

# ATC 100 A Series Porcelain Superchip<sup>®</sup> Multilayer Capacitors

- Case A Size (.055" x .055")
- Capacitance Range 0.1 pF to 100 pF
- High Q
- Ultra-Stable Performance
- Low ESR/ESL
- High Self-Resonance
- Low Noise
- Established Reliability (QPL)
- Extended WVDC up to 250 VDC

ATC, the industry leader, offers new improved ESR/ESL performance for the 100 A Series RF/Microwave Capacitors. This is ATC's most versatile high Q, high self resonant multilayer capacitor. High density porcelain construction provides a rugged, hermetic package.

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

Typical circuit applications: Microwave/RF/IF Amplifiers, Mixers, Oscillators, Low Noise Amplifiers, Filter Networks, Timing Circuits and Delay Lines.

## ENVIRONMENTAL TESTS

ATC 100 A 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

**QUALITY FACTOR (Q):** greater than 10,000 at 1 MHz.

**TEMPERATURE COEFFICIENT OF CAPACITANCE (TCC):**  
+90 ±20 PPM/°C (-55°C to +125°C)

### INSULATION RESISTANCE (IR):

0.1 pF to 100 pF:

10<sup>6</sup> Megohms min. @ +25°C at rated WVDC.

10<sup>5</sup> Megohms min. @ +125°C at rated WVDC.

### WORKING VOLTAGE (WVDC):

See Capacitance Values Table, page 2.

### DIELECTRIC WITHSTANDING VOLTAGE (DWV):

250% of rated WVDC for 5 secs.

**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 (No derating of working voltage).

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

**TERMINAL STRENGTH:** Terminations for chips and pellets withstand a pull of 5 lbs. min., 10 lbs. typical, for 5 seconds in direction perpendicular to the termination surface of the capacitor. Test per MIL-STD-202, method 211.



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  
+1-631-622-4700  
sales@atceramics.com

ATC Europe  
+46 8 6800410  
sales@atceramics-europe.com

ATC Asia  
+86-755-2396-8759  
sales@atceramics-asia.com

 THE  
ENGINEERS'  
CHOICE<sup>®</sup>  
ISO 9001 REGISTERED

[www.atceramics.com](http://www.atceramics.com)

ATC # 001-806 Rev. L 9/12

# ATC 100 A Capacitance Values

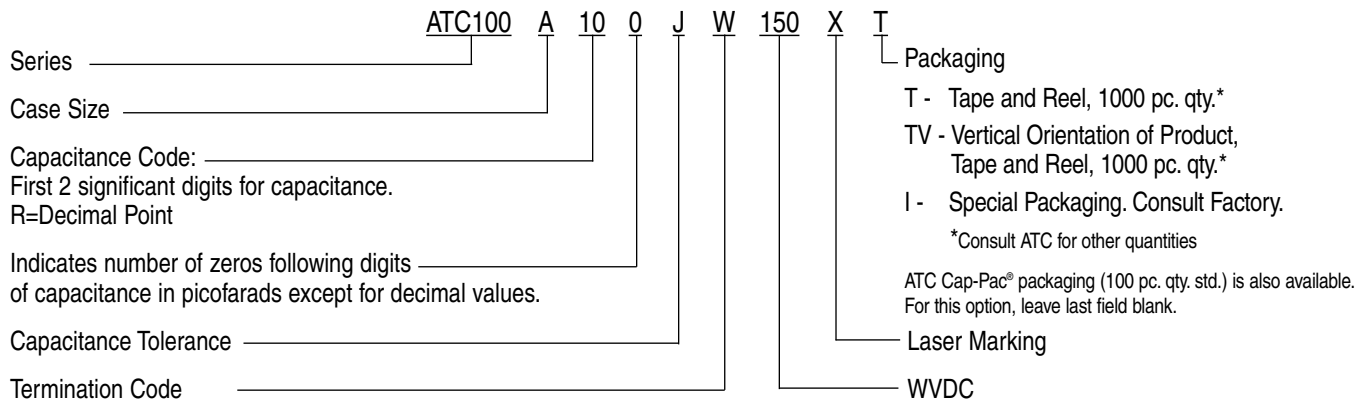
CAP. CODE	CAP. (pF)	TOL.	RATED WVDC		CAP. CODE	CAP. (pF)	TOL.	RATED WVDC		CAP. CODE	CAP. (pF)	TOL.	RATED WVDC	
			STD.	EXT.				STD.	EXT.				STD.	EXT.
0R1	0.1	B	150	250	2R2	2.2	B, C, D	150	250	160	16	F, G, J, K, M	150	EXTENDED VOLTAGE
0R2	0.2				2R4	2.4				180	18			
0R3	0.3	B, C			2R7	2.7				200	20			
0R4	0.4				3R0	3.0				220	22			
0R5	0.5	B, C, D			3R3	3.3				240	24			
0R6	0.6				3R6	3.6				270	27			
0R7	0.7				3R9	3.9				300	30			
0R8	0.8				4R3	4.3				330	33			
0R9	0.9				4R7	4.7				360	36			
1R0	1.0				5R1	5.1				390	39			
1R1	1.1				5R6	5.6				430	43			
1R2	1.2				6R2	6.2				470	47			
1R3	1.3		6R8	6.8	510	51								
1R4	1.4		7R5	7.5	560	56								
1R5	1.5		8R2	8.2	620	62								
1R6	1.6		9R1	9.1	680	68								
1R7	1.7	100	10	750	75									
1R8	1.8	110	11	820	82									
1R9	1.9	120	12	910	91									
2R0	2.0	130	13	101	100									
2R1	2.1	150	15											

VRMS = 0.707 X WVDC

**SPECIAL VALUES, TOLERANCES, HIGHER WVDC AND MATCHING AVAILABLE. PLEASE CONSULT FACTORY.**  
**NOTE: EXTENDED WVDC DOES NOT APPLY TO CDR PRODUCTS.**

CAPACITANCE TOLERANCE								
Code	B	C	D	F	G	J	K	M
Tol.	±0.1 pF	±0.25 pF	±0.5 pF	±1%	±2%	±5%	±10%	±20%

### ATC PART NUMBER CODE



The above part number refers to a 100 A Series (case size A) 10 pF capacitor,  
 J tolerance (±5%), 150 WVDC, with W termination (Tin/Lead, Solder Plated over Nickel Barrier), laser marking and ATC Tape and Reel 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.

## 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  
 +1-631-622-4700 • sales@atceramics.com

ATC Europe  
 +46 8 6800410 • sales@atceramics-europe.com

ATC Asia  
 +86-755-2396-8759 • sales@atceramics-asia.com

# ATC 100 A Capacitors: 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
100A	W	CDR12BG	A Solder Plate		.055 +.015 -.010 (1.40 +0.38 -0.25)	.055 ±.015 (1.40 ±0.38)	.057 (1.45) max.	.010 +.010 -.005 (0.25 +0.25 -0.13)	Tin/Lead, Solder Plated over Nickel Barrier Termination
100A	P	CDR12BG	A Pellet		.055 +.025 -.010 (1.40 +0.64 -0.25)	.055 ±.015 (1.40 ±0.38)	.057 (1.45) max.	.010 +.010 -.005 (0.25 +0.25 -0.13)	Heavy Tin/Lead Coated, over Nickel Barrier Termination
100A	T	N/A	A Solderable Nickel Barrier		.055 +.015 -.010 (1.40 +0.38 -0.25)	.055 ±.015 (1.40 ±0.38)	.057 (1.45) max.	.010 +.010 -.005 (0.25 +0.25 -0.13)	<b>RoHS Compliant</b> Tin Plated over Nickel Barrier Termination
100A	CA	CDR11BG	A Gold Chip		.055 +.015 -.010 (1.40 +0.38 -0.25)	.055 ±.015 (1.40 ±0.38)	.057 (1.45) max.	.010 +.010 -.005 (0.25 +0.25 -0.13)	<b>RoHS Compliant</b> Gold Plated over Nickel Barrier Termination

For a complete military catalog, request American Technical Ceramics document ATC 001-818.

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  
+1-631-622-4700 • sales@atceramics.com

ATC Europe  
+46 8 6800410 • sales@atceramics-europe.com

ATC Asia  
+86-755-2396-8759 • sales@atceramics-asia.com

# ATC 100 A Non-Magnetic Capacitors: 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
100A	WN	Meets Requirements	A Non-Mag Solder Plate		.055 +.025 -.010 (1.40 +0.64 -0.25)	.055 ±.015 (1.40 ±0.38)	.057 (1.45) max.	.010 +.010 -.005 (0.25 +0.25 -0.13)	Tin/Lead, Solder Plated over Non-Magnetic Barrier Termination
100A	PN	Meets Requirements	A Non-Mag Pellet		.055 +.035 -.010 (1.40 +0.89 -0.25)	.055 ±.015 (1.40 ±0.38)	.057 (1.45) max.	.010 +.010 -.005 (0.25 +0.25 -0.13)	Heavy Tin/Lead Coated, over Non-Magnetic Barrier Termination
100A	TN	Meets Requirements	A Non-Mag Solderable Barrier		.055 +.025 -.010 (1.40 +0.64 -0.25)	.055 ±.015 (1.40 ±0.38)	.057 (1.45) max.	.010 +.010 -.005 (0.25 +0.25 -0.13)	<b>RoHS Compliant</b> Tin Plated over Non-Magnetic Barrier Termination

All 100 A Capacitors are available laser marked with ATC's identification, capacitance code and tolerance.

## Suggested Mounting Pad Dimensions

Horizontal Electrode Orientation

Vertical Electrode Orientation

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

**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  
+1-631-622-4700 • sales@atceramics.com

ATC Europe  
+46 8 6800410 • sales@atceramics-europe.com

ATC Asia  
+86-755-2396-8759 • sales@atceramics-asia.com

# ATC 100 A Performance Data

**ESR VS. CAPACITANCE  
ATC SERIES 100, CASE A**



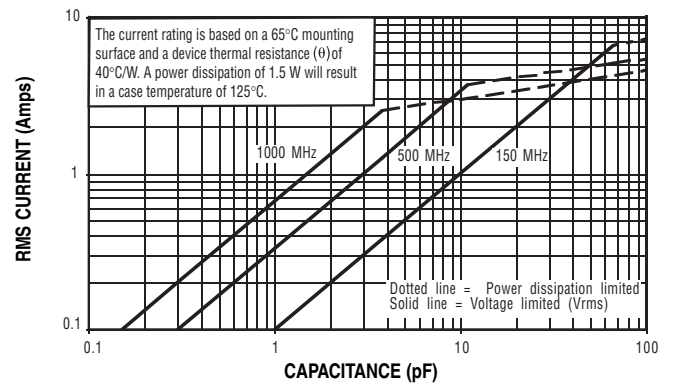
**Q VS. CAPACITANCE  
ATC SERIES 100, CASE A**



**SERIES RESONANCE VS. CAPACITANCE  
ATC SERIES 100, CASE A**



**CURRENT RATING VS. CAPACITANCE  
ATC SERIES 100, CASE A**



**CAPACITANCE CHANGE VS. TEMPERATURE  
ATC SERIES 100, CASE A**



**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  
+1-631-622-4700 • sales@atceramics.com

ATC Europe  
+46 8 6800410 • sales@atceramics-europe.com

ATC Asia  
+86-755-2396-8759 • sales@atceramics-asia.com

# ATC 100 A Performance Data

**CURRENT RATING VS. CAPACITANCE**  
**ATC SERIES 100, CASE A, EXTENDED VOLTAGE**



**CURRENT RATING VS. CAPACITANCE**  
**ATC SERIES 100, CASE A, EXTENDED VOLTAGE**



Sales of ATC products are subject to the terms and conditions contained in American Technical Ceramics Corp. Terms and Conditions of Sale (ATC document #001-992 Rev. B 12/05). Copies of these terms and conditions will be provided upon request. They may also be viewed on ATC's website at [www.atceramics.com/productfinder/default.asp](http://www.atceramics.com/productfinder/default.asp). Click on the link for Terms and Conditions of Sale.

ATC has made every effort to have this information as accurate as possible. However, no responsibility is assumed by ATC for its use, nor for any infringements of rights of third parties which may result from its use. ATC reserves the right to revise the content or modify its product without prior notice.

© 1996 American Technical Ceramics Corp. All Rights Reserved.

ATC # 001-806 Rev. L 9/12



**AMERICAN TECHNICAL CERAMICS**

**ATC North America**  
 +1-631-622-4700  
[sales@atceramics.com](mailto:sales@atceramics.com)

**ATC Europe**  
 +46 8 6800410  
[sales@atceramics-europe.com](mailto:sales@atceramics-europe.com)

**ATC Asia**  
 +86-755-2396-8759  
[sales@atceramics-asia.com](mailto:sales@atceramics-asia.com)



[www.atceramics.com](http://www.atceramics.com)

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## [American Technical Ceramics \(ATC\):](#)

[100A0R1BT150XT](#) [100A0R1BW150XT](#) [100A0R2BT150XT](#) [100A0R2BW150XT](#) [100A0R3BT150XT](#)  
[100A0R3BW150XT](#) [100A0R3CT150XT](#) [100A0R3CW150XT](#) [100A0R4BT150XT](#) [100A0R4BW150XT](#)  
[100A0R4CT150XT](#) [100A0R4CW150XT](#) [100A0R5BT150XT](#) [100A0R5BW150XT](#) [100A0R5CT150XT](#)  
[100A0R5CW150XT](#) [100A0R5DT150XT](#) [100A0R5DW150XT](#) [100A0R6BT150XT](#) [100A0R6BW150XT](#)  
[100A0R6CT150XT](#) [100A0R6CW150XT](#) [100A0R6DT150XT](#) [100A0R6DW150XT](#) [100A0R7BT150XT](#)  
[100A0R7BW150XT](#) [100A0R7CT150XT](#) [100A0R7CW150XT](#) [100A0R7DT150XT](#) [100A0R7DW150XT](#)  
[100A0R8BT150XT](#) [100A0R8BW150XT](#) [100A0R8CT150XT](#) [100A0R8CW150XT](#) [100A0R8DT150XT](#)  
[100A0R8DW150XT](#) [100A0R9BT150XT](#) [100A0R9BW150XT](#) [100A0R9CT150XT](#) [100A0R9CW150XT](#)  
[100A0R9DT150XT](#) [100A0R9DW150XT](#) [100A100FT150XT](#) [100A100FW150XT](#) [100A100GT150XT](#)  
[100A100GW150XT](#) [100A100JT150XT](#) [100A100JW150XT](#) [100A100KT150XT](#) [100A100KW150XT](#) [100A100MT150XT](#)  
[100A100MW150XT](#) [100A101FT150XT](#) [100A101FW150XT](#) [100A101GT150XT](#) [100A101GW150XT](#)  
[100A101JW150XT](#) [100A101KT150XT](#) [100A101KW150XT](#) [100A101MT150XT](#) [100A101MW150XT](#) [100A110FT150XT](#)  
[100A110FW150XT](#) [100A110GT150XT](#) [100A110GW150XT](#) [100A110JT150XT](#) [100A110JW150XT](#)  
[100A110KT150XT](#) [100A110KW150XT](#) [100A110MT150XT](#) [100A110MW150XT](#) [100A120FT150XT](#) [100A120FW150XT](#)  
[100A120GT150XT](#) [100A120GW150XT](#) [100A120JT150XT](#) [100A120JW150XT](#) [100A120KT150XT](#)  
[100A120KW150XT](#) [100A120MT150XT](#) [100A120MW150XT](#) [100A130FT150XT](#) [100A130FW150XT](#)  
[100A130GT150XT](#) [100A130GW150XT](#) [100A130JT150XT](#) [100A130JW150XT](#) [100A130KT150XT](#) [100A130KW150XT](#)  
[100A130MT150XT](#) [100A130MW150XT](#) [100A150FT150XT](#) [100A150FW150XT](#) [100A150GT150XT](#)  
[100A150GW150XT](#) [100A150JW150XT](#) [100A150KT150XT](#) [100A150KW150XT](#) [100A150MT150XT](#)  
[100A150MW150XT](#)

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А