ATC 200 B Series
BX Ceramic
Multilayer Capacitors

• Case B Size (.110" x .110")
• Capacitance Range 5000 pF to 0.1 µF
• Low ESR/ESL Mid-K
• Rugged Construction High Reliability
• Available with Encapsulation Option*

ATC, the industry leader, offers new improved ESR/ESL performance for the 200 B Series Capacitors. This Series exhibits high volumetric efficiency with superior IR characteristics. Ceramic construction provides a rugged, hermetic package.

ATC offers an encapsulation option for applications requiring extended protection against arc-over and corona.

Typical functional applications: Bypass, Coupling and DC Blocking.

Typical circuit applications: Switching Power Supplies and High Power Broadband Coupling.

*For leaded styles only.

ENVIROMENTAL TESTS

ATC 200 B Series Capacitors are designed and manufactured to meet and exceed the requirements of EIA-198, MIL-PRF-55681 and MIL-PRF-123.

THERMAL SHOCK:
MIL-STD-202, Method 107, Condition A.

MOISTURE RESISTANCE:

LOW VOLTAGE HUMIDITY:
MIL-STD-202, Method 103, Condition A, with 1.5 Volts DC applied while subjected to an environment of 85°C with 85% relative humidity for 240 hours min.

LIFETEST:

ELECTRICAL AND MECHANICAL SPECIFICATIONS

DISSIPATION FACTOR (DF): 2.5% max. @ 1 KHz

TEMPERATURE COEFFICIENT OF CAPACITANCE (TCC):
±15% maximum (-55°C to +125°C)

INSULATION RESISTANCE (IR):
5000 pF to 0.1 MFD:
10⁶ Megohms min. @ +25°C at rated WVDC.
10⁵ Megohms min. @ +125°C at rated WVDC.

WORKING VOLTAGE (WVDC):
See Capacitance Values Table, page 2.

DIELECTRIC WITHSTANDING VOLTAGE (DWV):
Case B: 250% of rated WVDC for 5 secs. (125 VDC)

AGING EFFECTS: 3% maximum per decade hour.

PIEZOELECTRIC EFFECTS: Negligible

DIELECTRIC ABSORPTION: 2% typical

OPERATING TEMPERATURE RANGE:
From -55°C to +125°C (No derating of working voltage).

TERMINATION STYLES:
Available in various surface mount and leaded styles.
See Mechanical Configurations, page 3.

TERMINAL STRENGTH:
Terminations for chips and pellets withstand a pull of 5 lbs. min., 15 lbs. typical, for 5 seconds in direction perpendicular to the termination surface of the capacitor. Test per MIL-STD-202, method 211.

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ATC 200 B Capacitance Values

<table>
<thead>
<tr>
<th>CAP. CODE</th>
<th>CAP. (pF)</th>
<th>TOL.</th>
<th>RATED WVDC</th>
<th>CAP. CODE</th>
<th>CAP. (pF)</th>
<th>TOL.</th>
<th>RATED WVDC</th>
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</thead>
<tbody>
<tr>
<td>502</td>
<td>5000</td>
<td></td>
<td></td>
<td>273</td>
<td>27,000</td>
<td></td>
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<tr>
<td>562</td>
<td>5600</td>
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<td>682</td>
<td>6800</td>
<td></td>
<td></td>
<td>393</td>
<td>39,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>822</td>
<td>8200</td>
<td></td>
<td></td>
<td>473</td>
<td>47,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>103</td>
<td>10,000</td>
<td>K, M, N</td>
<td>50</td>
<td>503</td>
<td>50,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>123</td>
<td>12,000</td>
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<td>563</td>
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</tr>
<tr>
<td>153</td>
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<td></td>
<td>683</td>
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</tr>
<tr>
<td>183</td>
<td>18,000</td>
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<td>823</td>
<td>82,000</td>
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<tr>
<td>203</td>
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<td>104</td>
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<tr>
<td>223</td>
<td>22,000</td>
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</tbody>
</table>

VRMS = 0.707 x WVDC

* SPECIAL VALUES, TOLERANCES, HIGHER WVDC AND MATCHING AVAILABLE. * ENCAPSULATION OPTION AVAILABLE. PLEASE CONSULT FACTORY.

CAPACITANCE TOLERANCE

<table>
<thead>
<tr>
<th>Code</th>
<th>Tol.</th>
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<tbody>
<tr>
<td>K</td>
<td>±10%</td>
</tr>
<tr>
<td>M</td>
<td>±20%</td>
</tr>
<tr>
<td>N</td>
<td>±30%</td>
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</tbody>
</table>

ATC PART NUMBER CODE

Series
Case Size
Capacitance Code: First 2 significant digits for capacitance.
Indicates number of zeros following digits of capacitance in picofarads except for decimal values.
Capacitance Tolerance
Termination Code
Packaging
T - Tape and Reel, 1000 pc. qty.*
TV - Vertical Orientation of Product, Tape and Reel, 1000 pc. qty.*
C - ATC Cap-Pac®, 100 pc. qty std.*
I - Special Packaging. Consult Factory.
*Laser Marking
*Consult ATC for other quantities
WVDC

The above part number refers to a 200 B Series (case size B) 8200 pF capacitor, M tolerance (±20%), 50 WVDC, with W termination (Tin/Lead, Solder Plated over Nickel Barrier), laser marking and ATC Cap-Pac® 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.
### ATC 200 B Capacitors: Mechanical Configurations

<table>
<thead>
<tr>
<th>ATC SERIES &amp; CASE SIZE</th>
<th>ATC TERM. CODE</th>
<th>CASE SIZE &amp; TYPE</th>
<th>OUTLINES W/T IS A TERMINATION SURFACE</th>
<th>BODY DIMENSIONS INCHES (mm)</th>
<th>LEAD AND TERMINATION DIMENSIONS AND MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>200B</td>
<td>W</td>
<td>B Solder Plate</td>
<td>![200B W B Solder Plate Diagram]</td>
<td>.110 +.020 -.010 (2.79 +.51 -0.25)</td>
<td>.110 ±.015 (2.79 ±.38)</td>
</tr>
<tr>
<td>200B</td>
<td>P</td>
<td>B Pellet</td>
<td>![200B P B Pellet Diagram]</td>
<td>.110 +.035 -.010 (2.79 +.89 -0.25)</td>
<td>.110 ±.015 (2.79 ±.38)</td>
</tr>
<tr>
<td>200B</td>
<td>T</td>
<td>B Solderable Nickel Barrier</td>
<td>![200B T B Solderable Nickel Barrier Diagram]</td>
<td>.110 +.020 -.010 (2.79 +.51 -0.25)</td>
<td>.110 ±.015 (2.79 ±.38)</td>
</tr>
<tr>
<td>200B</td>
<td>CA</td>
<td>B Gold Chip</td>
<td>![200B CA B Gold Chip Diagram]</td>
<td>.110 +.020 -.010 (2.79 +.51 -0.25)</td>
<td>.110 ±.015 (2.79 ±.38)</td>
</tr>
</tbody>
</table>

### Additional Lead Styles Available:
- Narrow Microstrip (NM)
- Narrow Axial Ribbon (NA)
- Vertical Narrow Microstrip (H)

All leads are high purity silver attached with high temperature solder and are RoHS compliant. For a complete military catalog, request American Technical Ceramics document ATC 001-818.

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## ATC 200 B Capacitors: Non-Magnetic Mechanical Configurations

### OUTLINES

<table>
<thead>
<tr>
<th>ATC SERIES &amp; CASE SIZE</th>
<th>ATC TERM. CODE</th>
<th>CASE SIZE &amp; TYPE</th>
<th>W/T IS A TERMINATION SURFACE</th>
<th>BODY DIMENSIONS INCHES (mm)</th>
<th>LEAD AND TERMINATION MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LENGTH (L)</td>
<td>WIDTH (W)</td>
</tr>
<tr>
<td>200B</td>
<td>WN</td>
<td>B Non-Mag Solder Plate</td>
<td>Y L T W</td>
<td>.110 +.025 -.010 (2.79 +0.64 -0.25)</td>
<td>.110 ±0.015 (2.79 ±0.38)</td>
</tr>
<tr>
<td>200B</td>
<td>PN</td>
<td>B Non-Mag Pellet</td>
<td>Y L T W</td>
<td>.110 +.035 -.010 (2.79 +0.89 -0.25)</td>
<td>.110 ±0.015 (2.79 ±0.38)</td>
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<tr>
<td>200B</td>
<td>TN</td>
<td>B Non-Mag Solderable Barrier</td>
<td>Y L T W</td>
<td>.110 +.025 -.010 (2.79 +0.64 -0.25)</td>
<td>.110 ±0.015 (2.79 ±0.38)</td>
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<tr>
<td>200B</td>
<td>MN</td>
<td>B Non-Mag Microstrip</td>
<td>Y L T W</td>
<td>.120 (3.05) max.</td>
<td>.120 (3.05) max.</td>
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<tr>
<td>200B</td>
<td>AN</td>
<td>B Non-Mag Axial Ribbon</td>
<td>Y L T W</td>
<td>.135 ±0.015 (3.43 ±0.38)</td>
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<tr>
<td>200B</td>
<td>FN</td>
<td>B Non-Mag Radial Ribbon</td>
<td>Y L T W</td>
<td>.110 ±0.015 (2.79 ±0.38)</td>
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<tr>
<td>200B</td>
<td>RN</td>
<td>B Non-Mag Radial Wire</td>
<td>Y L T W</td>
<td>.145 ±0.020 (3.68 ±0.51)</td>
<td>N/A</td>
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<tr>
<td>200B</td>
<td>BN</td>
<td>B Non-Mag Axial Wire</td>
<td>Y L T W</td>
<td>N/A</td>
<td>N/A</td>
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</tbody>
</table>

Additional lead styles available: Narrow Microstrip (DN), Narrow Axial Ribbon (GN) and Vertical Narrow Microstrip (HN). Other lead lengths are available; consult factory. All leads are high purity silver attached with high temperature solder and are RoHS compliant.

### Suggested Mounting Pad Dimensions

**Case B Vertical Mount**

<table>
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</thead>
<tbody>
<tr>
<td>All values</td>
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</tr>
<tr>
<td>Normal</td>
<td>.120</td>
<td>.050</td>
<td>.075</td>
<td>.175</td>
</tr>
<tr>
<td>High Density</td>
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<td>.030</td>
<td>.075</td>
<td>.135</td>
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**Horizontal Mount**

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</thead>
<tbody>
<tr>
<td>All values</td>
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</tr>
<tr>
<td>Normal</td>
<td>.130</td>
<td>.050</td>
<td>.075</td>
<td>.175</td>
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<td>.030</td>
<td>.075</td>
<td>.135</td>
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ATC 200 B Performance Data

The current rating is based on a 65°C mounting surface and a device thermal resistance of 20°C/W. A power dissipation of 3W will result in a case temperature of 125°C.