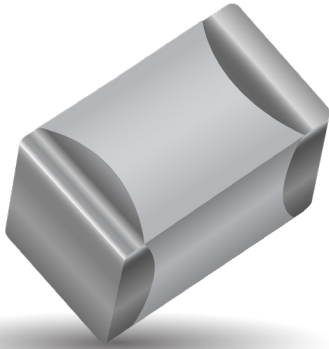


RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

700A Series NP0 Porcelain and Ceramic Multilayer Capacitors



FEATURES

- Case A Size (.055" x .055")
- Low ESR / ESL
- High Q
- Low Noise
- Capacitance Range 0.1 pF to 1000 pF
- Extended WVDC up to 250 VDC
- Zero TCC
- High Self-Resonance
- Established Reliability (QPL)

GENERAL DESCRIPTION

AVX, the industry leader, offers new improved ESR/ESL performance for the 700 A Series RF/Microwave Capacitors. The superior high self-resonance and zero TCC characteristic of this Series provide excellent performance over a broad range of RF and microwave applications requiring minimum drift. High density porcelain and ceramic constructions provide a rugged, hermetic package.

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

Typical circuit applications: Filters, Oscillators and Timing

PACKAGING OPTIONS



Tape & Reel



Vertical
Orientation
Tape & Reel



Cap-Pak®
(100 pcs)



ELECTRICAL SPECIFICATIONS

Temperature Coefficient (TCC)	0 ± 30 PPM/°C
Capacitance Range	0.1 pF to 1000 pF
Operating Temperature	-55°C to +125°C*
Quality Factor	Greater than 10,000 (0.1 pF to 100 pF) @ 1 MHz. Greater than 2000 (110 pF to 1000 pF) @ 1 MHz.
Insulation Resistance (IR)	0.1 pF to 470 pF 10 ⁶ Megohms min. @ 25°C at rated WVDC 10 ⁵ Megohms min. @ 125°C at rated WVDC 510 pF to 1000 pF 10 ⁵ Megohms min. @ 25°C at rated WVDC 10 ⁴ 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.
Solderability	Mil-STD-202, Method 208
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		Cap. Code	Cap. (pF)	Tol.	Rated WVDC	
			STD.	EXT.				STD.	EXT.				STD.	EXT.				STD.	EXT.
0R1	0.1	B	150	250	2R4	2.4	B, C, D	150	250	200	20	F, G, J, K, M	150	250	151	150	F, G, J, K, M	150	N/A
0R2	0.2				2R7	2.7				220	22				161	160			
0R3	0.3	B, C			3R0	3.0				240	24				181	180			
0R4	0.4				3R3	3.3				270	27				201	200			
0R5	0.5	B, C, D			3R6	3.6				300	30				221	220			
0R6	0.6				3R9	3.9				330	33				241	240			
0R7	0.7				4R3	4.3				360	36				271	270			
0R8	0.8				4R7	4.7				390	39				301	300			
0R9	0.9				5R1	5.1				430	43				331	330			
1R0	1.0				5R6	5.6				470	47				361	360			
1R1	1.1				6R2	6.2				510	51				391	390			
1R2	1.2				B, C, D	6R8	6.8			560	56				431	430			
1R3	1.3					7R5	7.5			620	62				471	470			
1R4	1.4					8R2	8.2			680	68				511	510			
1R5	1.5	9R1				9.1	750			75	561				560				
1R6	1.6	100				10	820			82	621				620				
1R7	1.7					110	11			910	91				681	680			
1R8	1.8					120	12			101	100				751	750			
1R9	1.9					130	13			111	110				821	820			
2R0	2.0	150				15	121				120				911	910			
2R1	2.1	160				16	131				130				102	1000			
2R2	2.2	180				18													

$v_{rms} = 0.707 \times WVDC$

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

note: extended wvdc does not apply to cdr products.

Capacitance values in bold type indicate porcelain dielectric. All other capacitance values indicate ceramic dielectric.

All 700 A Capacitors are available laser marked with AVX's identification, capacitance code and tolerance.

HOW TO ORDER

Series 700 **Case Size** A **Capacitance** 6R8 **Capacitance Tolerance Code** J **Voltage Rating** 150 **Termination Style Code** W **Laser Marking (Optional)** X **Packaging** T

See mechanical dimensions below

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

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

T = Tape and Reel, 1000 pc qty
TV = Vertical Orientation of Product Tape and Reel, 1000 pc qty
Cap-Pac® packaging (100 pc qty) is also available. For this option, leave this field blank

Please see 2nd Column Mechanical Configuration Table

RF/Microwave Capacitors

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MECHANICAL CONFIGURATION

AVX Series & Case Size	AVX Term. Code	MIL-PRF-55681	Case Size & Type	Outline ES W/T is a Termination Surface	Body Dimensions inches (mm)			Lead and Termination Dimensions and Material	
					Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials
700A	W	CDR12BP	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
700A	P	CDR12BP	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
700A	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
700A	CA	CDR11BP	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

NON-MAGNETIC CONFIGURATION

AVX Series & Case Size	AVX Term. Code	MIL-PRF-55681	Case Size & Type	Non-Magnetic Configuration	Body Dimensions inches (mm)			Lead and Termination Dimensions and Material	
					Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials
700A	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
700A	PN	Meets Requirements	A Non-Mag 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
700A	TN	Meets Requirements	A Non-Mag Solderable 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

*Capacitors with values greater than 100 pF contain a trace magnetic element that may exhibit weak magnetic properties.

RF/Microwave Capacitors

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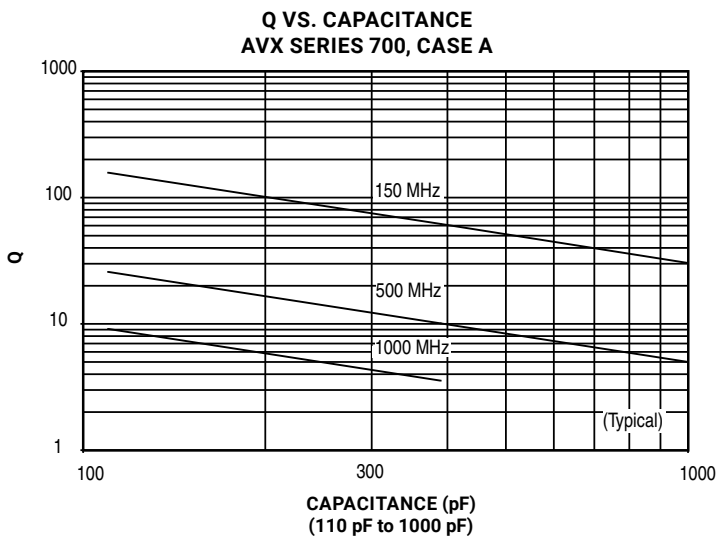
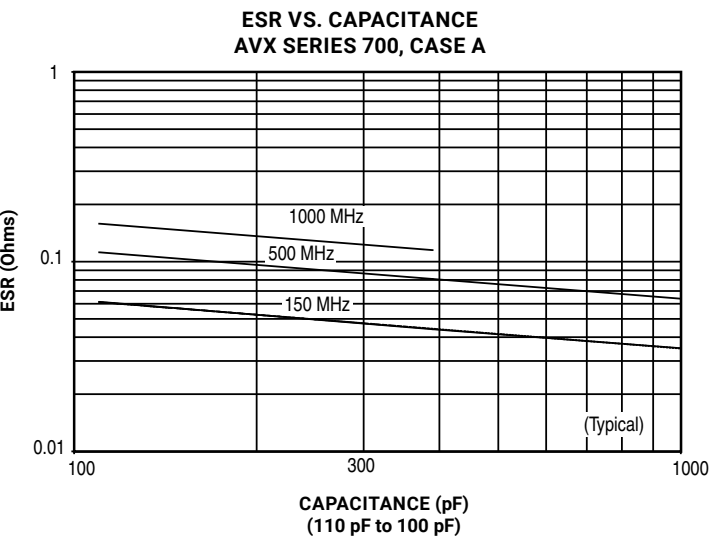
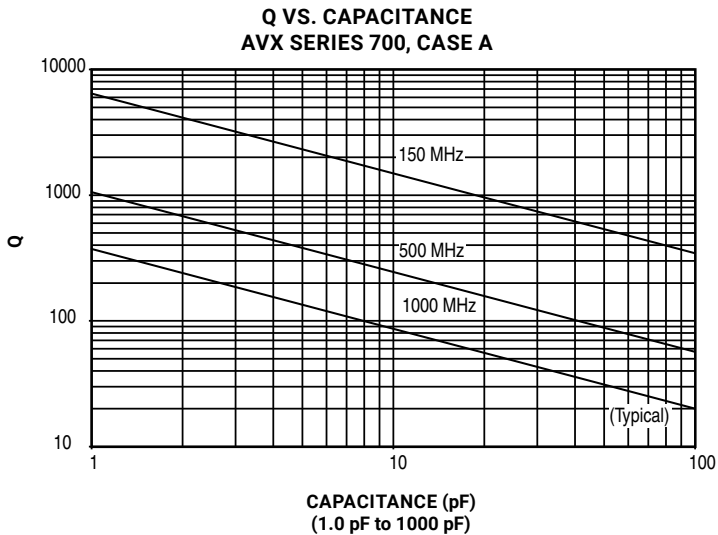
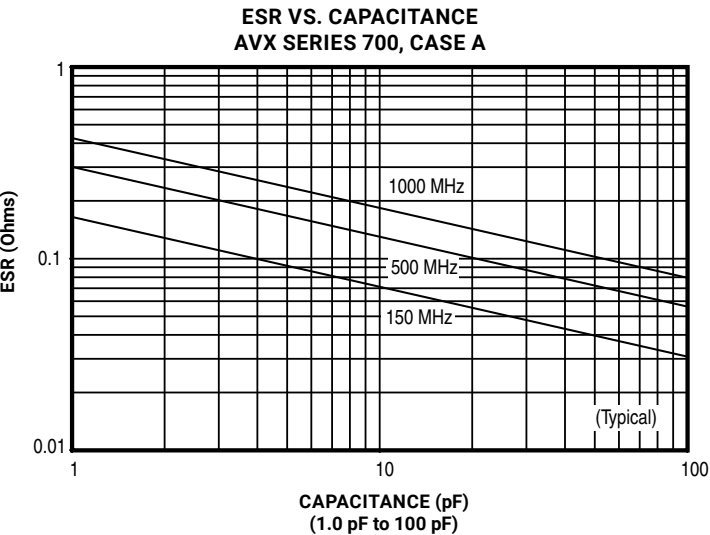


SUGGESTED MOUNTING PAD DIMENSIONS

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

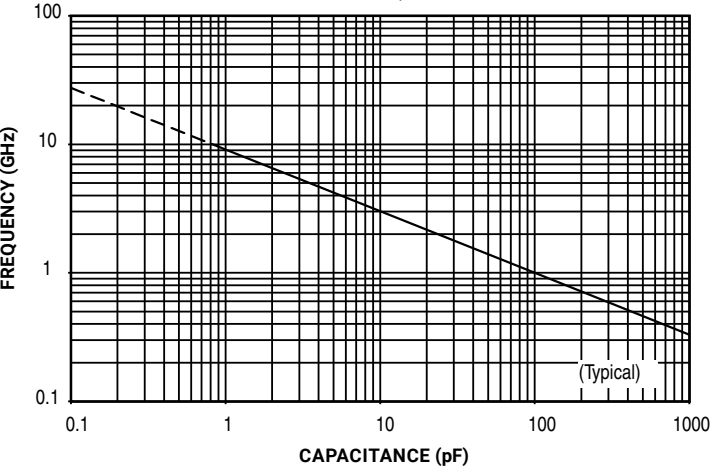


RF/Microwave Capacitors
RF/Microwave Multilayer Capacitors (MLC)
700A Series NP0 Porcelain and Ceramic Multilayer Capacitors

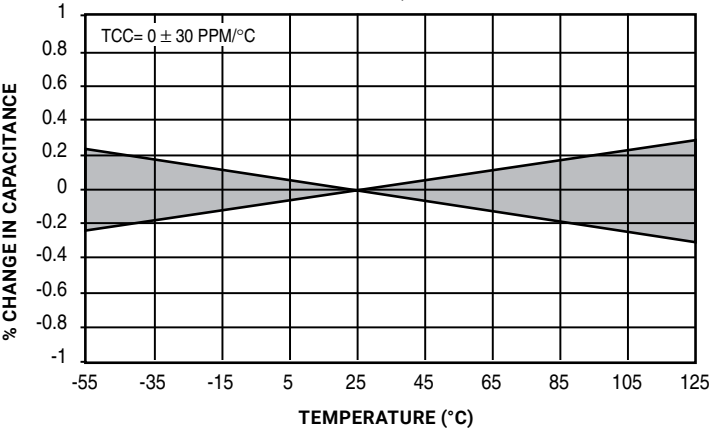


PERFORMANCE DATA

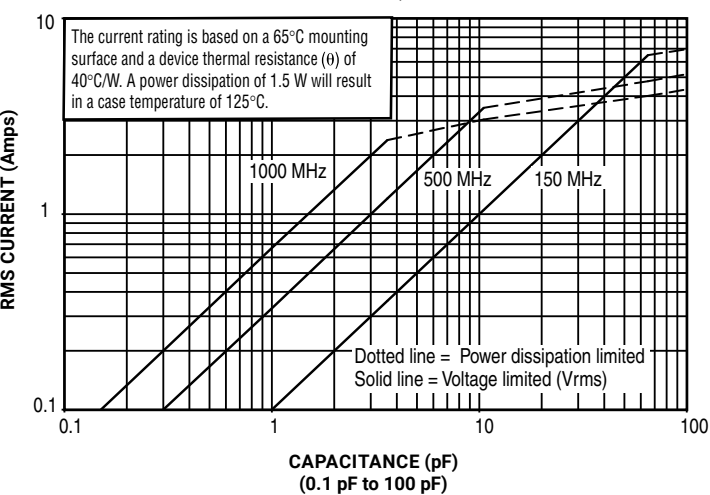
SERIES RESONANCE VS. CAPACITANCE
AVX SERIES 700, CASE A



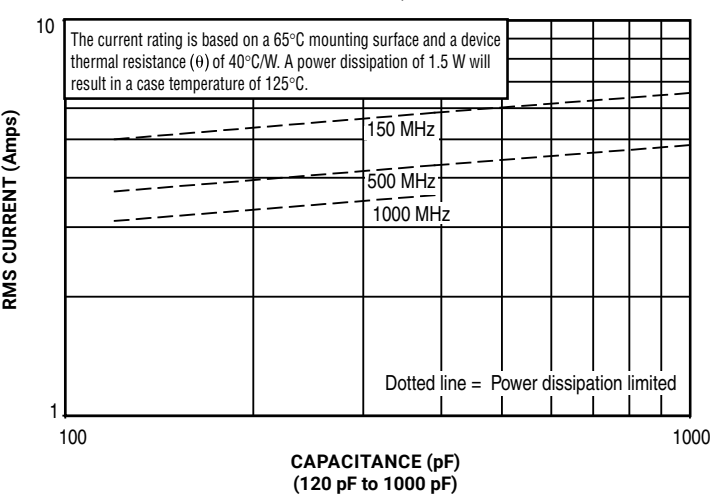
CAPACITANCE CHANGE VS. TEMPERATURE
AVX SERIES 700, CASE A



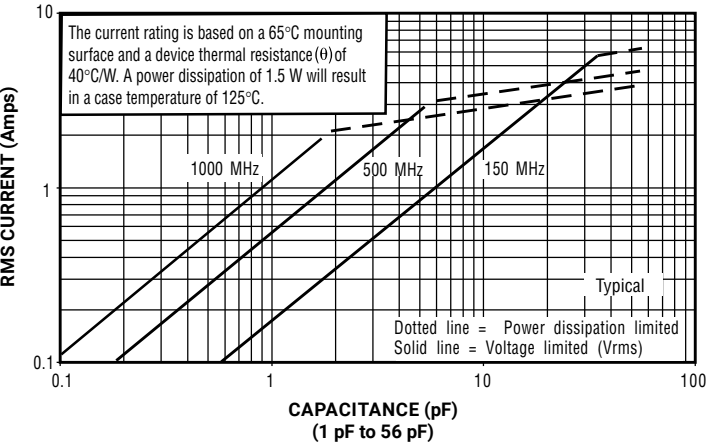
CURRENT RATING VS. CAPACITANCE
AVX SERIES 700, CASE A



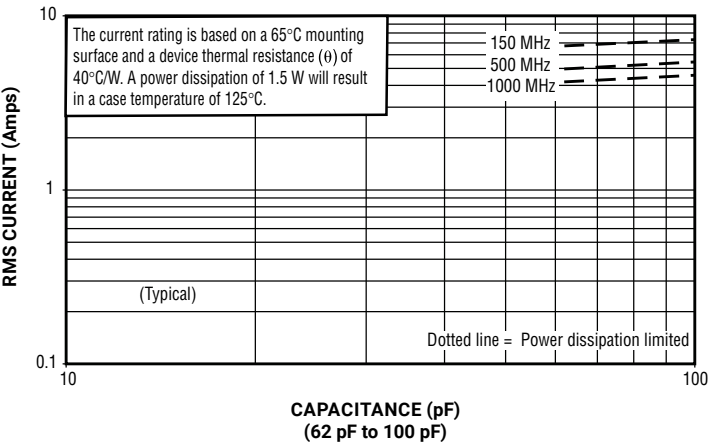
CURRENT RATING VS. CAPACITANCE
AVX SERIES 700, CASE A



CURRENT RATING VS. CAPACITANCE
AVX SERIES 700, CASE A, EXTENDED VOLTAGE



CURRENT RATING VS. CAPACITANCE
AVX SERIES 700, 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 4	-	DK0004	700A Porcelain and Ceramic 16 different values, 15 pc. 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	\$158.40
Kit 4T		DK0004T			1.5, 1.8, 2.0	±0.25	
Kit 5	-	DK0005	700A Porcelain and Ceramic 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	\$158.40
Kit 5T		DK0005T			3.9, 4.7, 5.6, 6.8, 8.2	±0.25	
					10	±5%	
Kit 6	-	DK0006	700A Porcelain and Ceramic 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%	\$158.40
Kit 6T		DK0006T					
Kit 7	-	DK0007	700A Porcelain and Ceramic 16 different values, 15 pc. min. per value	100 to 1000	100, 120, 150, 180, 200, 220, 240, 270 300, 330, 390, 470	±5%	\$158.40
Kit 7T		DK0007T			560, 680, 820, 1000.....	±10	