RoHS compliant

Non-magnetic products available

ATC RESISTOR SERIES

ATC CR Chip Resistors
- Power handling: 5 watts to 250 watts

ATC CS and CW Surface Mount Resistors
- Power handling: 2 watts to 40 watts

ATC LR Ledged Chip Resistors
- Power handling: 30 watts to 250 watts

ATC FR Flanged Resistors
- Power handling: 15 watts to 250 watts

ATC TERMINATION SERIES

ATC CT Series Chip Terminations
- Power handling: 5 watts to 225 watts

ATC CZ Series Surface Mount Terminations
- Power handling: 10 watts to 40 watts

ATC LT Series Ledged Terminations
- Power handling: 12 watts to 225 watts

ATC FT Series Flanged Terminations
- Power handling: 15 watts to 225 watts

ATC ATTENUATOR SERIES

ATC CA Series Chip Attenuators
- Power handling: up to 100 watts

ATC LA Series Ledged Attenuators
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ATC FA Series Flanged Attenuators
- Power handling: up to 100 watts

ATC MILLIMETER-WAVE / BROADBAND / ULTRA-BROADBAND SURFACE MOUNT CAPACITORS

ATC 545 L Series UBCTM Ultra-Broadband Capacitors
- Inductance Range: 4.7 nH @ 50 MHz to 15,000 nH @ 7.9 MHz
- Tolerances: G (±2%), J (±5%), K (±10%)

ATC 540 L Series Ultra-Broadband Capacitors
- Inductance Range: 8.8 nH @ 100 MHz to 1200 nH @ 35 MHz
- Tolerances: J (±5%), K (±10%)

ATC 530 L Series Broadband Capacitors
- Inductance Range: Low insertion loss and ultra-high self resonance surface mount millimeter-wave capacitors

ATC 520 L Series Surface Mount Capacitors
- 160 KHz to 16 GHz

ATC 515 L Series Surface Mount Capacitors
- 16 KHz to 20 GHz
**CAPACITORS** (page 12, 13, 14)

**ATC 100 SERIES PORCELAIN SUPERCHIP® MLCS**
These capacitors feature high Q, low ESR / ESL and ultra-stable performance. They are available with an encapsulation option as noted below.

**ATC 100 A (size = .055” x .055”)**
- Capacitance Range 0.1 pF to 100 pF

Non-magnetic products available
RoHS compliant terminations are standard.
Refer to data sheets for other styles.

**ATC 700 SERIES NPO PORCELAIN AND CERAMIC MLCS**
This series features low ESR / ESL, low noise, ultra-stable NPO performance, high self-resonance and rugged construction. Meets established reliability standards.

**ATC 700 A (size = .055” x .055”)**
- Capacitance Range 0.1 pF to 1000 pF

**ATC 600 SERIES ULTRA-LOW ESR HIGH Q MICROWAVE CAPACITORS**
Feature ultra-low ESR and high self-resonance. Environmentally safe terminations meet or exceed MIL-PRF-55681. Operating temperature is -55°C to +125°C

**ATC 600 L (size = 0402)**
- Capacitance Range 0.1 pF to 27 pF

**ATC 600 S (size = 0603)**
- Capacitance Range 0.1 pF to 100 pF
- Voltage Rating: 250 WVD

**ATC 600 F (size = 0805)**
- Capacitance Range 0.1 pF to 240 pF
- Voltage Rating: 250 WVD

**ATC 800 SERIES NPO CERAMIC HIGH RF POWER MLCS**
Advantages of these MLCs include optimized form factor, lowest ESR at wireless frequencies, highest self-resonance and superior thermal performance.

**ATC 800 A (size = .055” x .055”)**
- Capacitance Range 0.1 pF to 100 pF

**ATC 800 B (size = .110” x .110”)**
- Capacitance Range 0.1 pF to 10 pF

**ATC SINGLE LAYER CAPACITORS**
For applications with operating frequencies up to 100 GHz. Capacitance range 0.03 pF to 6200 pF; case sizes from 10 mils to 90 mils. “Design your own” option
(custom sizes.)

**ATC MILITARY (CDR) PRODUCTS**
ATC is a QPL approved supplier for MIL-PRF-55681/4 and /5 fixed, multilayer, unencapsulated, monolithic porcelain and ceramic dielectric capacitors.

**ATC COTS (COMMERCIAL OFF THE SHELF) PRODUCTS**
Cost-effective upscreening of standard products for enhanced reliability applications.

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**THIN FILM** (PAGE 16, 17)

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**ATC High Power RF Resistive Products**

ATC’s complete line of high powered resistive products are designed and manufactured in our ISO-9001 facility using non-toxic, cost effective, Aluminum Nitride base substrates. All products are manufactured and qualified to Mil-PRF-55342, MIL-STD 202, and ANSI J-STD-002 specifications. Leaded and flanged devices are available. Non-magnetic styles are available in CR, LR and FR Series. Please consult factory.

ATC High powered resistive products are used in all wireless & satellite communication applications. Communication bands include GSM, PCS, W-CDMA, 3G, WCS, ISM Wireless LAN. They are also used in medical, industrial, military and aerospace applications. Typical applications include splitter/combiner networks, power amplifiers, feed forward amplifiers, RF Generators, MRI devices, isolators & circulators.

**DC and RF Specifications:**

- **Resistance value:** 50 Ω and 100 Ω standard (10 Ω to 200 Ω available)
- **Terminations:** Typical VSWR (Voltage Standard Wave Ratio) 1.05:1 to 1.20:1
- **Resistors:** Low parasitic capacitance
- **Temperature Coefficient of Resistance**
- **Operating temperature range:** -55°C to +150°C
- **Frequency Range:** DC to 18 GHz

**Mechanical Specifications:**

- **Substrate** – Aluminum Nitride
- **Resistive Film** – Tantalum Nitride
- **Terminals** – Silver
- **Flangeless and Flanged tabs – 100% silver leads
- **Covers** – Alumina
- **Copper flanges** – Nickel or Silver plated
- **Lead-Free, RoHS compliant**

Visit ATC’s website for Leaded and Flanged devices.

**Order Resistive Product Design Kits Online at www.atceramics.com**

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### ATC CR Chip Resistors

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<thead>
<tr>
<th>Part Number</th>
<th>W ±0.01</th>
<th>L ±0.01</th>
<th>T ±005</th>
<th>A ±005</th>
<th>B (Typ.)</th>
<th>Capacitance (pF)</th>
<th>Power Max (Watts)</th>
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*xxxx denotes Ohm value

### ATC CT Chip Terminations

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<th>Part Number</th>
<th>W ±0.01</th>
<th>L ±0.01</th>
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<th>A ±005</th>
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<td>.020</td>
<td>DC to 4.0</td>
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<td>CT12525T0050G</td>
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<td>.45</td>
<td>.040</td>
<td>.130</td>
<td>.020</td>
<td>DC to 4.0</td>
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<td>CT12525T0050G</td>
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*xxxx denotes Ohm value

### ATC CS Surface Mount Chip Resistors

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<th>Part Number</th>
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<th>L ±0.01</th>
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<td>.95 pF</td>
<td>10</td>
</tr>
<tr>
<td>CS12525TxxxxG</td>
<td>.245</td>
<td>.45</td>
<td>.040</td>
<td>.120</td>
<td>.040</td>
<td>.110</td>
<td>1.85 pF</td>
<td>20</td>
</tr>
<tr>
<td>CS13725TxxxxG</td>
<td>.250</td>
<td>.375</td>
<td>.040</td>
<td>.120</td>
<td>.050</td>
<td>.195</td>
<td>3.0 pF</td>
<td>30</td>
</tr>
<tr>
<td>CS13737TxxxxG</td>
<td>.370</td>
<td>.370</td>
<td>.040</td>
<td>.360</td>
<td>.050</td>
<td>.35 pF</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

*xxxx denotes Ohm value

### ATC CW Surface Mount Chip Resistors

<table>
<thead>
<tr>
<th>Part Number</th>
<th>W ±0.01</th>
<th>L ±0.01</th>
<th>T ±005</th>
<th>WT ±005</th>
<th>LT ±005</th>
<th>Power Max (Watts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CW12010TxxxxG</td>
<td>.100</td>
<td>.200</td>
<td>.040</td>
<td>.090</td>
<td>.030</td>
<td>4</td>
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<tr>
<td>CW12525TxxxxG</td>
<td>.245</td>
<td>.45</td>
<td>.040</td>
<td>.120</td>
<td>.040</td>
<td>6</td>
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<td>CW13725TxxxxG</td>
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<td>.375</td>
<td>.040</td>
<td>.120</td>
<td>.050</td>
<td>8</td>
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<tr>
<td>CW13737TxxxxG</td>
<td>.370</td>
<td>.370</td>
<td>.040</td>
<td>.360</td>
<td>.050</td>
<td>10</td>
</tr>
</tbody>
</table>

*xxxx denotes Ohm value

### ATC CZ Surface Mount Chip Terminations

<table>
<thead>
<tr>
<th>Part Number</th>
<th>W ±0.01</th>
<th>L ±0.01</th>
<th>T ±005</th>
<th>LT ±005</th>
<th>LA ±005</th>
<th>VSWR (Typ.)</th>
<th>Power Max (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CZ12010T0050G</td>
<td>.100</td>
<td>.200</td>
<td>.040</td>
<td>.090</td>
<td>.115</td>
<td>1.25:1</td>
<td>10</td>
</tr>
<tr>
<td>CZ12010T0050G</td>
<td>.100</td>
<td>.200</td>
<td>.040</td>
<td>.090</td>
<td>.115</td>
<td>1.25:1</td>
<td>10</td>
</tr>
<tr>
<td>CZ12525T0050G</td>
<td>.245</td>
<td>.45</td>
<td>.040</td>
<td>.125</td>
<td>.170</td>
<td>1.25:1</td>
<td>20</td>
</tr>
<tr>
<td>CZ13725T0050G</td>
<td>.250</td>
<td>.375</td>
<td>.040</td>
<td>.125</td>
<td>.260</td>
<td>1.25:1</td>
<td>30</td>
</tr>
<tr>
<td>CZ13737T0050G</td>
<td>.370</td>
<td>.370</td>
<td>.040</td>
<td>.125</td>
<td>.275</td>
<td>1.25:1</td>
<td>40</td>
</tr>
</tbody>
</table>

*xxxx denotes Ohm value
ATC WL Series
Wire Wound Chip Inductors

ATC’s family of RF surface mount inductor components is intended to complement their high frequency ultra-low ESR capacitor products. The WL Series wire wound chip inductor products have been designed to provide excellent performance at competitive prices.

This Series includes the most widely used traditional EIA case sizes – 0402, 0603, 0805, 1008 and 1206. With an inductance range of 1 nH to 15,000 nH, these products have an operating temperature of -40°C to +125°C and a temperature coefficient of inductance (TCL) of +25 to +125 ppm/°C typical from -40°C to +125°C.

The WL inductor product line is intended for RF and microwave applications and features high self-resonant frequencies (SRF), high Q, and low DC resistance. These products are manufactured on a rugged core made of high quality ceramic material that exhibits high Q at high operating frequencies.

The WL Series is especially attractive for all 800 MHz to 3.4 GHz wireless applications where cost and performance are major factors. These applications include but are not limited to: cellular base stations, broadband wireless services, point-to-point and point-to-multipoint radio as well as other RF and microwave telecommunications systems.

All WL Series inductor products are supplied in tape and reel (2000 to 4000 parts per reel depending on case size) as standard, making them ideal for automated pick and place manufacturing applications. The terminations consist of a barrier layer with a lead-free, tin-plated finish that exhibits excellent solderability for trouble-free attachments.

<table>
<thead>
<tr>
<th>Case Code</th>
<th>Inductance Value Range (nH)</th>
<th>Tolerance Code</th>
<th>Q min. Range</th>
<th>SRF (MHz) typ.</th>
<th>RDC (Ohms) max.</th>
<th>IDC (mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0402</td>
<td>1.0 @ 250 MHz to 56 @ 250 MHz</td>
<td>J, K</td>
<td>16 to 25</td>
<td>&gt;6000</td>
<td>0.045</td>
<td>1360</td>
</tr>
<tr>
<td></td>
<td>1760</td>
<td>0.097</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0603</td>
<td>1.6 @ 250 MHz to 5.6 @ 250 MHz</td>
<td>J, K</td>
<td>16 to 40</td>
<td>12,500</td>
<td>0.040</td>
<td>700</td>
</tr>
<tr>
<td></td>
<td>5800</td>
<td>0.170</td>
<td>700</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5800</td>
<td>0.110</td>
<td>700</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0805</td>
<td>6.8 @ 250 MHz to 390 @ 100 MHz</td>
<td>J, K, G</td>
<td>16 to 80</td>
<td>900</td>
<td>4.350</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>7900</td>
<td>0.060</td>
<td>800</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4700</td>
<td>0.120</td>
<td>600</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>4200</td>
<td>0.100</td>
<td>600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>2.950</td>
<td>150</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1008</td>
<td>2.8 @ 250 MHz to 8.2 @ 250 MHz</td>
<td>J, K</td>
<td>15 to 65</td>
<td>4100</td>
<td>0.08</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td>1600</td>
<td>0.13</td>
<td>1000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1600</td>
<td>0.14</td>
<td>1000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>11.5</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Visit our website for individual values and specifications.

Order Inductor Design Kits Online at www.atceramics.com
**ATC Multilayer High Q RF Capacitors**

ATC 100 Series Porcelain Superchip® Multilayer Capacitors have been the industry standard for over 35 years, featuring one of the highest Qs in the industry, rugged porcelain construction, TCC of ±90 ppm/°C, and solderable SMT chip and leaded style terminations. **RoHS compliant terminations are standard. Refer to data sheets for other styles.** Order Design Kits online at www.atceramics.com

<table>
<thead>
<tr>
<th>ATC Series</th>
<th>Case Size</th>
<th>Cap Value Range (pF)*</th>
<th>Working Voltage WVDC (volts) max.</th>
<th>Dielectric Material</th>
<th>TCC -55°/+125°C (ppm/°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100A</td>
<td>.055 x .055 (1.40 x 1.40)</td>
<td>0.1 to 100</td>
<td>250</td>
<td>Porcelain (P90)</td>
<td>+90 ± 20</td>
</tr>
<tr>
<td>100B</td>
<td>.110 x .110 (2.79 x 2.79)</td>
<td>0.1 to 1000</td>
<td>1500</td>
<td>Porcelain (P90)</td>
<td>+90 ± 20</td>
</tr>
<tr>
<td>100C</td>
<td>.230 x .250 (5.84 x 6.35)</td>
<td>1 to 2700</td>
<td>2500</td>
<td>Porcelain (P90)</td>
<td>+90 ± 30</td>
</tr>
<tr>
<td>100E</td>
<td>.380 x .380 (9.65 x 9.65)</td>
<td>1 to 5100</td>
<td>7200</td>
<td>Porcelain (P90)</td>
<td>+90 ± 30</td>
</tr>
<tr>
<td>700A</td>
<td>.055 x .055 (1.40 x 1.40)</td>
<td>0.1 to 1000</td>
<td>250</td>
<td>Porcelain and Ceramic (NPO)</td>
<td>0 ± 30</td>
</tr>
<tr>
<td>700B</td>
<td>.110 x .110 (2.79 x 2.79)</td>
<td>0.1 to 5100</td>
<td>1500</td>
<td>Porcelain and Ceramic (NPO)</td>
<td>0 ± 30</td>
</tr>
<tr>
<td>700C</td>
<td>.230 x .250 (5.84 x 6.35)</td>
<td>1 to 2700</td>
<td>2500</td>
<td>Porcelain (NPO)</td>
<td>0 ± 30</td>
</tr>
<tr>
<td>700E</td>
<td>.380 x .380 (9.65 x 9.65)</td>
<td>1 to 2200</td>
<td>7200</td>
<td>Porcelain (NPO)</td>
<td>0 ± 30</td>
</tr>
<tr>
<td>600L</td>
<td>.040 x .020 (1.02 x .51)</td>
<td>0.1 to 27</td>
<td>200</td>
<td>Ultra-Low ESR, High Q (NPO)</td>
<td>0 ± 30</td>
</tr>
<tr>
<td>600S</td>
<td>.063 x .032 (1.60 x .81)</td>
<td>0.1 to 100</td>
<td>250</td>
<td>Ultra-Low ESR, High Q (NPO)</td>
<td>0 ± 30</td>
</tr>
<tr>
<td>600F</td>
<td>.079 x .049 (2.00 x 1.25)</td>
<td>0.1 to 240</td>
<td>250</td>
<td>Ultra-Low ESR, High Q (NPO)</td>
<td>0 ± 30</td>
</tr>
<tr>
<td>800A</td>
<td>.055 x .055 (1.40 x 1.40)</td>
<td>0.1 to 100</td>
<td>250</td>
<td>NPO Ceramic</td>
<td>0 ± 30</td>
</tr>
<tr>
<td>800B</td>
<td>.110 x .110 (2.79 x 2.79)</td>
<td>0.1 to 1000</td>
<td>500</td>
<td>NPO Ceramic</td>
<td>0 ± 30</td>
</tr>
<tr>
<td>200A</td>
<td>.055 x .055 (1.40 x 1.40)</td>
<td>510 to 10,000</td>
<td>50</td>
<td>BX Ceramic</td>
<td>±15%</td>
</tr>
<tr>
<td>200B</td>
<td>.110 x .110 (2.79 x 2.79)</td>
<td>5000 to 100,000</td>
<td>50</td>
<td>BX Ceramic</td>
<td>±15%</td>
</tr>
<tr>
<td>900C</td>
<td>.230 x .250 (5.84 x 6.35)</td>
<td>.01 µF to 1 µF</td>
<td>300</td>
<td>X7R Ceramic</td>
<td>±15%</td>
</tr>
</tbody>
</table>

---

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631-622-4700 • sales@atceramics.com

**ATC Europe**
+46 8 6800410 • sales@atceramics-europe.com

**ATC Asia**
+86-755-2396-8759 • sales@atceramics-asia.com
## ATC's products are supported by fully certified in-house RF and QA Labs with test capability from DC to Millimeter-wave Frequencies

### Standard Electrical Testing:
- Capacitors: Capacitance, Dissipation Factor, Dielectric Withstanding Voltage, Insulation Resistance
- Inductors: Inductance, Q, SRF, RDC, IDC
- Resistors: Resistance, RF Power, VSWR, Shunt Capacitance

### Hi-Reliability Testing (MIL-PRF-55681, MIL-PRF-123) and COTS Upscreening Program:
- Full Burn In and Life Test Capability
- Electrical, Environmental and Mechanical (MIL-STD-202, MIL-STD-883)

### Specialized RF Power Testing:
- High RF Power: CW and pulsed
- Thermal Characterization
- High RF Voltage: Corona, Internal and external breakdown, Partial discharge
- Specialized test fixtures designed in-house to support a full range of customer requirements

### Frequency Range: 2 MHz to 1 GHz

**POPULAR TEST FREQUENCIES: APPLICATIONS:**

- **13.56 MHz**
  - Semiconductor Manufacturing
- **64 MHz**
  - 1.5 Tesla MRI Systems
- **120 MHz**
  - 3 Tesla MRI Systems
- **1 GHz**
  - Telecommunications & Cellular Systems
- **ISM**
  - Unlicensed Wireless Devices

### Small Signal RF Testing:
- Equivalent Series Resistance (ESR) from 10 MHz to 2 GHz
- Impedance vs. Frequency: 1 MHz to 1.8 GHz
- S-Parameters: Four-receiver architecture, full two-port TRL calibration to 40 GHz

### Design Support For Capacitor, Inductor, & Resistive Products:
- Comprehensive electrical, mechanical and environmental data available
- S-Parameters
- Tech-Select™ RF Design Software
- Applications Support Team of Experienced RF Engineers

<table>
<thead>
<tr>
<th>ATC Series</th>
<th>Typical ESR (Ohms) Cap (pF)</th>
<th>Series Resonance (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cap (pF)</td>
<td>30 MHz</td>
<td>150 MHz</td>
</tr>
<tr>
<td>100A</td>
<td>1</td>
<td>0.170</td>
</tr>
<tr>
<td>100</td>
<td>10</td>
<td>0.067</td>
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<tr>
<td>100B</td>
<td>1</td>
<td>0.072</td>
</tr>
<tr>
<td>100C</td>
<td>10</td>
<td>0.139</td>
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<tr>
<td>100E</td>
<td>10</td>
<td>0.147</td>
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<td>700E</td>
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<td>0.147</td>
</tr>
<tr>
<td>600L</td>
<td>1</td>
<td>0.074</td>
</tr>
<tr>
<td>600S</td>
<td>1</td>
<td>0.072</td>
</tr>
<tr>
<td>600F</td>
<td>1</td>
<td>0.070</td>
</tr>
<tr>
<td>800A</td>
<td>10</td>
<td>0.040</td>
</tr>
<tr>
<td>800B</td>
<td>10</td>
<td>0.032</td>
</tr>
<tr>
<td>900C</td>
<td>1 µF</td>
<td>0.020</td>
</tr>
</tbody>
</table>
ATC Single Layer Capacitor Products

ATC’s extensive line of Single Layer Capacitor (SLC) products offers solutions to the most demanding microwave and millimeter wave requirements. Broadband applications with operating frequencies up to 100 GHz are achievable with ATC’s SLC products.

- Capacitance Range: 0.04 to 10,000 pF
- Wide selection of dielectrics with K’s of 14 to 25,000
- Ultra-high Q
- Up to 100 WVDC rating
- Standard case sizes from 10 mils.
- “Design Your Own” option
- Manufacturing facilities certified to ISO 9001
- Custom Design Kits available online at www.atceramics.com

Dielectric Codes

<table>
<thead>
<tr>
<th>Dielectric Code</th>
<th>Dielectric Const. (K)</th>
<th>TCC (-55°C to +125°C)</th>
<th>Cap. Range (pF)</th>
<th>Max. DF (%)* @ 1 MHz</th>
<th>Max. DF (%)* @ 1 KHz</th>
<th>Q</th>
<th>Q @ Freq.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC</td>
<td>±130</td>
<td>0 ±30 PPM/°C</td>
<td>0.04 to 5.6</td>
<td>0.03</td>
<td>11,000 @ 4.4 GHz</td>
<td>910 @ 4.5 GHz</td>
<td></td>
</tr>
<tr>
<td>DA</td>
<td>±200</td>
<td>0 ±30 PPM/°C</td>
<td>0.06 to 13</td>
<td>0.15</td>
<td>770 @ 5 GHz</td>
<td>500 @ 1.8 GHz</td>
<td></td>
</tr>
<tr>
<td>HC</td>
<td>±600</td>
<td>0 ±30 PPM/°C</td>
<td>0.1 to 27</td>
<td>0.15</td>
<td>29 @ 5 GHz</td>
<td>2310 @ 5 GHz</td>
<td></td>
</tr>
<tr>
<td>EA</td>
<td>±800</td>
<td>0 ±30 PPM/°C</td>
<td>0.15</td>
<td>-</td>
<td>100@ 5 GHz</td>
<td>500 @ 1.8 GHz</td>
<td></td>
</tr>
</tbody>
</table>

* Capacitance and DF are measured at 1MHz for capacitance values ≤ 1,000 pF and 1 KHz for capacitance values > 1,000 pF.

Applications/Markets

- Optoelectronics
- High speed data
- Sonet
- Broadband Wireless Communications
- Microwave/Millimeter-Wave

ATC 545 L, 530 L, 520 L, and 500 S Broadband SMT Capacitors

Best Broadband and Ultra-Broadband Options for Reliability and Widest Frequency Coverage.

Attributes

- SMT Broadband Devices
- Optoelectronics
- Low Insertion Loss
- High speed data
- Flat Frequency Response
- Sonet
- One Piece Construction

Applications/Markets

- Optoelectronics
- High speed data
- Sonet
- Broadband Wireless Communications
- Microwave/Millimeter-Wave

<table>
<thead>
<tr>
<th>ATC Series</th>
<th>Frequency Response</th>
<th>Insertion Loss</th>
<th>Capacitance</th>
<th>Voltage Ratings</th>
<th>Termination Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>545</td>
<td>16 KHz to 40+ GHz</td>
<td>&lt; 0.5dB</td>
<td>100 mF</td>
<td>16 V</td>
<td>RoHS/Tin-Lead/Gold</td>
</tr>
<tr>
<td>530</td>
<td>16 KHz to 18 GHz</td>
<td>1dB max.</td>
<td>100 mF</td>
<td>16 V</td>
<td>RoHS compatible</td>
</tr>
<tr>
<td>520</td>
<td>160 KHz to 16 GHz</td>
<td>1dB max.</td>
<td>10 mF</td>
<td>16 V</td>
<td>RoHS compatible</td>
</tr>
<tr>
<td>500</td>
<td>1 GHz to 40 GHz</td>
<td>0.1 pF to 10 pF</td>
<td>100 V</td>
<td>Gold</td>
<td></td>
</tr>
</tbody>
</table>

AMERICAN TECHNICAL CERAMICS

www.atceramics.com
ATC Power Capacitor Assemblies

ATC standard & custom Power Assemblies are fabricated from PARALLEL and SERIES combinations of industry-respected ATC catalog products. Customer requirements are addressed by a variety of computer matching and assembly techniques which have enabled ATC to extend voltage, current, ESR, Q, and tolerance parameters beyond what is normally available in the industry.

ATC Power Assemblies offer distinct advantages over purchasing standard components “in the general ballpark” and trying “hit & miss” approaches to configure & match these in a circuit environment. ATC’s strong tradition of quality and customer service enables us to work closely with design engineers to meet critical specifications.

Assemblies of parallel grouped capacitors not only increase the capacitance but will exhibit ultra-low ESR. Assemblies of series grouped capacitors will allow both tighter tolerances and higher working voltages. Combinations of Parallel and Series assemblies can realize an increase in both capacitance and voltage rating. Assemblies can be composed of multiple capacitors in horizontal, vertical or multi-level mounting configurations.

MATCHED SETS: SERIES OR PARALLEL CONFIGURATIONS

For customers requiring non-standard values or very close tolerance capacitance values, ATC can select a set of capacitors (2 or more) to achieve the desired results. Available tolerances appear in table at right.

VOLTAGE DIVIDERS: Voltage dividers based on capacitive reactance can be provided to customers’ specific capacitance ratio. Ratios can be provided within 1.0%.

ASSEMBLIES ARE DESIGNED TO MEET CUSTOMER NEEDS. ATC OFFERS THE FOLLOWING OPTIONS:

- Lead designs to customer specifications
- Non-magnetic assemblies for MRI applications
- Coatings to enhance high voltage operation
- Marking: Assemblies can be marked with ATC or customer part numbers
- Special Test Options (enhanced screening) for high reliability requirements: (a) Accelerated Life Testing and Voltage Conditioning: Individual parts are tested for 100 hours at elevated voltages and at 125° C. (b) Burn-in at elevated temperatures and voltages to insure reliability

### Series Capacitance Range Tolerance

<table>
<thead>
<tr>
<th>Series</th>
<th>Capacitance Range</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>100A/700A</td>
<td>1 pF to 6.2 pF 6.8 pF to 1000 pF</td>
<td>0.1 pF 0.5%</td>
</tr>
<tr>
<td>100B/700B</td>
<td>0.1 pF to 6.2 pF 6.8 pF to 5100 pF</td>
<td>0.1 pF 0.5%</td>
</tr>
<tr>
<td>100C</td>
<td>1 pF to 2700 pF</td>
<td>0.5%</td>
</tr>
<tr>
<td>100E</td>
<td>1 pF to 5100 pF</td>
<td>0.5%</td>
</tr>
</tbody>
</table>
ATC Custom Thin Film Circuits and Components

ATC brings a new standard of responsiveness and quality to thin film technology products. Custom metalization and patterned substrates are offered to address a broad spectrum of deposition and hybrid circuit fabrication requirements.

Custom metalization consists of sputtered and electroplated coatings made to specifications. Products may include via holes and odd shaped substrates in a wide choice of ceramics and dielectric materials. Three target, batch sputtering systems with load-locks are utilized for producing the most consistent film quality.
### Typical Metalizations

<table>
<thead>
<tr>
<th>Metalization</th>
<th>Application</th>
<th>Attachment Method</th>
<th>Metalization/Resistor Layers</th>
<th>Typical value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TaN – TiW – Au</td>
<td>RF/Microwave circuits: attenuators, loads and DC biasing networks. Hybrids with resistors and spiral inductors. End products: Power supplies, couplers, splitters, filters, amplifiers, SAW devices, laser diode mounts and others.</td>
<td>Pb/In, Au/Si, Au/Ge - Eutectic Epoxy Wire Bonding</td>
<td>TaN 25 to 100 ohms/sq. TiW 300 to 500 Å Au 20 to 300 μ&quot;</td>
<td>300 300 150</td>
</tr>
<tr>
<td>2. TiW – Au</td>
<td>Same as 1. - without resistors</td>
<td></td>
<td>TiW 300 to 500 Å Au 20 to 300 μ&quot;</td>
<td>300 150</td>
</tr>
<tr>
<td>3. TaN – TiW – Au – Ni – Au</td>
<td>Same as 1. - When repeated soldering is required for repairs</td>
<td>Pb/Sn, Au/Sn soldering Pb/Sn Eutectic Epoxy Wire Bonding</td>
<td>TaN 25 to 100 ohms/sq. TiW 300 to 500 Å Au 20 to 300 μ&quot; Ni 35 to 75 μ&quot; Au 20 to 100 μ&quot;</td>
<td>300 300 20 min. 35 min. 150</td>
</tr>
<tr>
<td>4. TiW – Cu – Ni* – Au</td>
<td>High Power/Low Loss RF and Power Supply</td>
<td>Pb/Sn, Au/Sn soldering Pb/Sn Eutectic Epoxy Wire Bonding</td>
<td>TiW 300 to 500 Å Cu 50 to 2000 μ&quot; Ni 35 to 75 μ&quot; Au 20 to 100 μ&quot;</td>
<td>300 500 35 min. 40 min.</td>
</tr>
<tr>
<td>5. TaN – TiW – Au Cu – Ni* – Au</td>
<td>High Power/Low Loss RF and Power Supply with Resistors</td>
<td>Pb/Sn soldering Epoxy Wire Bonding</td>
<td>TaN 25 to 100 ohms/sq. TiW 300 to 500 Å Au 3000 to 5000 Å Cu 50 to 2000 μ&quot; Ni 40 to 120 μ&quot; Au 20 to 100 μ&quot;</td>
<td>50 300 3000 min. 500 35 min. 40 min.</td>
</tr>
</tbody>
</table>

* Optional

For direct inquiries, technical information and quotations, please contact ATC’s Custom Thin Film Product Group at 904-726-3426, or tfsales@atceramics.com
NEW! ATC 100 A/B and 700 A/B MLCs
Extended Voltage Ratings to 1500 WVDC

ATC now offers 100A/B Porcelain Superchips® and 700A/B Porcelain and NPO Multilayer Capacitors with extended voltage ratings, providing the widest range of capacitance values with extended voltage ratings available.

<table>
<thead>
<tr>
<th>Capacitance Range</th>
<th>Standard WVDC</th>
<th>Extended WVDC</th>
<th>Capacitance Range</th>
<th>Standard WVDC</th>
<th>Extended WVDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 to 56 pF</td>
<td>150 WVDC</td>
<td>250 WVDC</td>
<td>0.1 to 47 pF</td>
<td>500 WVDC</td>
<td>1500 WVDC</td>
</tr>
<tr>
<td>62 to 100 pF</td>
<td>150 WVDC</td>
<td>200 WVDC</td>
<td>51 to 100 pF</td>
<td>500 WVDC</td>
<td>1000 WVDC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>110 to 200 pF</td>
<td>300 WVDC</td>
<td>1000 WVDC</td>
</tr>
</tbody>
</table>

NEW! ATC 800 Series High RF Power Multilayer Capacitors

- Optimized Form Factor
- Lowest ESR @ Wireless Frequencies
- Highest Self Resonance
- Rugged, Reliable NPO Dielectric

<table>
<thead>
<tr>
<th>Capacitance Range</th>
<th>Electrical Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 pF to 100 pF</td>
<td>Voltage Rating: Up to 250 WVDC</td>
</tr>
<tr>
<td></td>
<td>IR: 10^3 MΩ @ 25°C</td>
</tr>
</tbody>
</table>

ATC 545 L, 530 L, 520 L, and 500 S Broadband SMT Capacitors

Your best broadband and ultra-broadband options for reliability.

- Widest Frequency Coverage
- SMT Broadband Capacitors
- Ultra-Low Insertion Loss
- Flat Frequency Response

<table>
<thead>
<tr>
<th>ATC Series</th>
<th>Operating Frequency</th>
<th>Insertion Loss</th>
<th>Capacitance</th>
<th>Voltage Rating (WVDC)</th>
<th>Termination Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>545 L</td>
<td>16 KHZ to 40+ GHZ</td>
<td>&lt;0.5db</td>
<td>100 nF</td>
<td>16 V</td>
<td>Tin, Solder, Gold</td>
</tr>
<tr>
<td>530 L</td>
<td>16 KHZ to 18 GHZ</td>
<td>1db max.</td>
<td>100 nF</td>
<td>16 V</td>
<td>Tin</td>
</tr>
<tr>
<td>520 L</td>
<td>160 KHZ to 16 GHZ</td>
<td>1db max.</td>
<td>10 nF</td>
<td>16 V</td>
<td>Tin</td>
</tr>
<tr>
<td>500 S</td>
<td>1 GHZ to 40 GHZ</td>
<td>1db max.</td>
<td>0.1 pF to 10 pF</td>
<td>0.1 to 4.7 pF: 100 V</td>
<td>Platinum/Gold</td>
</tr>
</tbody>
</table>

ATC 600 Series Ultra-Low ESR, NPO, EIA MLCs

Excellent for RF and Microwave Transmit and Receive Wireless Applications

- Lowest ESR in Class
- Higher power handling capability
- Highest voltage rating in class for greater design margin
- High Self Resonance
- Reduces thermal noise (KTB) and improves signal to noise ratio (SNR) in receiver applications

<table>
<thead>
<tr>
<th>ATC Series</th>
<th>Operating Frequency</th>
<th>Insertion Loss</th>
<th>Capacitance</th>
<th>Voltage Rating (WVDC)</th>
<th>Termination Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>600 A/B</td>
<td>16 KHZ to 40+ GHZ</td>
<td>&lt;0.5db</td>
<td>100 nF</td>
<td>16 V</td>
<td>Tin, Solder, Gold</td>
</tr>
<tr>
<td>600 B/C</td>
<td>16 KHZ to 18 GHZ</td>
<td>1db max.</td>
<td>100 nF</td>
<td>16 V</td>
<td>Tin</td>
</tr>
<tr>
<td>600 D/E</td>
<td>160 KHZ to 16 GHZ</td>
<td>1db max.</td>
<td>10 nF</td>
<td>16 V</td>
<td>Tin</td>
</tr>
</tbody>
</table>

*Horizontal Mount for 500 S
ATC’s Design Support Software - New Enhanced 2008 Version

Tech Select is a design support tool that provides access to all electrical and mechanical parameters for ATC products. Included are Smith charts, S-Parameters, RF current and voltage, ESR, Q, impedances and more. RF parameters can be achieved at frequencies entered by the user.

By selecting and sorting on the most critical parameters this program generates a complete list of product options with part numbers. View and print datasheets for the selected products. Download size is 5.2 MB.

Tech-Select is compatible with the following operating systems: Windows 2000, XP and Vista.

These measurement-based models, available for selected ATC components, are both substrate and part-value scalable, and represent high-order resonant effects and accurate effective series resistance. Each model includes complete documentation detailing the test fixtures used, measurement conditions, range of validity, and model-to-measurement data comparisons.

100 A and 100 B Series S-Parameter Data
Scattering parameters of ATC Series A / B as well as 180 R Series Capacitors measured in vertical orientation on alumina. ‘Readme’ file provides details of measurement conditions

700 A and 700 B Series S-Parameter Data
Scattering parameters of ATC 700 Series A / B Series Capacitors measured in vertical orientation on alumina. ‘Readme’ file provides details of measurement conditions

600 L, 600 S and 600 F Series S-Parameter Data
Scattering parameters of ATC 600 Series Ultra-Low ESR Capacitors measured on Rogers R04350 softboard. ‘Readme’ file provides details of measurement conditions

NEW! 545 L Series UBC™ Ultra-Broadband and 530 L, 520 L and 500 S Series Broadband Capacitor S-Parameter Data
Measured on 10-mil thick Rogers R04350 microstrip board, with the exception of 500 S Capacitors which are measured on 25 mil alumina ‘Readme’ file provides details of measurement conditions

NEW! 800 A and 800 B Series S-Parameter Data
Scattering parameters of ATC 800 A / B Series Ultra-Low ESR Capacitors, measured on Rogers R04350 softboard. 800 A measured in horizontal and vertical orientation; 800 B measured in vertical orientation. ‘Readme’ file provides details of measurement conditions

WL Series Inductors S-Parameter Data
Scattering parameters of ATC WL Series Chip Inductors measured in horizontal orientation on Rogers R04350 softboard. ‘Readme’ file provides details of measurement conditions
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