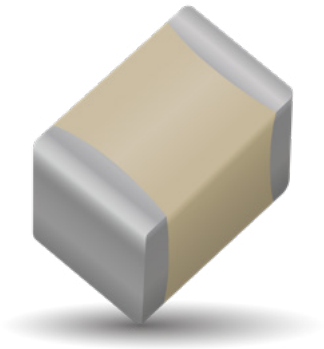
RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

100C Series Porcelain Superchip® Multilayer Capacitors



FEATURES

- Case C Size (.250" x .250")
- Capacitance Range 1pF to 2700pF
- Extended WVDC up to 3600 VDC
- Low ESR/ESL
- High Q
- Low Noise
- Ultra-Stable Performance
- High Self-Resonance
- Established Reliability (QPL)

GENERAL DESCRIPTION

KYOCERA AVX, the industry leader, offers new improved ESR/ESL performance for the 100C Series RF Capacitors. This high Q multilayer capacitor is ultra-stable under high RF current and voltage applications. High density Porcelain construction provides a rugged, hermetic package.

KYOCERA AVX offers an encapsulation option for applications requiring extended protection against arc-over and corona.

PACKAGING OPTIONS

Tape & Reel

Tray (180 pcs)

RoHS COMPLIANT

FUNCTIONAL APPLICATIONS

- Bypass
- Coupling
- Tuning
- Impedance Matching
- DC Blocking

CIRCUIT APPLICATIONS

- VHF/UHF RF Power Amplifiers
- Antenna Tuning
- Plasma Chambers
- Medical (MRI coils)

ENVIRONMENTAL CHARACTERISTICS

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. Voltage applied. 200% of WVDC for capacitors rated at 500 volts DC or less. 120% of WVDC for capacitors rated at 1250 volts DC or less. 100% of WVDC for capacitors rated above 1250 volts DC.
Termination Styles	Available in various surface mount and leaded styles. See Mechanical Configurations
Terminal Strength	Terminations for chips and pellets withstand a pull of 10 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.

ELECTRICAL SPECIFICATIONS

Temperature Coefficient (TCC)	+90 ±30 PPM/°C (-55°C to +125°C)
Insulation Resistance (IR)	1 pF to 2700 pF: 10^5 Megohms min. @ +25°C at rated WVDC. 10^4 Megohms min. @ +125°C at rated WVDC. Max. test voltage is 500 VDC.
Working Voltage (WVDC)	See Capacitance Values Table
Dielectric Withstanding Voltage (DWV)	250% of WVDC for capacitors rated at 500 volts DC or less for 5 seconds. 150% of WVDC for capacitors rated at 1250 volts DC or less for 5 seconds. 120% of WVDC for capacitors rated above 1250 Volts DC for 5 seconds
Retrace	Less than ±(0.02% or 0.02 pF), whichever is greater.
Aging Effects	None
Piezoelectric Effects	None
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)

RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

100C Series Porcelain Superchip® Multilayer Capacitors

CAP. CODE	CAP. (pF)	TOL.	RATED WVDC		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.				STD.	EXT.
1R0	1.0	B, C, D	2500	EXTENDED VOLTAGE 3600 EXTENDED VOLTAGE	5R1	5.1	B, C, D	2500	EXTENDED VOLTAGE 3600 EXTENDED VOLTAGE	390	39	F, G, J, K, M	2500	VOLTAGE 3600 EXTENDED VOLTAGE 3000 EXTENDED	301	300	F, G, J, K, M	1500	2000
1R1	1.1				5R6	5.6				430	43				331	330			
1R2	1.2				6R2	6.2				470	47				361	360			
1R3	1.3				6R8	6.8				510	51				391	390			
1R4	1.4				7R5	7.5				560	56				431	430			
1R5	1.5				8R2	8.2				620	62				471	470			
1R6	1.6				9R1	9.1				680	68				511	510		1000	VOLTAGE 1500 EXTENDED
1R7	1.7				100	10	F, G, J, K, M			750	75				561	560			
1R8	1.8				110	11				820	82				621	620			
1R9	1.9				120	12				910	91				681	680			
2R0	2.0				130	13				101	100				751	750			
2R1	2.1				150	15				111	110				821	820			
2R2	2.2				160	16				121	120				911	910			
2R4	2.4				180	18				131	130				102	1000			
2R7	2.7				200	20				151	150				112	1100			
3R0	3.0				220	22				161	160				122	1200			
3R3	3.3				240	24				181	180				152	1500		500	800
3R6	3.6				270	27				201	200				182	1800			
3R9	3.9				300	30				221	220				222	2200		300	500
4R3	4.3				330	33				241	240				242	2400			
4R7	4.7				360	36				271	270				272	2700			

VRMS = 0.707 x WVDC

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

HOW TO ORDER

100 C 100 J W 2500 X T

Series

Case Size

See mechanical dimensions below

Capacitance

EIA Capacitance Code in pF.
First two digits = significant figures or "R" for decimal place.
Third digit = number of zeros or after "R" significant figures

Capacitance Tolerance Code

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

Packaging

T = Tape and Reel, 500 pc. qty.
Please see last column of mechanical configuration table for other options.

Laser Marking (Optional)

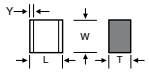
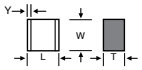
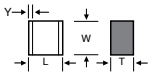
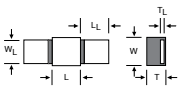
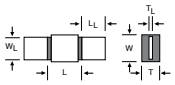
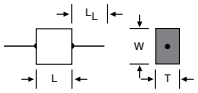
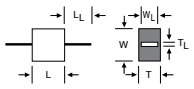
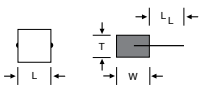
WVDC

Termination Style Code

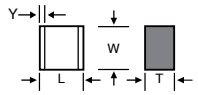
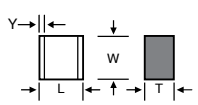
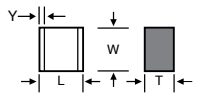
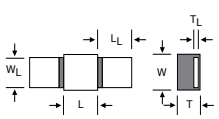
Please see 2nd Column Mechanical Configuration Table

The above part number refers to a 100 C Series (case size C) 10 pF capacitor, J tolerance (±5%), 2500 WVDC, with W termination (Tin/Lead, Solder Plated over Nickel Barrier), laser marking and 500 pc T&R packaging.

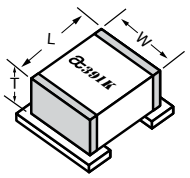
MECHANICAL CONFIGURATIONS

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		Pkg. Type	Pkg Code
				LENGTH (L)	WIDTH (W)	THICKNESS (T)	OVERLAP (Y)	MATERIALS		
100C	W	C Solder Plate		.230+.020 -.010 (5.84+0.51-0.25)	.250 ±.015 (6.35 ±0.38)	.145(3.68) max. for capacitance values ≤680pF .165(4.19) max. for capacitance values >680pF	.040 (1.02) max.	Tin/Lead, Solder Plated over Nickel Barrier Termination	T&R, 250 or 500 pcs Tray, 36 or 180 pcs	T250 or T J36 or J180
100C	P	C Pellet		.230+.025 -.010 (5.84+0.64-0.25)				Heavy Tin/Lead Coated, over Nickel Barrier Termination	T&R, 250 or 500 pcs Tray, 36 or 180 pcs	T250 or T J36 or J180
100C	T	C Solderable Nickel Barrier		.230+.020 -.010 (5.84+0.51-0.25				***RoHS Compliant*** Tin Plated over Nickel Barrier Termination	T&R, 250 or 500 pcs Tray, 36 or 180 pcs	T250 or T J36 or J180
100C	MS	C Microstrip		.245 ±.025 (6.22 ±0.64)			N/A	High Purity Silver Leads L_L = .500 (12.7) min. W_L = .240 ±.005 (6.10 ±.127 T_L = .004 ±.001 (.102 ±.025) Leads are Attached with High Temperature Solder.	Tray, 24 or 60 pcs	J24 or J60
100C	AR	C Axial Ribbon							Box, 24 pcs	B24
100C	AW	C Axial Wire						Silver-plated Copper Leads L_L = 2.25 (57.15) min. Dia. = .032 ±.002 (0.81 ±0.05	Box, 21 pcs	B21
100C	VA	C Vertical Axial Ribbon						Silver Leads L_L = .500 (12.7) min. W_L = ** See below TL = .004 ±.001 (.102 ±.025)	Box, 24 pcs	B24
100C	RW	C Radial Wire						Silver-plated Copper Leads L_L = 1.0 (25.4) min. Dia. = .032 ±.002 (0.81 ±0.05)	Tray, 16 pcs	J16

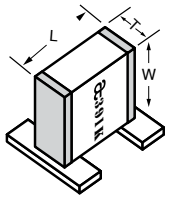
NON-MAGNETIC MECHANICAL CONFIGURATIONS

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		Pkg. Type	Pkg Code
				LENGTH (L)	WIDTH (W)	THICKNESS (T)	OVERLAP (Y)	MATERIALS		
100C	WN	C Non-Mag Solder Plate		.230+.025 -.010 (5.84+0.64-0.25)	.250 ±.015 (6.35 ±0.38)	.145(3.68) max. for capacitance values ≤680pF .165(4.19) max. for capacitance values >680pF	.040 (1.02) max.	Tin/Lead, Solder Plated over Non-Magnetic Barrier Termination	T&R, 250 or 500 pcs Tray, 36 or 180 pcs	T250 or T J36 or J180
100C	PN	C Non-Mag Pellet		.230+.035-.010 (5.84+0.89-0.25)				Heavy Tin/Lead Coated, over Non-Magnetic Barrier Termination	T&R, 250 or 500 pcs Tray, 36 or 180 pcs	T250 or T J36 or J180
100C	TN	C Non-Mag Solderable Nickel Barrier		.230+.025 -.010 (5.84+0.64-0.25)				***RoHS Compliant*** Tin Plated over Non-Magnetic Barrier Termination	T&R, 250 or 500 pcs Tray, 36 or 180 pcs	T250 or T J36 or J180
100C	MN	C Non-Mag Microstrip		.245 ±.025 (6.22 ±0.64)				High Purity Silver Leads L_L = .500 (12.7) min. W_L = .240 ±.005 (6.10 ±.127) T_L = .004 ±.001(.102 ±.025) Leads are Attached with High Temperature Solder.	Tray, 24 or 60 pcs	J24 or J60

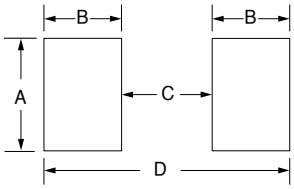
SUGGESTED MOUNTING PAD DIMENSIONS



Horizontal Electrode Orientation



Vertical Electrode Orientation



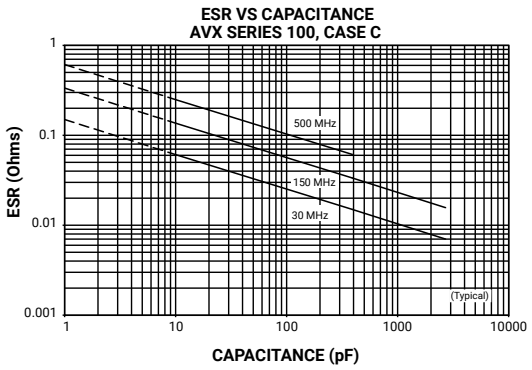
Case C Vertical Mount

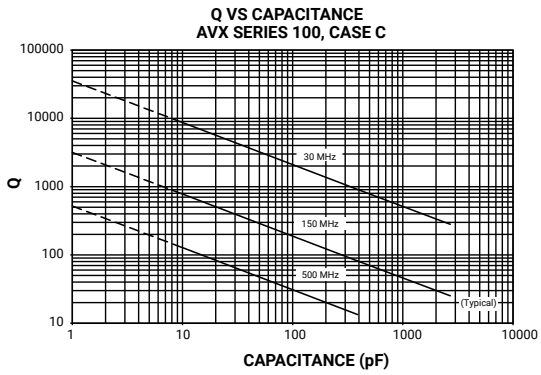
Cap Value	Pad Size	A Min.	B Min.	C Min.	D Min.
< 680 pF	Normal	.150	.050	.200	.300
	High Density	.130	.030	.200	.260
> 680 pF	Normal	.185	.050	.200	.300
	High Density	.165	.030	.200	.260

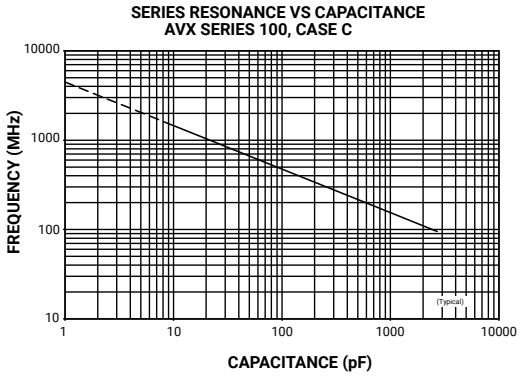
Horizontal Mount

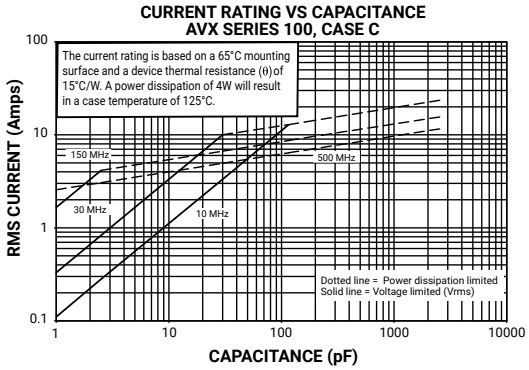
All Values	Normal	.280	.050	.200	.300
	High Density	.260	.030	.200	.260

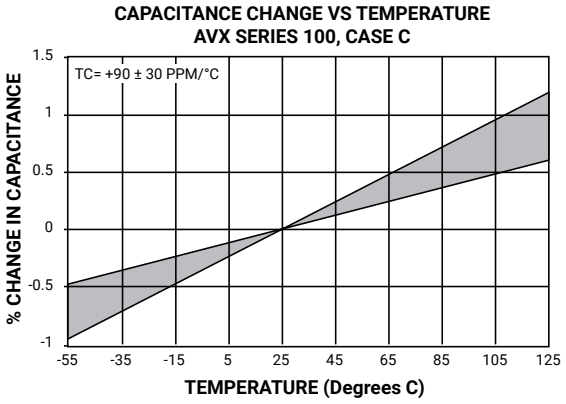
PERFORMANCE DATA











Mouser Electronics

Authorized Distributor

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

AVX:

100C8R2DAW2500X? 100C910JPN2500X? 100C182JPN500X? 100C391JPN1500X? 100C681JPN1000X? 100C750JPN2500X? 100C300JPN2500X?