ATC 800 H Series
NPO Ceramic
High RF Power Multilayer Capacitors

• Case H Size (.720” x .740”)
• High Q
• Ultra Low ESR
• High RF Power
• 8000 WVDC
• Capacitance Range:
  100 pF to 20,000 pF

ATC’s 800 H Series offers superb performance in demanding high RF power applications requiring consistent and reliable operation. The combination of highly conductive metal electrode systems, optimized case geometries, and proprietary dielectrics, yields the lowest ESR. ATC’s new NPO low loss rugged dielectrics are designed to provide superior heat transfer in high RF power applications. Ultra-low ESR and superior thermal performance ensure that the 800 H Series products are your best choice for high RF power and High CV applications.

Typical functional applications: Bypass, Coupling, Tuning, Impedance Matching and DC Blocking

Typical circuit applications: HF/RF Power Amplifiers, Transmitters, Antenna Tuning, Plasma Chambers, Induction Charging Systems, Medical (MRI coils) and Inductive Heating.

ENVIRONMENTAL TESTS

ATC 800 H 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:
MIL-STD-202, Method 106

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.

LIFE TEST:
MIL-STD-202, Method 108, for 2000 hours, at 125°C at rated voltage.

ELECTRICAL AND MECHANICAL SPECIFICATIONS

QUALITY FACTOR (Q):
Greater than 5000 (100 pF to 1000 pF) @ 1 MHz.
Greater than 5000 (1100 pF to 20,000 pF) @ 1 KHz.

TEMPERATURE COEFFICIENT OF CAPACITANCE (TCC):
0 ±30 PPM/°C (-55°C to +125°C)

INSULATION RESISTANCE (IR):
10^5 Megohms min. @ +25°C at 500 VDC
10^4 Megohms min. @ +125°C at 500 VDC
Max. test voltage is 500 VDC.

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

DIELECTRIC WITHSTANDING VOLTAGE (DWV):
120% of WVDC for 5 seconds.

RETRACE:
Less than ±(0.02% or 0.02 pF), whichever is greater

AGING EFFECTS: None

PIEZOELECTRIC EFFECTS: None
(No capacitance variation with voltage or pressure)

CAPACITANCE DRIFT:
±(0.02% or 0.02 pF), whichever is greater

OPERATING TEMPERATURE RANGE:
From -55°C to +125°C

TERMINATION STYLE:
See Mechanical Configurations, page 2

TERMINAL STRENGTH:
Terminations for chips withstand a pull of 12 lbs. min., 20 lbs. typical, for 5 seconds in direction perpendicular to the termination surface of the capacitor. Test per MIL-STD-202, method 211.
# ATC 800 H 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>
<th>CAP. CODE</th>
<th>CAP. (pF)</th>
<th>TOL.</th>
<th>RATED WVDC</th>
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<td>682</td>
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</table>

SPECIAL VALUES, TOLERANCES AND MATCHING AVAILABLE. PLEASE CONSULT FACTORY.

## ATC PART NUMBER CODE

- **Series**: ATC800
- **Case Size**: H
- **Capacitance Code**: First 2 significant digits for capacitance. 
  - R = Decimal Point
  - Indicates number of zeros following digits of capacitance in picofarads except for decimal values.
- **Termination Code**: MN Non-Magnetic termination (Microstrip Termination), Laser marking and plastic Matrix Tray packaging.

## ATC 800 H Non-Magnetic 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</th>
<th>BODY DIMENSIONS INCHES (mm)</th>
<th>LEAD AND TERMINATION DIMENSIONS AND MATERIALS</th>
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<tbody>
<tr>
<td>800 H</td>
<td>MN</td>
<td>H Microstrip</td>
<td>W/T IS A TERMINATION SURFACE</td>
<td>LENGTH (L)</td>
<td>WIDTH (W)</td>
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<td>W/T IS A TERMINATION SURFACE</td>
<td>.220 (.569)</td>
<td>max.</td>
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</table>

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

Consult factory for additional performance data.

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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 more information, visit [www.atceramics.com](http://www.atceramics.com)

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2 [www.atceramics.com](http://www.atceramics.com)
ATC 800 H Performance Data

800 H ESR vs. Frequency

800 H FPR vs. Capacitance

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The current rating is based on a 65 °C mounting surface with a device thermal resistance of 8.6 °CW. A power dissipation of 7 W will result in a case temperature of 125 °C.

800 H Capacitance Change vs. Temperature

800 H Current vs Capacitance

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