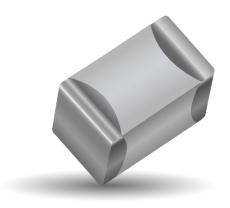
RF/Microwave Multilayer Capacitors (MLC)

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

KYOCERA 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

Orientation Tape & Reel

(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

Themal 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.

RF/Microwave Multilayer Capacitors (MLC)

700A Series NP0 Porcelain and Ceramic Multilayer Capacitors



CAPACITANCE VALUES

Cap.	Cap.	Tol.	Rat WV		Cap.	Cap.	Tol.	Ra ¹ WV	ted 'DC	Cap.	Cap.	Tol.	Rat WV		Cap.	Cap.	Tol.	Rat WV	
Code	(pF)		STD.	EXT.	Code	(pF)		STD.	EXT.	Code	(pF)		STD.	EXT.	Code	(pr)		STD.	EXT.
0R1	0.1	В			2R4	2.4				200	20			111	151	150			
0R2	0.2	, d		ED	2R7	2.7			EXTENDED VOLTAGE ED	220	22			VOLTAGE	161	160			
0R3	0.3	B, C		VOLTAGE	3R0	3.0			IGE	240	24			11	181	180			
0R4	0.4	Б, О		1	3R3	3.3			1	270	27			0	201	200			
0R5	0.5			ΛΟ/	3R6	3.6	В, С,		0	300	30				221	220			
0R6	0.6				3R9	3.9	D, C,		Q	330	33			250	241	240			
0R7	0.7			EXTENDED	4R3	4.3			Ş	360	36			200	271	270			
0R8	8.0			TEI	4R7	4.7			151	390	39			Q	301	300		150	
0R9	0.9			EX	5R1	5.1	5.6		EX	430	43			IDE	331	330		100	1
1R0	1.0			250 -	5R6	5.6			470	47	F, G,		Ε	361	360	F, G,			
1R1	1.1		150		6R2	6.2		150	250	510	51	J, K,	150	EXTENDED	391	390	J, K,		N/A
1R2	1.2			200	6R8	6.8	В, С,			560	56	M			431	430	M		.,,,
1R3	1.3	В, С,			7R5	7.5	J, K,			620	62			Ή.	471	470			
1R4	1.4	D		3E	8R2	8.2	M		ЭE	680	68			VOLT.	511	510			
1R5	1.5			Σ¥	9R1	9.1			ΙŽ	750	75				561	560			
1R6	1.6			VOLTAGE	100	10			VOLTAGE	820	82			200	621	620			
1R7	1.7			>	110	11			>	910	91			EXT.	681	680			
1R8	1.8			DEI	120	12	F, G,		DE	101	100			E)	751	750			
1R9	1.9			EN	130	13	J, K,		EN	111	110				821	820		50	
2R0	2.0			EXTENDED	150	15	М		EXTENDED	121	120			N/A	911	910			
2R1	2.1			Ш	160	16			Ш	131	130			, , .	102	1000			
2R2	2.2				180	18													

vrms = 0.707 x WVDC

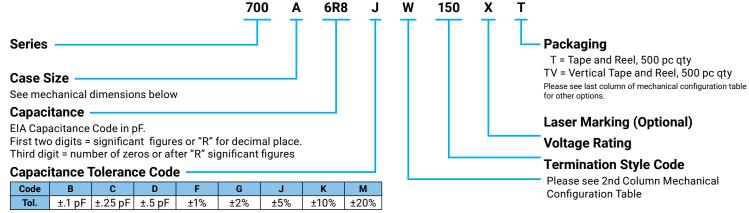
Special values, tolerances, higher WVDC and matching available. Please consult factory.

note: extended wvdc does not apply to cdr products.

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

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

HOW TO ORDER



The above part number refers to a 700A Series (case size A) 6.8 pF capacitor, J tolerance (+/-5%), 150 WVDC, with W termination, (Tin/Lead, Solder Plated over Nickel Barrier), laser marking and Tape and Reel Packaging.

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



MECHANICAL CONFIGURATION

Series &	Term.	MIL-PRF-55681	Case Size	Outline ES W/T is a	Body Dimensions inches (mm)				Lead and Terminat Dimensions and Ma		
Case Size	Case Size Code		& Type	Termination Surface	Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials	Pkg Type	Pkg Code
700A	W	CDR12BP	A Solder	$\begin{array}{c c} Y \to & \downarrow & & \downarrow \\ \hline & & \overline{\underline{\underline{\underline{W}}}} & \overline{\underline{\underline{\underline{W}}}} \\ \to & \downarrow & \downarrow & \uparrow \to \uparrow & \uparrow & \uparrow & \downarrow \end{array}$.055+.015010 (1.40+0.38-0.25)	.055 ±.015 (1.40 ±0.38)			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
700A	Р	CDR12BP	A Pellet	$\begin{array}{c c} Y \to & \downarrow & & \downarrow \\ \hline & & \overline{\underline{\underline{\underline{W}}}} & \overline{\underline{\underline{\underline{W}}}} \\ \to & \downarrow & \downarrow & \uparrow \to \uparrow & \uparrow & \uparrow & \downarrow \end{array}$.055+.025010 (1.40+0.64-0.25)	.055 ±.015 (1.40 ±0.38)	.057 (1.45)	.010+.010005	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
700A	Т	N/A	A Solderable Nickel Barrier	$\begin{array}{c c} Y \to & \downarrow & & \downarrow \\ \hline & & & w & & \downarrow \\ \to & \downarrow & \downarrow & \uparrow \to \uparrow & \uparrow & \uparrow & \downarrow \end{array}$.055+.015010 (1.40+0.38-0.25)	.055 ±.015 (1.40 ±0.38)	max.	(0.25+0.25-0.13)	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
700A	CA	CDR11BP	A Gold Chip	Y→ ← ↓ <u>w</u> → L ← ↑→ T ←	.055+.015010 (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-MAGNETIC CONFIGURATION

Series &	Term.	MIL-PRF-55681	Case Size	Non-Magnetic		Dimensions ches (mm)		Lead and Termination Dimensions and Material				
Case Size	ase Size Code MIL-FRF-55001 & Type	& Type	Configuration	Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials	Pkg Type	Pkg Code		
700A	WN	Meets Requirements	A Non-Mag Solder Plate	$\begin{array}{c c} Y \to & \downarrow & & \downarrow \\ \hline & & w & & \downarrow \\ \to & \downarrow & \downarrow & \uparrow \to \uparrow & \uparrow & \uparrow & \downarrow \end{array}$.055+.025010 (1.40+0.64-0.25)	.055 ±.015 (1.40 ±0.38)		.010+.010005 (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	
700A	PN	Meets Requirements	A ON Non-Mag Pellet	$\begin{array}{c c} Y \to \left\ \leftarrow & \downarrow \\ \hline & \overline{w} & \overline{m} \\ \to & L & \leftarrow \uparrow \to \mid T \mid \leftarrow \end{array}$.055+.025010 (1.40+0.64-0.25)	.055 ±.015 (1.40 ±0.38)	.057 (1.45) max.		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	
700A	TN	Meets Requirements	A Non-Mag Solderable Barrier	$\begin{array}{c c} Y \to & \downarrow & & \downarrow \\ \hline & & \overline{\underline{\underline{\underline{W}}}} & & \overline{\underline{\underline{\underline{W}}}} \\ \to & \downarrow & \downarrow & \uparrow \to \uparrow & \uparrow & \downarrow \\ \end{array}$.055+.015010 (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	

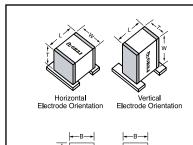
^{*}Capacitors with values greater than 100 pF contain a trace magnetic element that may exhibit weak magnetic properties.

RF/Microwave Multilayer Capacitors (MLC)

700A Series NP0 Porcelain and Ceramic Multilayer Capacitors



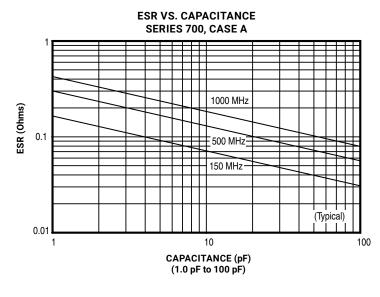
SUGGESTED MOUNTING PAD DIMENSIONS

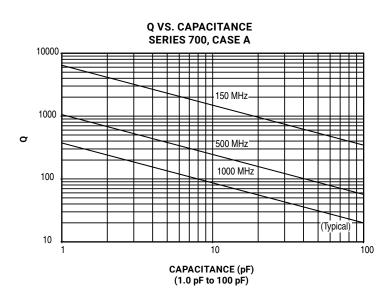


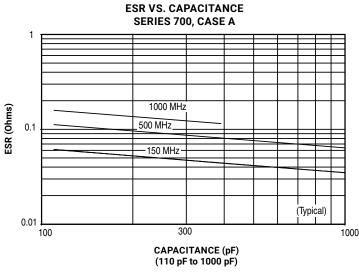
Case A											
Mount Type Pad Size A Min. B Min. C Min. D Min.											
Vertical Mount	Normal	.070	.050	.030	.130						
vertical Mount	High Density	.050	.030	.030	.090						
Horizontal Mount	Normal	.080	.050	.030	.130						
HOHZOHILAH MOUHL	High Density	.060	.030	.030	.090						

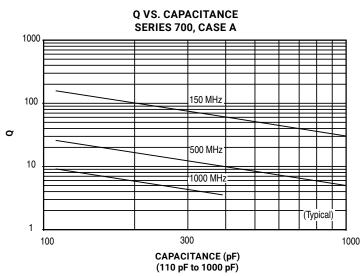
Dimensions are in inches.

PERFORMANCE DATA







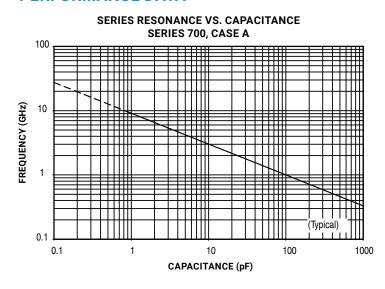


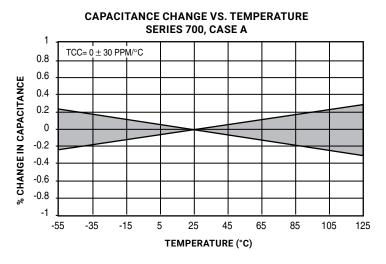
RF/Microwave Multilayer Capacitors (MLC)

700A Series NP0 Porcelain and Ceramic Multilayer Capacitors

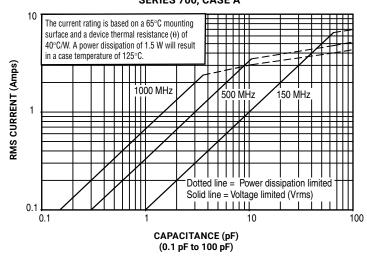


PERFORMANCE DATA

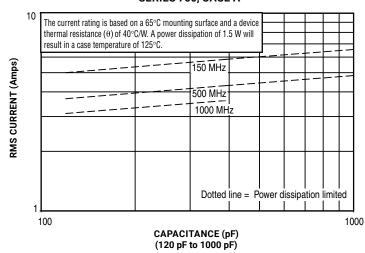




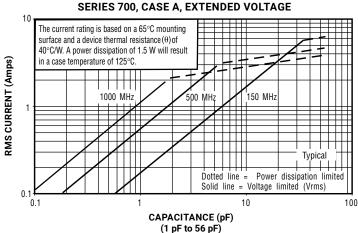
CURRENT RATING VS. CAPACITANCE SERIES 700, CASE A



CURRENT RATING VS. CAPACITANCE SERIES 700, CASE A



CURRENT RATING VS. CAPACITANCE



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

