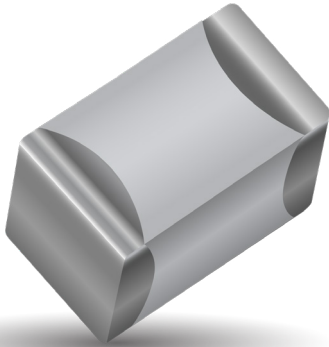


# RF/Microwave Capacitors

## 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

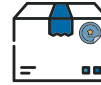
#### PACKAGING OPTIONS



Tape & Reel



Vertical  
Orientation  
Tape & Reel



Special  
Packaging  
Available



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 <sup>6</sup> Megohms min. @ 25°C at rated WVDC 10 <sup>5</sup> Megohms min. @ 125°C at rated WVDC 510 pF to 5100 pF 10 <sup>5</sup> Megohms min. @ 25°C at rated WVDC 10 <sup>4</sup> 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

Table with 18 columns: Cap. Code, Cap. (pF), Tol., Rated WVDC (STD., EXT.), Cap. Code, Cap. (pF), Tol., Rated WVDC (STD., EXT.), Cap. Code, Cap. (pF), Tol., Rated WVDC (STD., EXT.), Cap. Code, Cap. (pF), Tol., Rated WVDC (STD., EXT.). Rows include capacitance values from 0.1 to 2.2 pF and 20 to 180 pF, with various tolerance and voltage ratings.

v<sub>rms</sub> = 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 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: W
Termination Style Code: J
Packaging: X
Laser Marking: T

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Case Size: A
Capacitance: 6R8
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# RF/Microwave Capacitors

## RF/Microwave Multilayer Capacitors (MLC)

### 700A Series NP0 Porcelain and Ceramic Multilayer Capacitors



#### 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)			<b>RoHS Compliant</b> 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)			<b>RoHS Compliant</b> 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)			<b>RoHS Compliant</b> 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

## RF/Microwave Multilayer Capacitors (MLC)

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#### SUGGESTED MOUNTING PAD DIMENSIONS

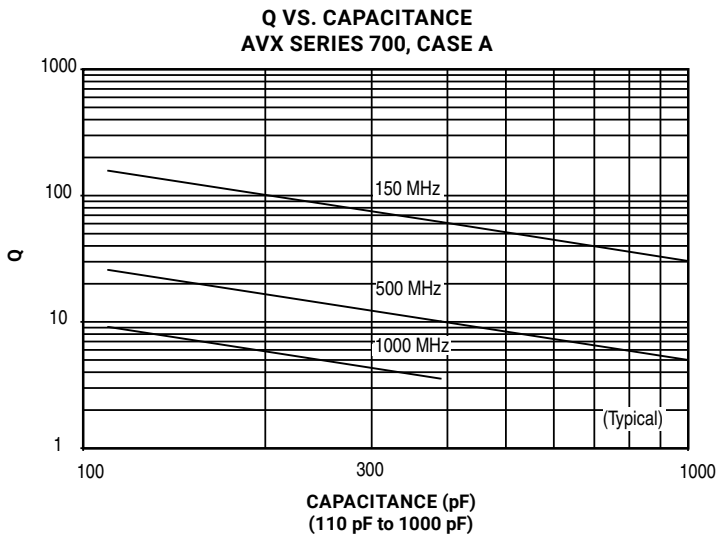
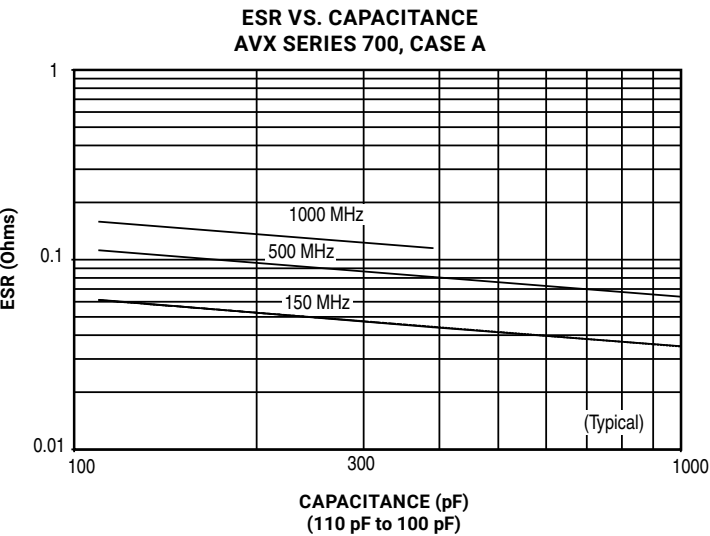
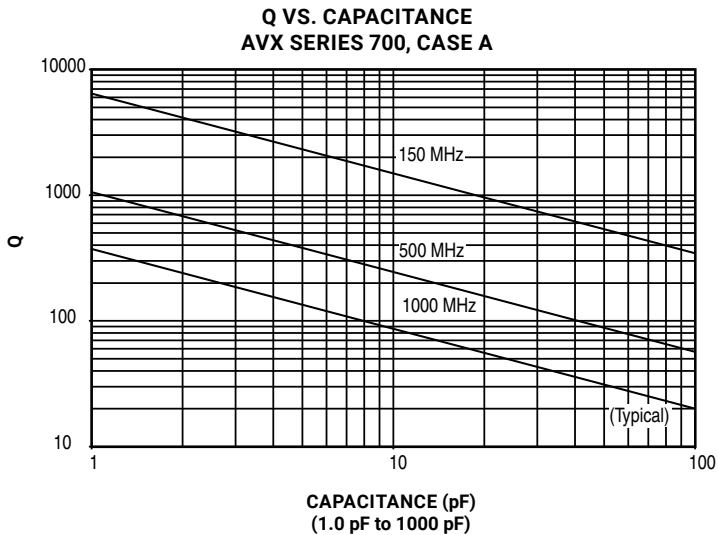
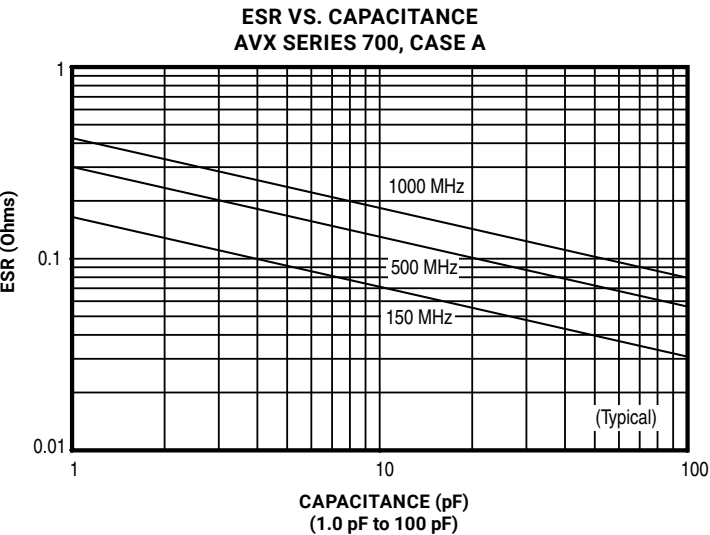
Horizontal Electrode Orientation

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

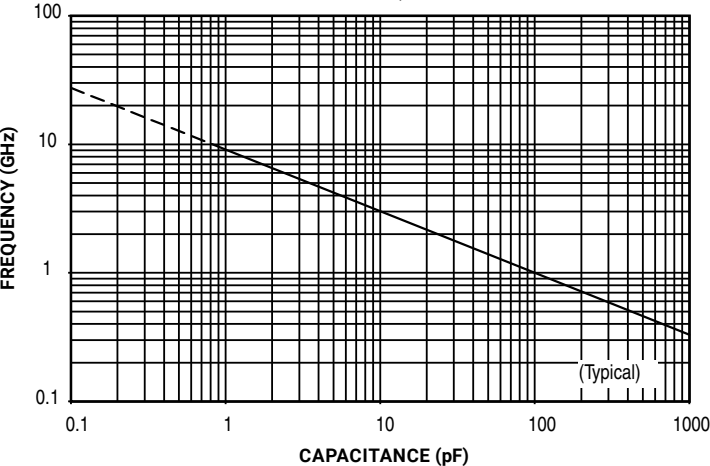


RF/Microwave Capacitors  
RF/Microwave Multilayer Capacitors (MLC)  
700A Series NP0 Porcelain and Ceramic Multilayer Capacitors

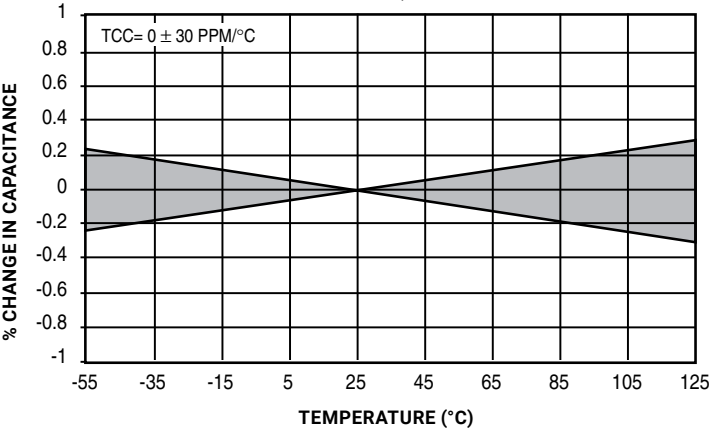


PERFORMANCE DATA

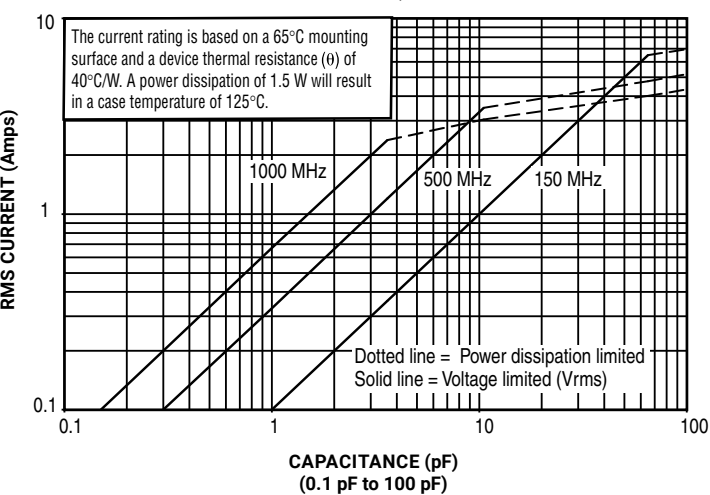
SERIES RESONANCE VS. CAPACITANCE  
AVX SERIES 700, CASE A



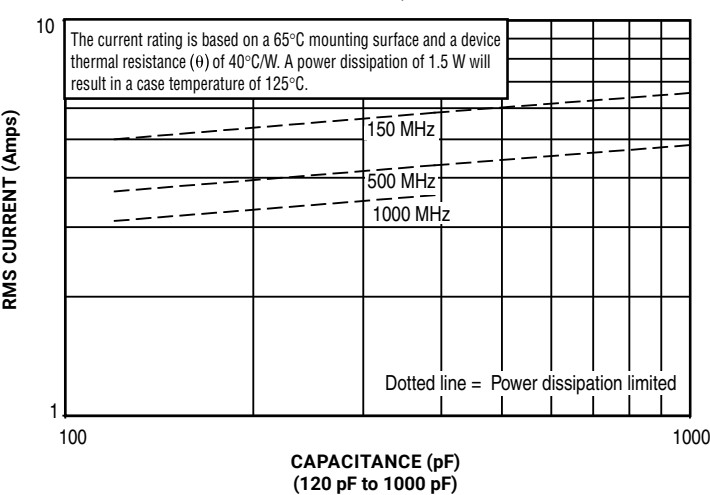
CAPACITANCE CHANGE VS. TEMPERATURE  
AVX SERIES 700, CASE A



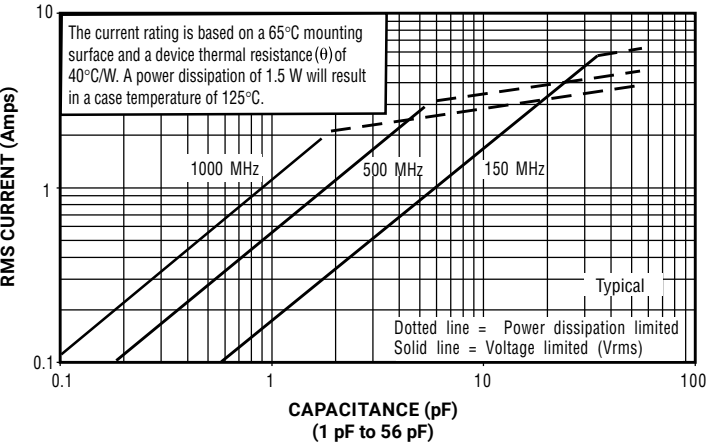
CURRENT RATING VS. CAPACITANCE  
AVX SERIES 700, CASE A



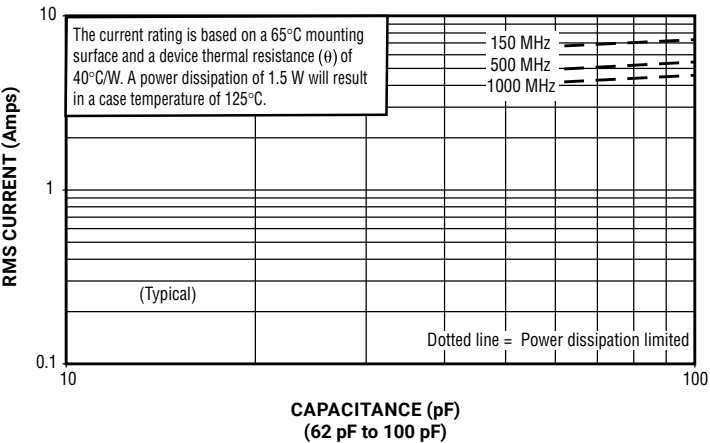
CURRENT RATING VS. CAPACITANCE  
AVX SERIES 700, CASE A



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



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



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





# RF/Microwave Capacitors

## RF/Microwave Multilayer Capacitors (MLC)

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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	