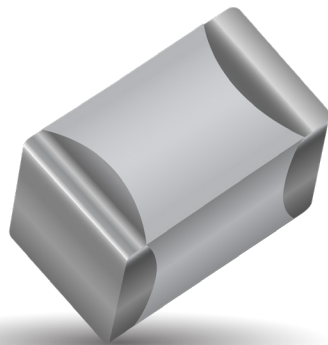


RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

100A Series Porcelain Superchip® Multilayer Capacitors



FEATURES

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

GENERAL DESCRIPTION

AVX, the industry leader, offers new improved ESR/ESL performance for the 100A Series RF/Microwave Capacitors. This is AVX'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.

PACKAGING OPTIONS



ELECTRICAL SPECIFICATIONS

Temperature Coefficient (TCC)	90 ± 20 PPM/°C
Capacitance Range	0.1 pF to 100 pF
Operating Temperature	-55°C to +125°C*
Quality Factor	Greater than 10,000 @ 1 MHz.
Insulation Resistance (IR)	0.1 pF to 100 pF 10 ⁶ Megohms min. @ 25°C at rated WVDC 10 ⁵ Megohms min. @ 125°C at rated WVDC
Working Voltage (WVDC)	See Capacitance Values table
Dielectric Withstanding Voltage (DWV)	250% of rated WVDC for 5 seconds
Aging Effects	None
Piezoelectric Effects	None
Capacitance Drift	± (0.02% or 0.02 pF), whichever is greater

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 VDC applied while subjected to an environment of 85°C with 85% relative humidity for 240 hours
Life Test	MIL-STD-202, Method 108, for 2000 hours, at 125°C. 200% WVDC applied.
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.

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CAPACITANCE VALUES

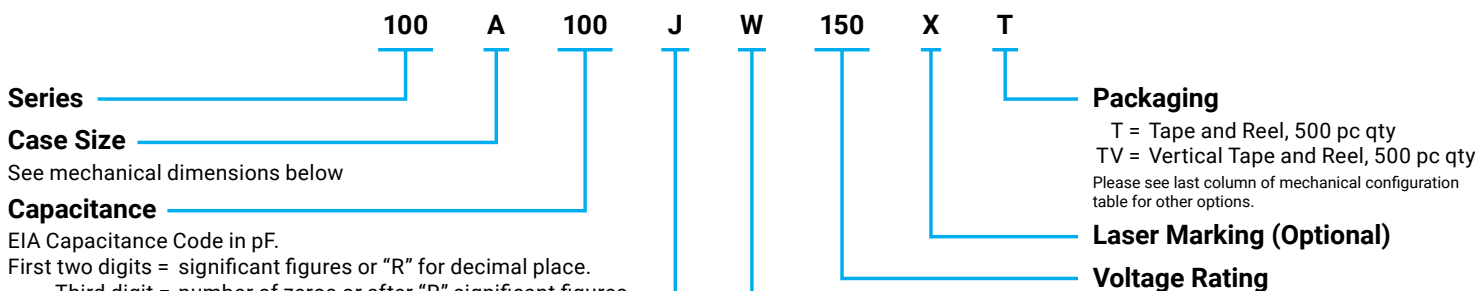
Cap. Code	Cap. (pF)	Tol.	Rated WVDC		Cap. Code	Cap. (pF)	Tol.	Rated WVDC		Cap. Code	Cap. (pF)	Tol.	Rated WVDC															
			STD.	EXT.				STD.	EXT.				STD.	EXT.														
0R1	0.1	B	150	EXTENDED VOLTAGE	2R2	2.2	B, C, D	150	EXTENDED VOLTAGE	160	16	F, G, J, K, M	150	VOLTAGE														
0R2	0.2				2R4	2.4				180	18																	
0R3	0.3				2R7	2.7				200	20																	
0R4	0.4				3R0	3.0				220	22																	
0R5	0.5	B, C			250	EXTENDED VOLTAGE				3R3	3.3				B, C, D	250	EXTENDED VOLTAGE	240	24	F, G, J, K, M	250							
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	B, C, D								EXTENDED VOLTAGE	250							4R7	4.7			B, C, J, K, M	250	EXTENDED VOLTAGE	360	36	F, G, J, K, M	250
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	B, C, D	EXTENDED VOLTAGE	250			6R8	6.8	B, C, J, K, M			250	EXTENDED VOLTAGE	510				51	F, G, J, K, M						250			
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	B, C, D			EXTENDED VOLTAGE	250	100	10						B, C, J, K, M	250	EXTENDED VOLTAGE	750	75		F, G, J, K, M	250							
1R8	1.8						110	11									820	82										
1R9	1.9						120	12									910	91										
2R0	2.0						130	13									101	100										
2R1	2.1	B, C, D					EXTENDED VOLTAGE	250		150	15						B, C, J, K, M	250				EXTENDED VOLTAGE				F, G, J, K, M	250	

$v_{rms} = 0.707 \times WVDC$

Special values, tolerances, different WVDC and matching available. Please consult factory.

Note: Extended WVDC does not apply to CDR products

HOW TO ORDER



Code	B	C	D	F	G	J	K	M
Tol.	±1 pF	±25 pF	±5 pF	±1%	±2%	±5%	±10%	±20%

Termination Style Code

Please see 2nd Column Mechanical Configuration Table

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 Tape and Reel 1000 pc qty packaging.



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.

RF/Microwave Capacitors

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MECHANICAL CONFIGURATION

AVX Series & Case Size	AVX Term. Code	MIL-PRF-55681	Case Size & Type	Outline W/T is a Termination Surface	Body Dimensions inches (mm)			Lead and Termination Dimensions and Material		Pkg Type & Qty	Pkg Code
					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	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs	T1K or T TV1K or TV C100
100A	P	CDR12BG	A Pellet		.055+.025-.010 (1.40+0.64-0.25)	.055 ±.015 (1.40 ±0.38)			Heavy Tin/ Lead Coated, over Nickel Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs	T1K or T TV1K or TV C100
100A	T	N/A	A Solderable Nickel Barrier		.055+.015-.010 (1.40+0.38-0.25)	.055 ±.015 (1.40 ±0.38)			RoHS Compliant Tin Plated over Nickel Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs	T1K or T TV1K or TV C100
100A	CA	CDR11BG	A Gold Chip		.055+.015-.010 (1.40+0.38-0.25)	.055 ±.015 (1.40 ±0.38)			RoHS Compliant Gold Plated over Nickel Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs	T1K or T TV1K or TV C100

NON-MECHANICAL CONFIGURATION

AVX Series & Case Size	AVX Term. Code	MIL-PRF-55681	Case Size & Type	Outline W/T is a Termination Surface	Body Dimensions inches (mm)			Lead and Termination Dimensions and Material		Pkg Type & Qty	Pkg Code
					Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials		
100A	WN	Meets Requirements	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 Non-Magnetic Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs	T1K or T TV1K or TV C100
100A	PN	Meets Requirements	A Pellet		.055+.025-.010 (1.40+0.64-0.25)	.055 ±.015 (1.40 ±0.38)			Heavy Tin/ Lead Coated, over Non-Magnetic Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs	T1K or T TV1K or TV C100
100A	TN	Meets Requirements	A Solderable Nickel Barrier		.055+.015-.010 (1.40+0.38-0.25)	.055 ±.015 (1.40 ±0.38)			RoHS Compliant Tin Plated over Non-Magnetic Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs	T1K or T TV1K or TV C100

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SUGGESTED MOUNTING PAD DIMENSIONS

Horizontal Electrode Orientation

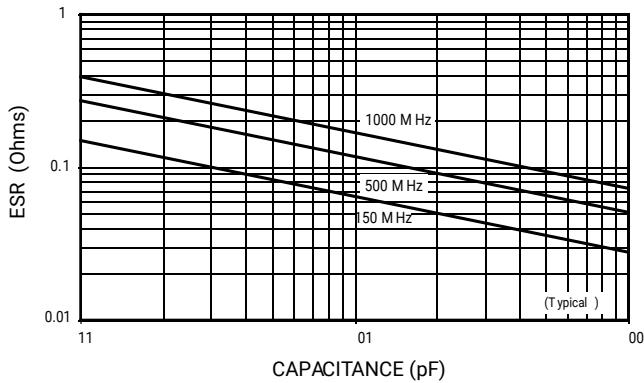
Vertical Electrode Orientation

Case A					
Mount Type	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

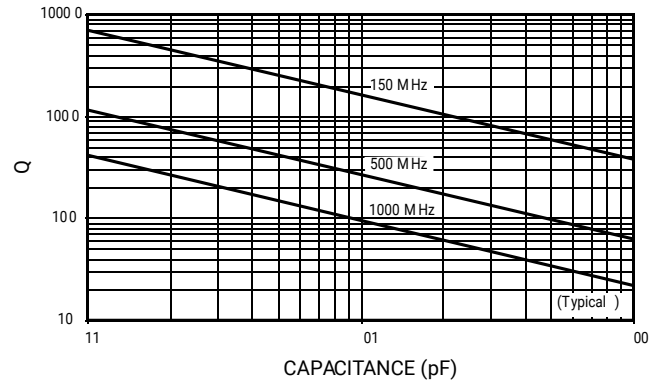
Dimensions are in inches.

PERFORMANCE DATA

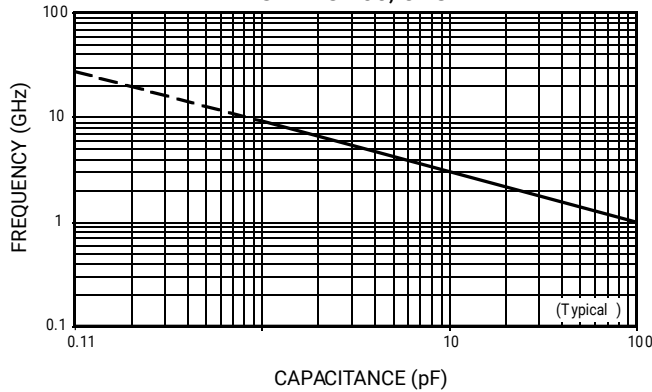
ESR VS. CAPACITANCE
SERIES 100, CASE A



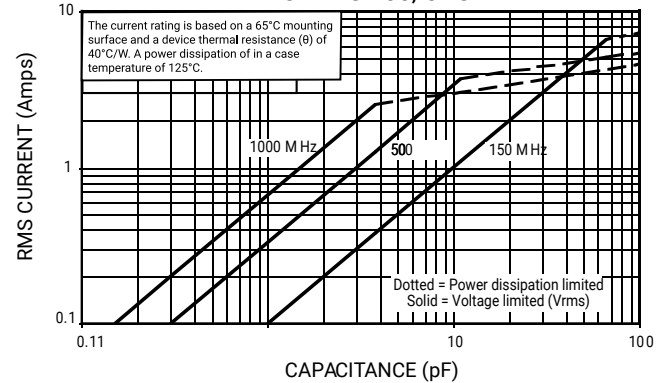
Q VS. CAPACITANCE
SERIES 100, CASE A



SERIES RESONANCE VS. CAPACITANCE
SERIES 100, CASE A



CURRENT RATING VS. CAPACITANCE
SERIES 100, CASE A

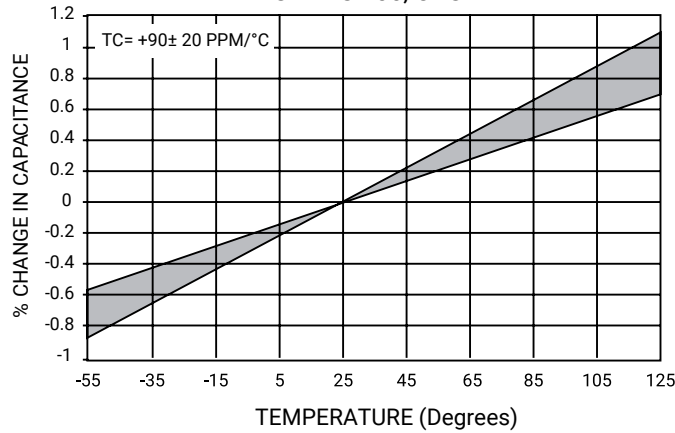


RF/Microwave Capacitors
RF/Microwave Multilayer Capacitors (MLC)
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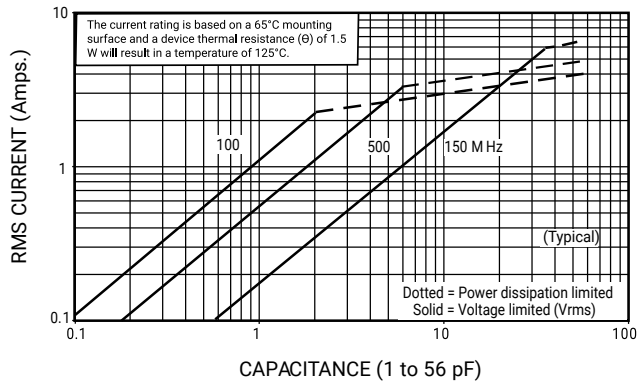


PERFORMANCE DATA

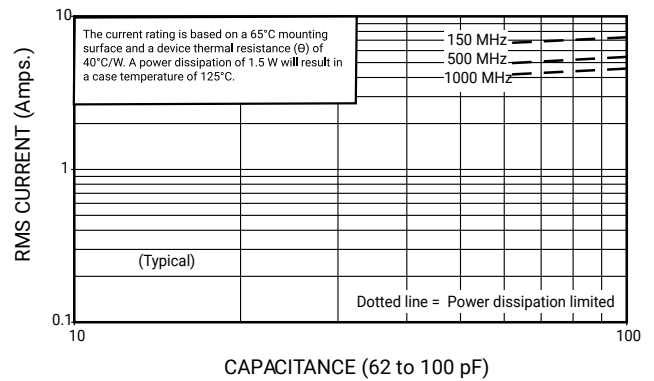
CAPACITANCE CHANGE VS. TEMPERATURE
SERIES 100, CASE A



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



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



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SAMPLE KITS

Kit #	RoHS Compliant	Item Number	Description	Cap. Value Range (pF)	Cap Value (pF)	Tol.	Price
Kit 1	-	DK0001	100A Porcelain Superchip® 16 different values, 15 pcs. min. per value	0.1 to 2.0	0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.5	±0.1	\$160.00
Kit 1T		DK0001T			1.6, 1.8, 2.0	±0.25	
Kit 2	-	DK0002	100A Porcelain Superchip® 16 different values, 15 pc. min. per value	1.0 to 10	1.0, 1.2, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, 3.0, 3.3	±0.1	\$160.00
Kit 2T		DK0002T			3.9, 4.7, 5.6, 6.8, 8.2	±0.25	
Kit 3	-	DK0003	100A Porcelain Superchip® 16 different values, 15 pc. min. per value	10 to 100	10, 12, 15, 18, 20, 22, 24, 27, 30, 33, 39, 47, 56, 68, 82, 100.....	± 5%	\$160.00
Kit 3T		DK0003T					

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[02013J3R0ABSTR](#) [02015J1R2ABSTR](#) [04021JR05Z4STR\500](#) [400Z0R1AT100T](#) [400Z0R1PT100T](#) [400Z100FT16T](#) [400Z150FT16T](#)
[400Z170FT16T](#) [400Z180FT16T](#) [400Z1R8QT25T](#) [400Z2R0QT25T](#) [400Z2R4QT25T](#) [400Z3R0AT25T](#) [400Z4R7AT25T](#) [400Z5R6BT25T](#)
[400Z8R2BT16T](#) [04023J4R6ABSTR](#) [02013J1R8PBSTR](#) [02015J0R9PBSTR](#) [02015J1R0PBSTR](#) [0201ZK8R2BBWTR](#) [04021JR65PBSTR](#)
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[04025J2R2QBWTR\500](#) [06035J2R2QBSTR](#) [06033J6R8BBSTR](#) [04023J5R6ABSTR](#) [100B300GT500XT](#) [100B1R0CT500XT](#)
[02015J2R0PBSTR\500](#) [100B470GT500XT](#) [700B271JT200XT](#) [100B5R1DT500XT](#) [100B0R6DT500XT](#) [100B160FT500XT](#)
[100B3R3DT500XT](#) [100B180FT500XT](#) [100B2R0DT500XT](#) [04021J0R8P4STR\500](#)