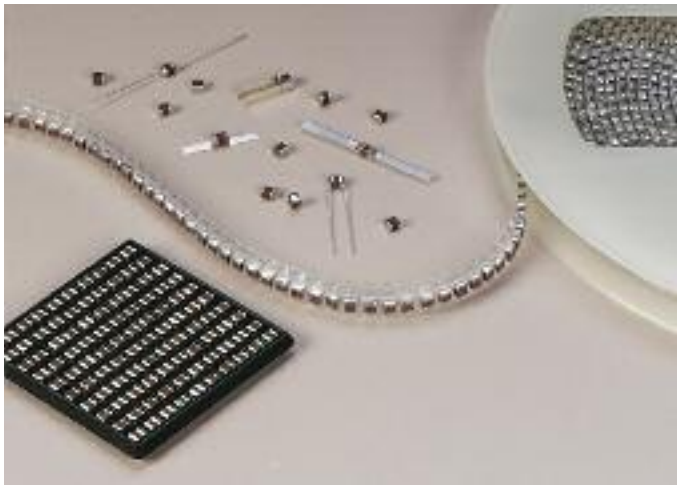
ATC 200 B Series BX Ceramic Multilayer Capacitors

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



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 MFd:
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. L, 8/13

ATC 200 B Capacitance Values

CAP. CODE	CAP. (pF)	TOL.	RATED WVDC	CAP. CODE	CAP. (pF)	TOL.	RATED WVDC
502	5000	K, M, N	50	273	27,000	K, M, N	50
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 x WVDC

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

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

ATC PART NUMBER CODE

ATC200 B 82 2 M W 50 X T

- 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
- WVDC
- Laser Marking
- Packaging
  - T - Tape and Reel, 1000 pc. qty.*
  - TV - Vertical Orientation of Product, Tape and Reel, 1000 pc. qty.*
  - I - Special Packaging. Consult Factory.

*Consult ATC for other quantities

ATC Cap-Pac® packaging (100 pc. qty. std.) is also available. For this option, leave last field blank.

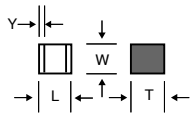
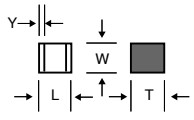
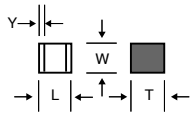
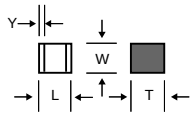
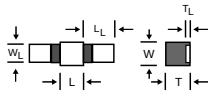
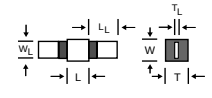
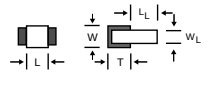
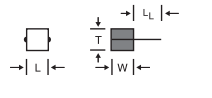
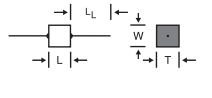
The above part number refers to a 200 B Series (case size B) 8200 pF capacitor, M tolerance (±20%), 50 WVDC, with W termination (Tin/Lead, Solder Plated over Nickel Barrier), laser marking and ATC Cap-Pac® packaging.

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.

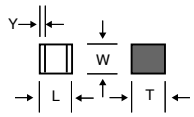
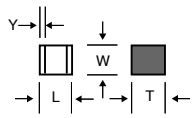
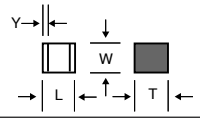
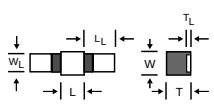
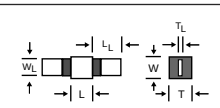
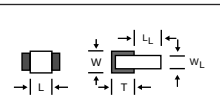
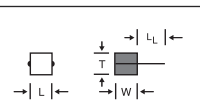
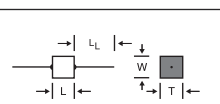
Consult factory for additional performance data.

ATC 200 B Capacitors: Mechanical Configurations

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)	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)			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)			***RoHS Compliant*** 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)			***RoHS Compliant*** 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_L)	Width (W_L)	Thickness (T_L)
200B	AR	B Axial Ribbon				.100 (2.54) max.		.250 (6.35) min.	.093 ±.005 (2.36 ±0.13)	.004 ±.001 (.102 ±.025)
200B	RR	B Radial Ribbon								
200B	RW	B Radial Wire		.145 ±.020 (3.68 ±0.51)				.500 (12.7) min.	#26 AWG., .016 (.406) dia. nominal	
200B	AW	B Axial Wire								

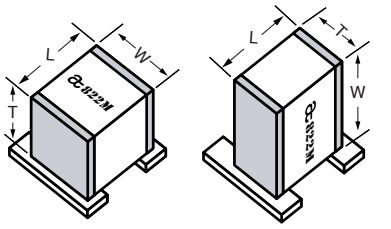
Additional lead styles available: Narrow Microstrip (NM), Narrow Axial Ribbon (NA) and Vertical Narrow Microstrip (H). Other lead lengths are available; consult factory. All leads are high purity silver attached with high temperature solder and are **RoHS** compliant. For a complete military catalog, request American Technical Ceramics document ATC 001-818.

ATC 200 B Capacitors: Non-Magnetic Mechanical Configurations

ATC SERIES & CASE SIZE	ATC TERM. CODE	CASE SIZE & TYPE	OUTLINES W/T IS A TERMINATION SURFACE	BODY DIMENSIONS INCHES (mm) LENGTH (L)	 WIDTH (W)	 THICKNESS (T)	LEAD AND TERMINATION DIMENSIONS AND MATERIALS 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)	.102 (2.59) max.	.015 (0.38) ±.010 (0.25)	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)			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)			***RoHS Compliant*** Tin Plated over Non-Magnetic Barrier Termination
200B	MN	B Non-Mag Microstrip		.135 ±.015 (3.43 ±0.38)	.110 ±.015 (2.79 ±0.38)	.120 (3.05) max.	N/A	Length (L_L) / Width (W_L) / Thickness (T_L)
200B	AN	B Non-Mag Axial Ribbon				.100 (2.54) max.		.250 (6.35) min. / .093 ±.005 (2.36 ±0.13) / .004 ±.001 (.102 ±.025)
200B	FN	B Non-Mag Radial Ribbon						
200B	RN	B Non-Mag Radial Wire		.145 ±.020 (3.68 ±0.51)				.500 (12.7) min. / #26 AWG., .016 (.406) dia. nominal
200B	BN	B Non-Mag Axial Wire						

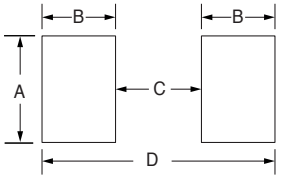
Additional lead styles available: Narrow Microstrip (DN), Narrow Axial Ribbon (GN) and Vertical Narrow Microstrip (HN). Other lead lengths are available; consult factory. All leads are high purity silver attached with high temperature solder and are **RoHS** compliant.

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

All values	Normal	.130	.050	.075	.175
	High Density	.110	.030	.075	.135

Dimensions are in inches.

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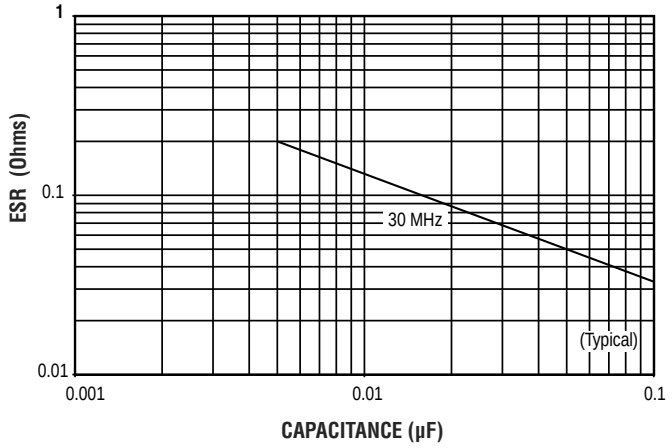
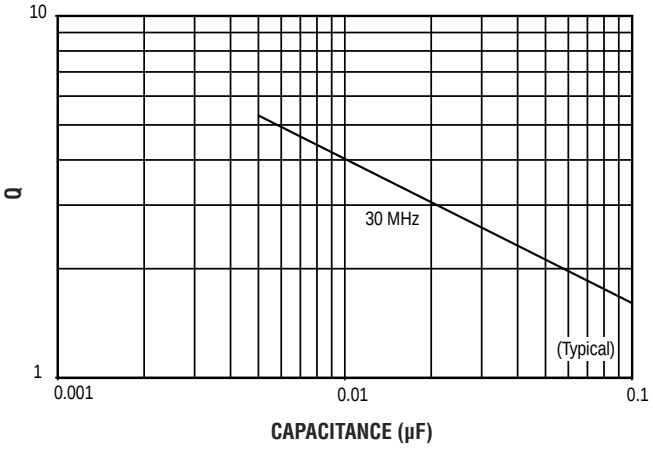
ATC 200 B Performance Data

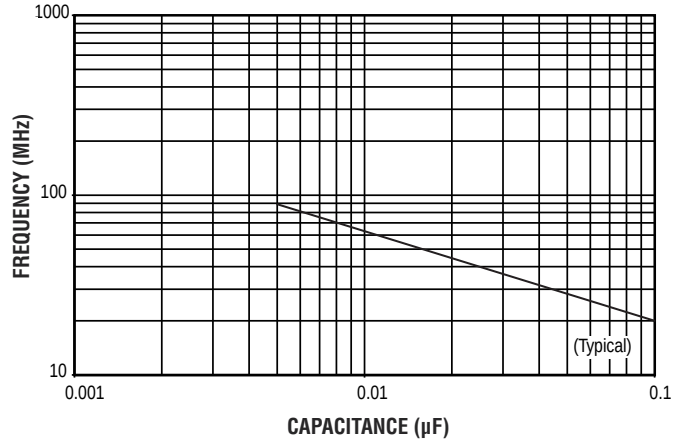
ESR VS. CAPACITANCE
ATC SERIES 200, CASE B



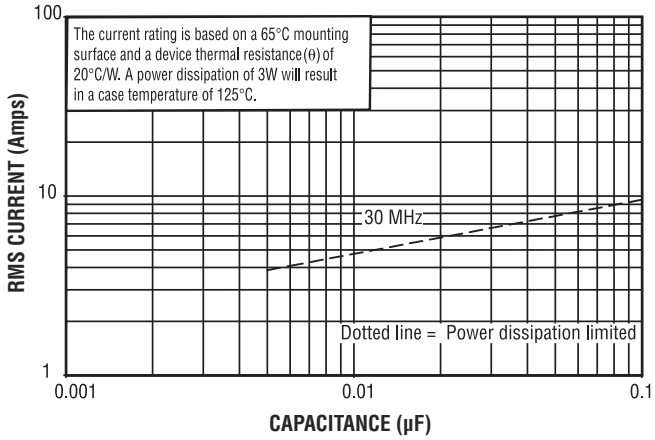
Q VS. CAPACITANCE
ATC SERIES 200, CASE B



SERIES RESONANCE VS. CAPACITANCE
ATC SERIES 200, CASE B



CURRENT RATING VS. CAPACITANCE
ATC SERIES 200, CASE B



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ATC # 001-812 Rev. L, 8/13

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