

# 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:

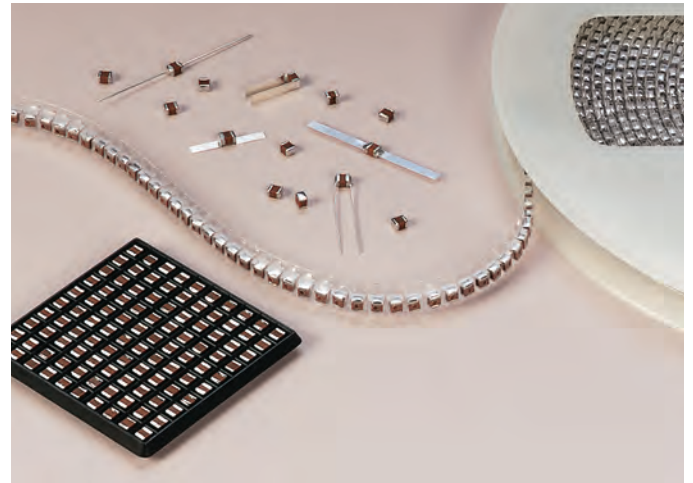
MIL-STD-202, Method 106.

### 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):**  $\pm$ 15% maximum (-55°C to +125°C)

### INSULATION RESISTANCE (IR):

5000 pF to 0.1 MFd:

10<sup>4</sup> Megohms min. @ +25°C at rated WVDC.

10<sup>3</sup> 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.

**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.



**AMERICAN**

ATC North America

sales@atceramics.com

**TECHNICAL**

ATC Europe

saleseur@atceramics.com

**CERAMICS**

ATC Asia

sales@atceramics-asia.com



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**www.atceramics.com**

ATC # 001-812 Rev. O, 7/20

# ATC 200 B Capacitance Values

CAP. CODE	CAP. (pF)	TOL.	RATED WVDC		CAP. CODE	CAP. (pF)	TOL.	RATED WVDC	
			STD.	EXT.*				STD.	EXT.*
502	5000	K, M, N	50	100	273	27,000	K, M, N	50	100
562	5600				333	33,000			
682	6800				393	39,000			
822	8200				473	47,000			
103	10,000				503	50,000			
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								

$VRMS = 0.707 \times WVDC$

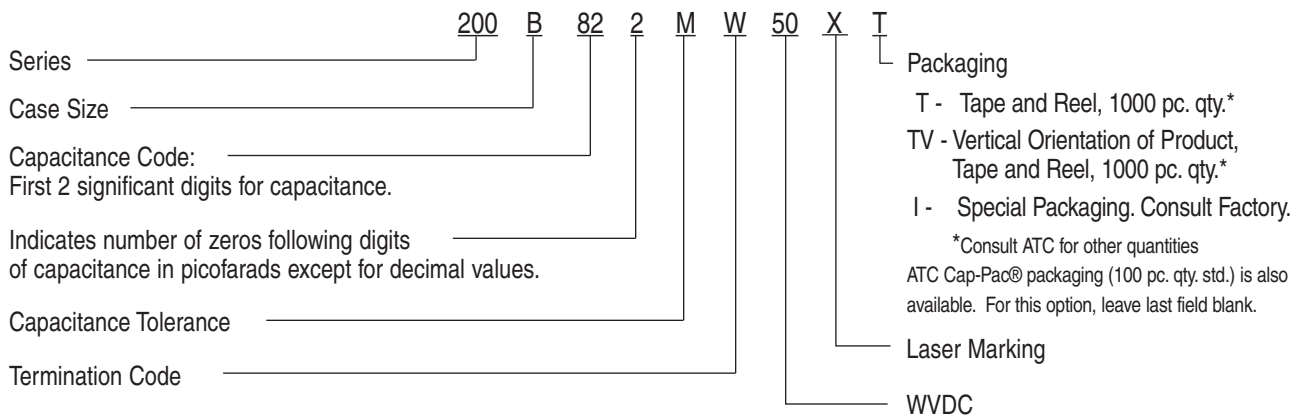
• SPECIAL VALUES, TOLERANCES, HIGHER WVDC AND MATCHING AVAILABLE.  
PLEASE CONSULT FACTORY.

\* Extended WVDC offering meets X7R characteristics

## 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.

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

Consult factory for additional performance data.


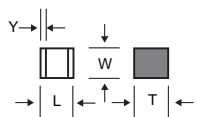

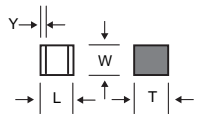

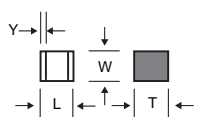

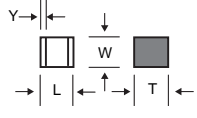



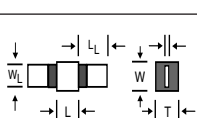

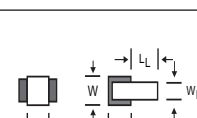

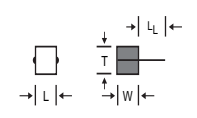

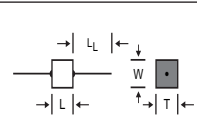
A M E R I C A N T E C H N I C A L C E R A M I C S

ATC North America  
sales@atceramics.com

ATC Europe  
sales@atceramics.com

ATC Asia  
sales@atceramics-asia.com

# 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)	.102 (2.59) max.	.015 (0.38) ±.010 (0.25) max.	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)	.102 (2.59)		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)	.102 (2.59)		<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)	.102 (2.59)		<b>RoHS Compliant</b> Gold Plated over Nickel Barrier Termination		
200B	MS	B  Microstrip		.135 ±.015 (3.43 ±0.38)	.110 ±.015 (2.79 ±0.38)	.120 (3.05) max.	N/A	Length (L <sub>L</sub> )	Width (W <sub>L</sub> )	Thickness (T <sub>L</sub> )
200B	AR	B  Axial Ribbon				.250 (6.35) min.		.093 ±.005 (2.36 ± 0.13)	.004 ± .001 (.102 ± .025)	
200B	RR	B  Radial Ribbon				.145 ±.020 (3.68 ±0.51)		.100 (2.54) max.	.500 (12.7)	#26 AWG., .016 (.406) dia. nominal
200B	RW	B  Radial Wire								
200B	AW	B  Axial Wire								

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.

# ATC 200 B Capacitors: Non-Magnetic Mechanical Configurations

ATC SERIES & CASE SIZE	ATC TERM. CODE	MIL-PRF-55681	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	Meets Requirements	B Non-Mag Solder Plate		.110+.025 -.010 (2.79 +0.64 -0.25)	.110 ±.015 (2.79 ±0.38)	.102 (2.59) max..	.015 (0.38) ±.010 (0.25)	Tin/Lead, Solder Plated over Non-Magnetic Barrier Termination					
200B	PN	Meets Requirements	B Non-Mag Pellet		.110+.035 -.010 (2.79 +0.89 -0.25)	.110 ±.015 (2.79 ±0.38)			Heavy Tin/Lead, Coated over Non-Magnetic Barrier Termination					
200B	TN	Meets Requirements	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	Meets Requirements	B Non-Mag Microstrip		.135 ±.015 (3.43 ±0.38)	.110 ±.015 (2.79 ±0.38)	.120 (3.05) max.	N/A	Length (L <sub>L</sub> )	Width (W <sub>L</sub> )	Thickness (T <sub>L</sub> )			
200B	AN	Meets Requirements	B Non-Mag Axial Ribbon						.250 (6.35) (6.35) min.	.093 ± .005 (2.36 ± 0.13)	.004 ± .001 (.102 ± .025)			
200B	FN	Meets Requirements	B Non-Mag Radial Ribbon						.145 ±.020 (3.68 ±0.51)	.100 (2.54) max.	N/A	.500 (12.7) min.	#26 AWG., .016 (.406) dia. nominal	
200B	RN	Meets Requirements	B Non-Mag Axial Wire		.145 ±.020 (3.68 ±0.51)	.100 (2.54) max.	N/A	.500 (12.7) min.					#26 AWG., .016 (.406) dia. nominal	
200B	BN	Meets Requirements	B Non-Mag Radial Wire											

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

Horizontal  
Electrode Orientation

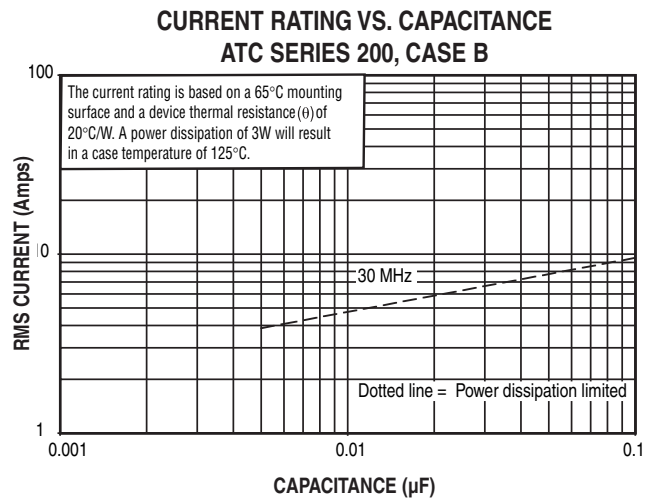
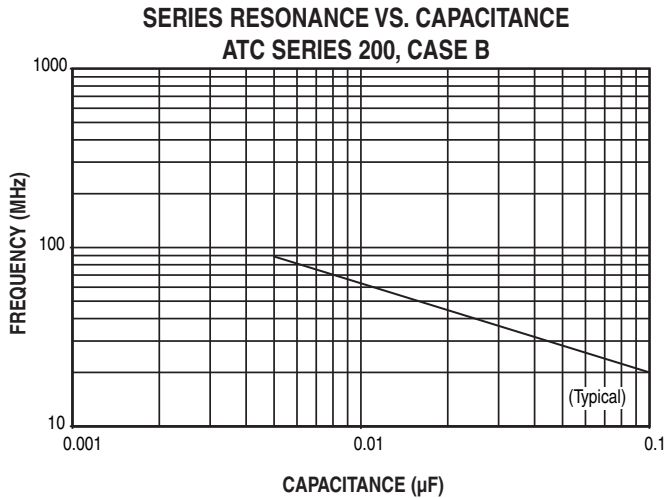
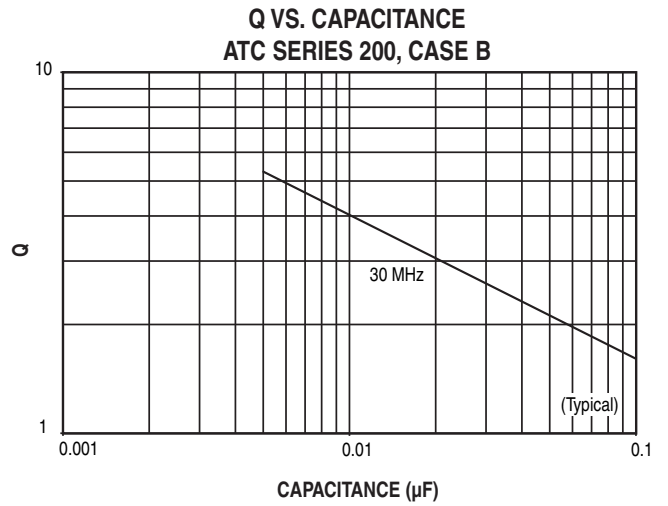
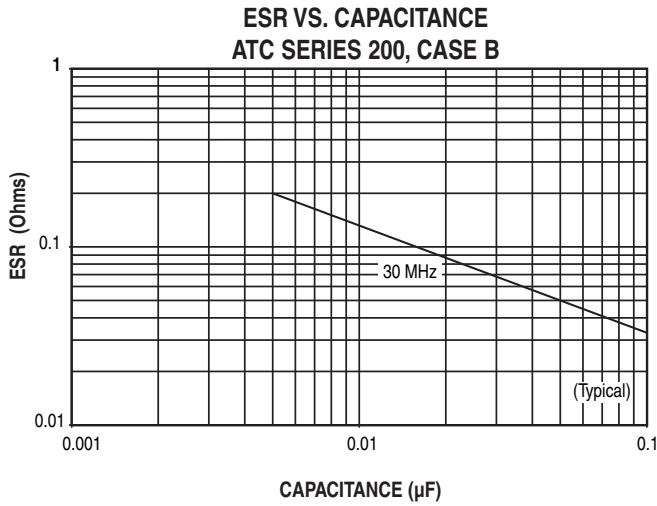
Vertical  
Electrode Orientation

	Pad Size	A Min.	B Min.	C Min.	D Min.
All values	Normal	.120	.050	.075	.175
	High Density	.100	.030	.075	.135

Horizontal Mount					
	Pad Size	A Min.	B Min.	C Min.	D Min.
All values	Normal	.130	.050	.075	.175
	High Density	.110	.030	.075	.135

# ATC 200 B Performance Data



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

ATC North America  
sales@atceramics.com

ATC Europe  
sales@atceramics.com

ATC Asia  
sales@atceramics-asia.com

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**AMERICAN**  
ATC North America  
[sales@atceramics.com](mailto:sales@atceramics.com)

**TECHNICAL**  
ATC Europe  
[saleseur@atceramics.com](mailto:saleseur@atceramics.com)

**CERAMICS**  
ATC Asia  
[sales@atceramics-asia.com](mailto:sales@atceramics-asia.com)



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