

# ATC 200 B Series BX Ceramic Multilayer Capacitors

- Case B Size (.110" x .110")
- Capacitance Range 5000 pF to 0.1  $\mu$ F
- Low ESR/ESL
- Mid-K
- Rugged Construction
- High Reliability
- Extended WVDC Available

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.

Typical functional applications: Bypass, Coupling and DC Blocking.

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

## ENVIRONMENTAL 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:

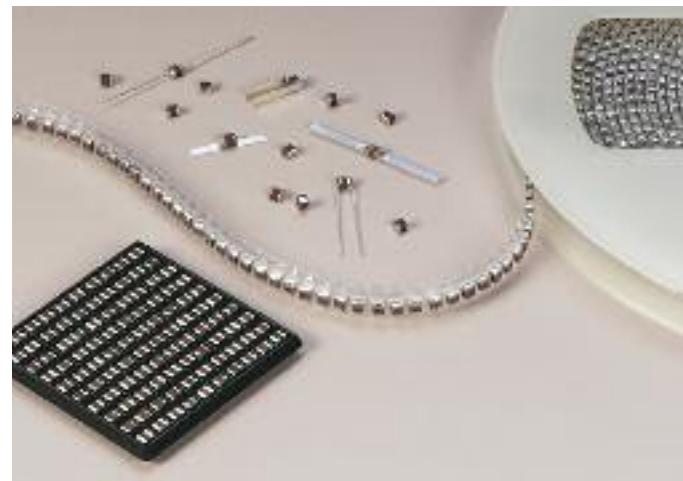
MIL-STD-202, Method 106.

### 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. 200% WVDC applied.



## 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 MF<sub>d</sub>:  
 $10^4$  Megohms min. @ +25°C at rated WVDC.  
 $10^3$  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 # 001-812 Rev. N, 11/15

# ATC 200 B Capacitance Values

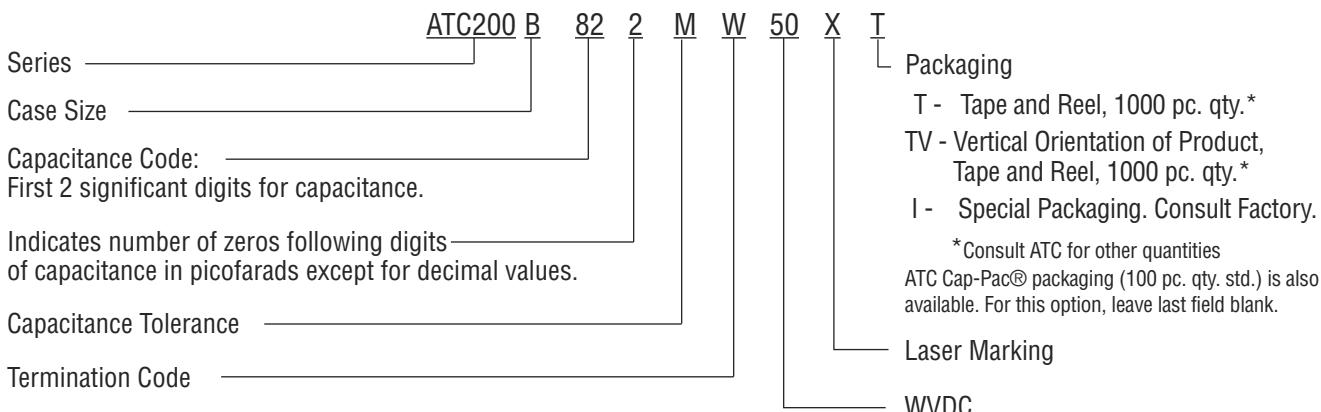
CAP. CODE	CAP. (pF)	TOL.	RATED WVDC	CAP. CODE	CAP. (pF)	TOL.	RATED WVDC
502	5000			273	27,000		
562	5600			333	33,000		
682	6800			393	39,000		
822	8200			473	47,000		
103	10,000	K, M, N	50	503	50,000	K, M, N	50
123	12,000			563	56,000		
153	15,000			683	68,000		
183	18,000			823	82,000		
203	20,000			104	100,000		
223	22,000						

$$VRMS = 0.707 \times WVDC$$

- SPECIAL VALUES, TOLERANCES, HIGHER WVDC AND MATCHING AVAILABLE.  
PLEASE CONSULT FACTORY.

CAPACITANCE TOLERANCE			
Code	K	M	N
Tol.	±10%	±20%	±30%

## ATC PART NUMBER CODE



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.

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# ATC 200 B Capacitors: Mechanical Configurations

ATC SERIES & CASE SIZE	ATC TERM. CODE	CASE SIZE & TYPE	OUTLINES W/T IS A TERMINATION SURFACE	BODY DIMENSIONS INCHES (mm)			LEAD AND TERMINATION DIMENSIONS AND MATERIALS	
				LENGTH (L)	WIDTH (W)	THICKNESS (T)	OVERLAP (Y)	MATERIALS
200B	W	B Solder Plate		.110 +.020 -.010 (2.79 +0.51 -0.25)	.110 ±.015 (2.79 ±0.38)			Tin/Lead, Solder Plated over Nickel Barrier Termination
200B	P	B Pellet		.110 +.035 -.010 (2.79 +0.89 -0.25)	.110 ±.015 (2.79 ±0.38)		.015 (0.38) +.010 (0.25)	Heavy Tin/Lead Coated, over Nickel Barrier Termination
200B	T	B Solderable Nickel Barrier		.110 +.020 -.010 (2.79 +0.51 -0.25)	.110 ±.015 (2.79 ±0.38)			<b>RoHS Compliant</b> Tin Plated over Nickel Barrier Termination
200B	CA	B Gold Chip		.110 +.020 -.010 (2.79 +0.51 -0.25)	.110 ±.015 (2.79 ±0.38)			<b>RoHS Compliant</b> Gold Plated over Nickel Barrier Termination
200B	MS	B Microstrip				.120 (3.05) max.		Length (L <sub>L</sub> )
200B	AR	B Axial Ribbon				.135 ±.015 (3.43 ±0.38)		Width (W <sub>L</sub> )
200B	RR	B Radial Ribbon				.110 ±.015 (2.79 ±0.38)	N/A	Thickness (T <sub>L</sub> )
200B	RW	B Radial Wire				.145 ±.020 (3.68 ±0.51)		
200B	AW	B Axial Wire						#26 AWG., .016 (.406) dia. nominal

Additional lead styles available: Narrow Microstrip (NM), Narrow Axial Ribbon (NA) and Vertical Narrow Microstrip (H). Other lead lengths are available; consult factory. 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

ATC SERIES & CASE SIZE	ATC TERM. CODE	CASE SIZE & TYPE	OUTLINES W/T IS A TERMINATION SURFACE	BODY DIMENSIONS INCHES (mm)			LEAD AND TERMINATION DIMENSIONS AND MATERIALS	
				LENGTH (L)	WIDTH (W)	THICKNESS (T)	OVERLAP (Y)	MATERIALS
200B	WN	B Non-Mag Solder Plate		.110 +.025 -.010 (2.79 +0.64 -0.25)	.110 ±.015 (2.79 ±0.38)			Tin/Lead, Solder Plated over Non-Magnetic Barrier Termination
200B	PN	B Non-Mag Pellet		.110 +.035 -.010 (2.79 +0.89 -0.25)	.110 ±.015 (2.79 ±0.38)	.102 (2.59) max.	.015 (0.38) ±.010 (0.25)	Heavy Tin/Lead Coated, over Non-Magnetic Barrier Termination
200B	TN	B Non-Mag Solderable Barrier		.110 +.025 -.010 (2.79 +0.64 -0.25)	.110 ±.015 (2.79 ±0.38)			<b>RoHS Compliant</b> Tin Plated over Non-Magnetic Barrier Termination
200B	MN	B Non-Mag Microstrip				.120 (3.05) max.		Length (L <sub>L</sub> )
200B	AN	B Non-Mag Axial Ribbon			.135 ±.015 (3.43 ±0.38)			Width (W <sub>L</sub> )
200B	FN	B Non-Mag Radial Ribbon			.110 ±.015 (2.79 ±0.38)	.100 (2.54) max.	N/A	Thickness (T <sub>L</sub> )
200B	RN	B Non-Mag Radial Wire			.145 ±.020 (3.68 ±0.51)			
200B	BN	B Non-Mag Axial Wire						#26 AWG., .016 (.406) dia. nominal

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 A				
		Pad Size	A Min.	B Min.	C Min.	D Min.
Vertical Mount	Normal		.070	.050	.030	.130
	High Density		.050	.030	.030	.090
Horizontal Mount	Normal		.080	.050	.030	.130
	High Density		.060	.030	.030	.090

Dimensions are in inches.

A M E R I C A N   T E C H N I C A L   C E R A M I C S

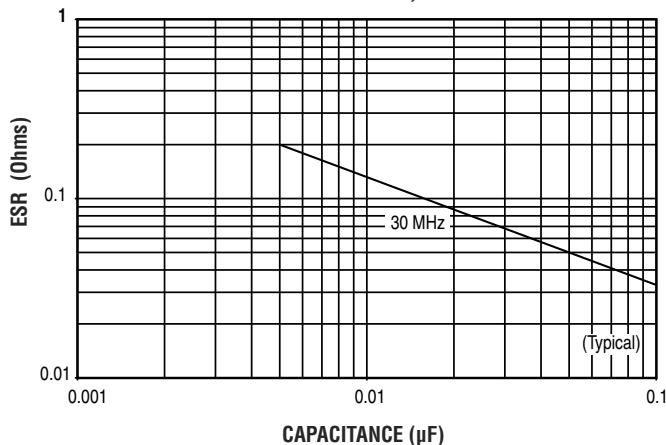
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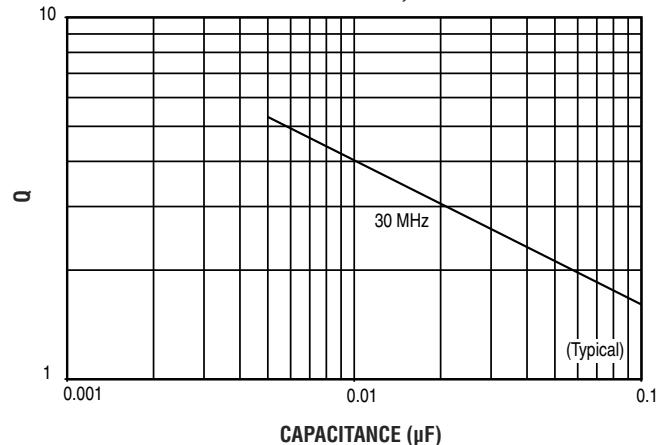
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# ATC 200 B Performance Data

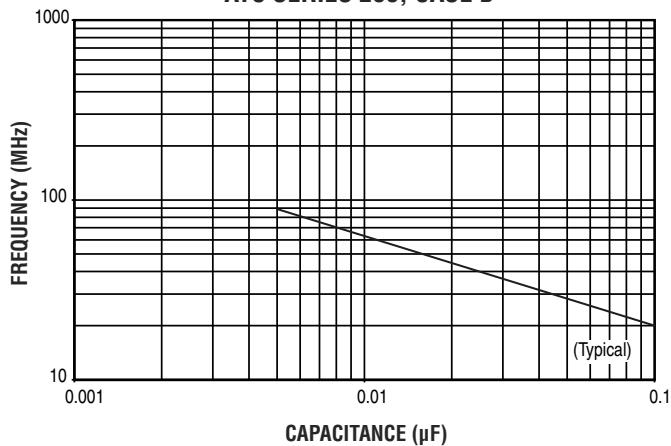
ESR VS. CAPACITANCE  
ATC SERIES 200, CASE B



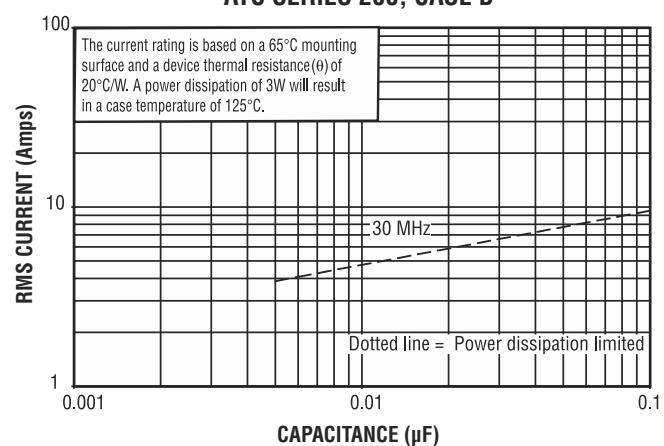
Q VS. CAPACITANCE  
ATC SERIES 200, CASE B



SERIES RESONANCE VS. CAPACITANCE  
ATC SERIES 200, CASE B



CURRENT RATING VS. CAPACITANCE  
ATC SERIES 200, CASE B



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