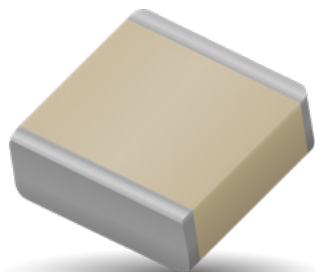


RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

700E Series NPO Porcelain High RF Power Multilayer Capacitors



GENERAL DESCRIPTION

KYOCERA AVX, the industry leader, offers new improved ESR/ESL performance for the 700 E Series RF Capacitors. This high Q multilayer capacitor is ultra-stable under high RF current and voltage applications with NPO performance. 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.

FUNCTIONAL APPLICATIONS

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

CIRCUIT APPLICATIONS

- HF/RF Power Amplifiers
- Plasma Chambers
- Transmitters
- Medical (MRI coils)
- Antenna Tuning

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. Voltage applied. 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., 25 lbs. typical, for 5 seconds in direction perpendicular to the termination surface of the capacitor. Test per MIL-STD-202, method 211.

FEATURES

- Case E Size (.380" x .380")
- Capacitance Range 1pF to 2200pF
- Extended WVDC up to 7200 VDC
- Low ESR/ESL
- High Q
- High RF Power
- Ultra-Stable Performance
- High RF Current/Voltage
- Available with Encapsulation Option*

* For leaded styles only

PACKAGING OPTIONS



Tape & Reel



Tray
(96 pcs)



ELECTRICAL SPECIFICATIONS

Temperature Coefficient (TCC)	0 ±30 PPM/°C (-55°C to +125°C)
Capacitance Range	1 pF to 2200 pF
Operating Temperature	-55°C to +125°C (No derating of working voltage).
Quality Factor	Greater than 10,000 (1 pF to 1000 pF) @ 1 MHz. Greater than 10,000 (1100 pF to 2200 pF) @ 1 KHz.
Insulation Resistance (IR)	1 pF to 2200 pF 10 ⁵ Megohms min. @ 25°C at 500 VDC 10 ⁴ Megohms min. @ 125°C at 500 VDC
Working Voltage (WVDC)	See Capacitance Values table
Dielectric Withstanding Voltage (DWV)	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
Aging Effects	None
Piezoelectric Effects	None
Capacitance Drift	± (0.02% or 0.02 pF), whichever is greater
Retrace	Less than ±(0.02% or 0.02 pF), whichever is greater.



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

RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

700E Series NPO Porcelain High RF Power Multilayer Capacitors



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.
1R0	1.0	B, C, D	3600	EXTENDED VOLTAGE	5R1	5.1	B, C, D	3600	EXTENDED VOLTAGE	390	39	F, G, J, K, M	3600	VOTAGE	271	270	F, G, J, K, M	3600	N/A
1R1	1.1				5R6	5.6				430	4				301	300			
1R2	1.2				6R2	6.2				470	47				331	330			
1R3	1.3				6R8	6.8				510	51				361	360			
1R4	1.4				7R5	7.5				560	56				391	390			
1R5	1.5				8R2	8.2				620	62				431	430			
1R6	1.6				9R1	9.1				680	68				471	470			
1R7	1.7				EXTENDED VOLTAGE	7200	F, G, J, K, M			3600	EXTENDED			511	510				
1R8	1.8													561	560				
1R9	1.9													621	620				
2R0	2.0			681					680										
2R1	2.1			751					750										
2R2	2.2			EXT.					5000					821	820				
2R4	2.4													911	910				
2R7	2.7													102	1000				
3R0	3.0													112	1100				
3R3	3.3			122					1200										
3R6	3.6			152	1500														
3R9	3.9			182	1800														
4R3	4.3			222	2200														
4R7	4.7																		

VRMS = 0.707 X WVDC

• SPECIAL VALUES, TOLERANCES, MATCHING, AND CAPACITOR ASSEMBLIES ARE AVAILABLE. • KYOCERA AVX'S CUSTOM POWER CAPACITOR ASSEMBLY CATALOG, LISTS ASSEMBLY OPTIONS. • DIFFERENT WORKING VOLTAGES ARE AVAILABLE • ENCAPSULATION OPTION AVAILABLE. PLEASE CONSULT FACTORY.

HOW TO ORDER

Series 700

Case Size E
See mechanical dimensions below

Capacitance 391
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 K

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

W 3600

X**

T

Packaging
T = Tape and Reel, 250 pc qty. Please see last Column Mechanical Configuration Table for Box and Tray Options

Laser Marking (Optional)

Voltage Rating

Termination Style Code
Please see 2nd Column Mechanical Configuration Table

**Optional

The above part number refers to a 700 E Series (case size E) 390 pF capacitor, K tolerance (±10%), 3600 WVDC, with W termination (Tin /Lead, Solder Plated over Nickel Barrier), laser marking and Tape and Reel Packaging.

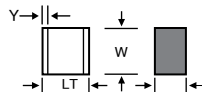
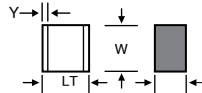
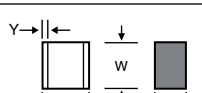
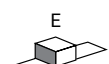
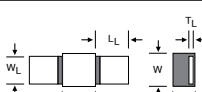
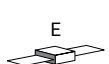
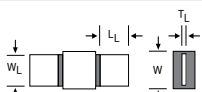
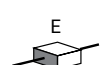
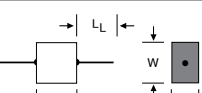
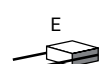
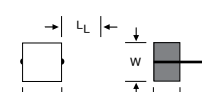
RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

700E Series NPO Porcelain High RF Power Multilayer Capacitors



MECHANICAL CONFIGURATION

Series & Case Size	Term. Code	Case Size & Type	Outline W/T is a Termination Surface	Body Dimensions inches (mm)			Lead and Termination Dimensions and Material		Pkg Type	Pkg Code		
				Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials				
700E	W	 Solder Plate		.380+.015 -.010 (9.65+0.38-0.25)	.380 ±.010 (9.65 ±0.25)	170 (4.32) max.	.040 (1.02) max.	Tin/Lead, Solder Plated over Nickel Barrier Termination	T&R, 250 pcs Tray, 24 or 96 pcs	T J24 J96		
700E	P	 Pellet		.380+.040 -.010 (9.65+1.02-0.25)				Heavy Tin/Lead Coated, over Nickel Barrier Termination	T&R, 250 pcs Tray, 24 or 96 pcs	T J24 J96		
700E	T	 Solderable Nickel Barrier		.380+.015 -.010 (9.65+0.38-0.25)				RoHS Compliant Tin Plated over Nickel Barrier Termination	T&R, 250 pcs Tray, 24 or 96 pcs	T J24 J96		
700E	MS	 Microstrip		.380+.035-.010 (9.65+0.89-0.25)			N/A	High Purity Silver Leads $L_L = .750$ (19.05) min $W_L = .350 \pm .010$ (8.89 ±0.25) $T_L = .010 \pm .005$ (0.25 ±0.13) Leads are Attached with High Temperature Solder.	Tray, 16 or 32 pcs	J16 J32		
700E	AR	 Axial Ribbon							Tray, 16 or 32 pcs	J16 J32		
700E	AW	 Axial Wire						Silver-plated Copper Leads Dia. = .032 ±.002 (.813 ±.051) $L_L = 2.25$ (57.2) min.	Box, 20 pcs	B20		
700E	RW	 Radial Wire						Silver-plated Copper Leads Dia. = .032 ±.002 (.813 ±.051) $L_L = 1.0$ (25.4) min.	Tray, 16 or 64 pcs	J16 J64		

Custom lead styles and lengths are available; consult factory. All leads are high purity silver attached with high temperature solder and are **RoHS** compliant.

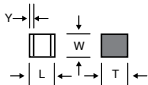
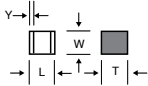
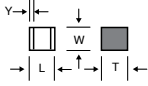
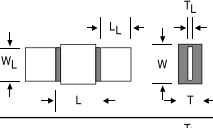
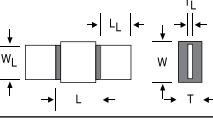
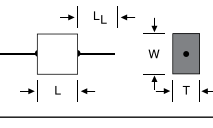
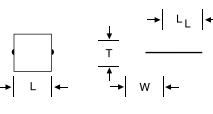
RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

700E Series NPO Porcelain High RF Power Multilayer Capacitors



MECHANICAL CONFIGURATION

Series & Case Size	Term. Code	Case Size & Type	Outline W/T is a Termination Surface	Body Dimensions inches (mm)			Lead and Termination Dimensions and Material		Pkg Type	Pkg Code		
				Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials				
700E	WN	 Non-Mag Solder Plate		.380+.015 -.010 (9.65+0.38-0.25)	.380 ±.010 (9.65 ±0.25)	.170 (4.32) max.	.040 (1.02) max.	Tin/Lead, Solder Plated over Non-Magnetic Barrier Termination	T&R, 250 pcs Tray, 24 or 96 pcs	T J24 J96		
700E	PN	 Non-Mag Pellet		.380+.040 -.010 (9.65+1.02-0.25)				Heavy Tin/Lead Coated, over Non-Magnetic Barrier Termination	T&R, 250 pcs Tray, 24 or 96 pcs	T J24 J96		
700E	TN	 Non-Mag Solderable Barrier		.380+.015 -.010 (9.65+0.38-0.25)				RoHS Compliant Tin Plated over Non-Magnetic Barrier Termination	T&R, 250 pcs Tray, 24 or 96 pcs	T J24 J96		
700E	MN	 Non-Mag Microstrip		.380+.035 -.010 (9.65+0.89-0.25)			N/A	High Purity Silver Leads $L_L = .750$ (19.05) min $W_L = .350 \pm .010$ (8.89 ±0.25) $T_L = .010 \pm .005$ (0.25 ±0.13) Leads are Attached with High Temperature Solder.	Tray, 16 or 32 pcs	J16 J32		
700E	AN	 Non-Mag Axial Ribbon							Tray, 16 or 32 pcs	J16 J32		
700E	BN	 Non-Mag Axial Wire						Silver-plated Copper Leads Dia. = .032 ±.002 (.813 ±.051) $L_L = 2.25$ (57.2) min.	Box, 20 pcs	B20		
700E	RN	 Non-Mag Radial Wire						Silver-plated Copper Leads Dia. = .032 ±.002 (.813 ±.051) $L_L = 1.0$ (25.4) min.	Tray, 16 or 64 pcs	J16 J64		

Custom lead styles and lengths are available; consult factory. All leads are high purity silver attached with high temperature solder and are **RoHS** compliant.

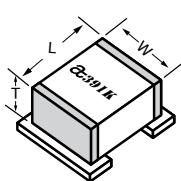
RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

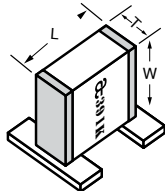
700E Series NPO Porcelain High RF Power Multilayer Capacitors



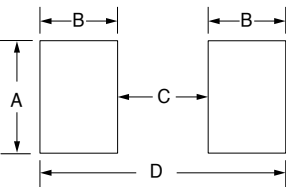
SUGGESTED MOUNTING PAD DIMENSIONS



Horizontal
Electrode Orientation



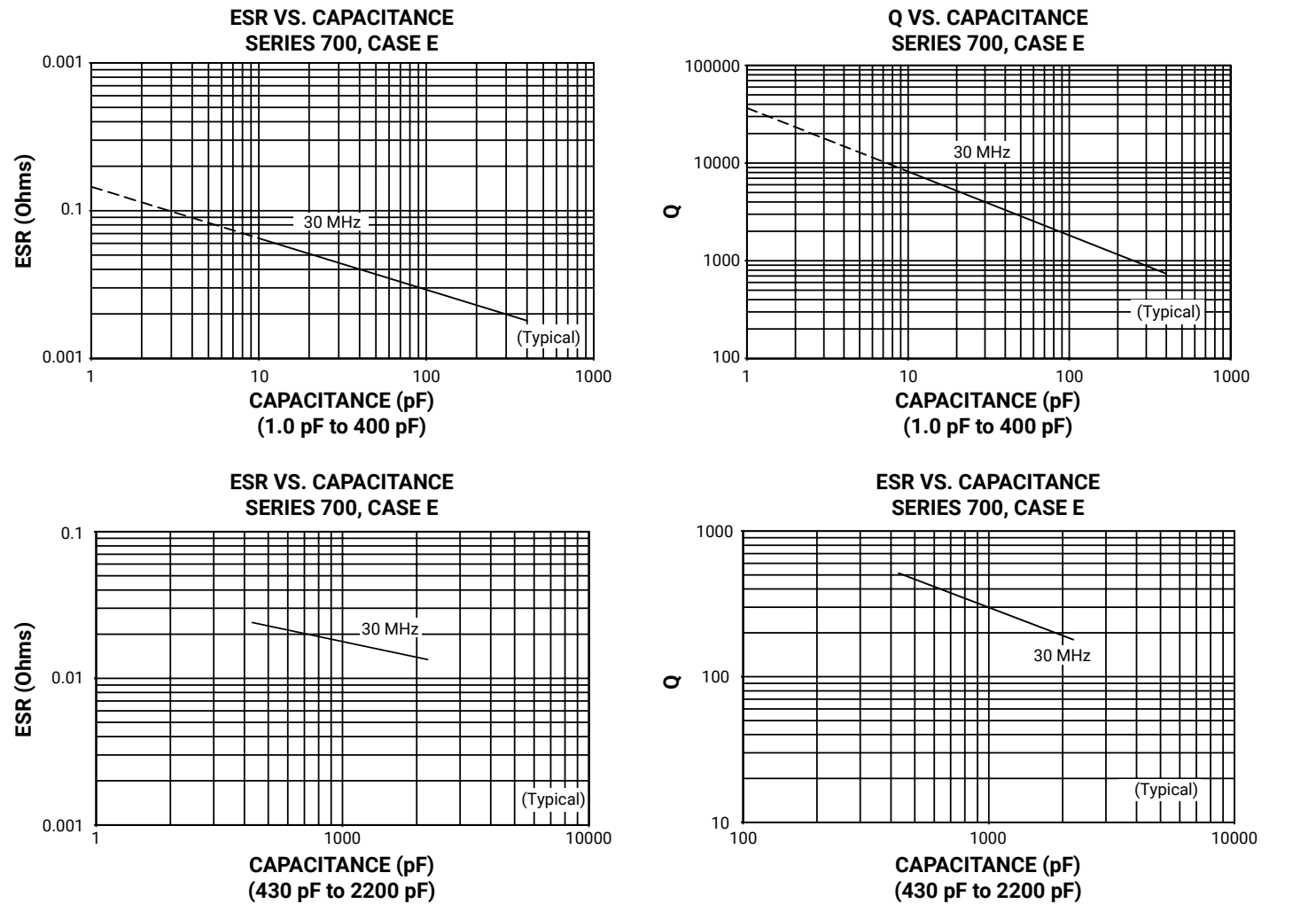
Vertical
Electrode Orientation



Mount Type	Case E				
	Pad Size	A Min.	B Min.	C Min.	D Min.
Vertical Mount	Normal	.185	.050	.325	.425
	High Density	.165	.030	.325	.385
Horizontal Mount	Normal	.405	.050	.325	.425
	High Density	.383	.030	.325	.385

Dimensions are in inches.

PERFORMANCE DATA



RF/Microwave Capacitors

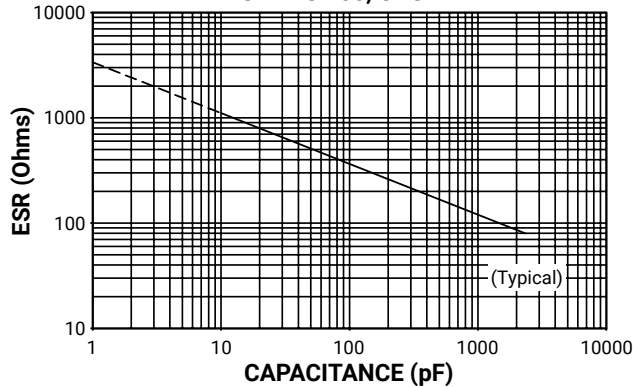
RF/Microwave Multilayer Capacitors (MLC)

700E Series NPO Porcelain High RF Power Multilayer Capacitors

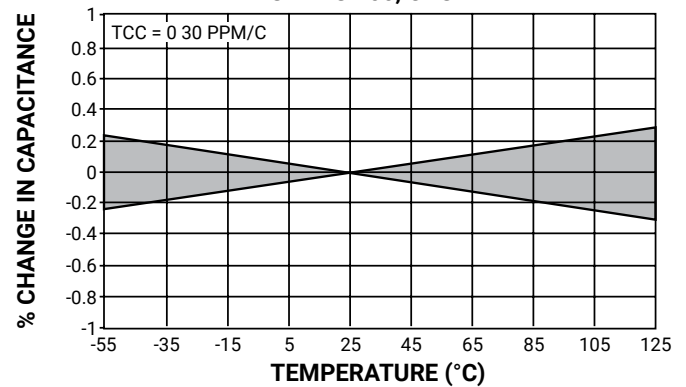


PERFORMANCE DATA

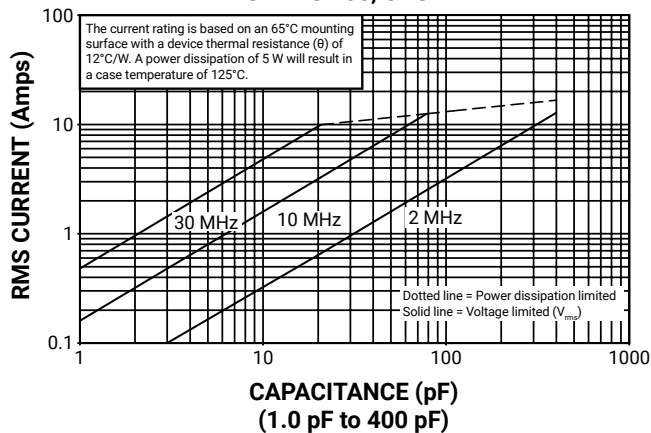
**SERIES RESONANCE VS. CAPACITANCE
SERIES 700, CASE E**



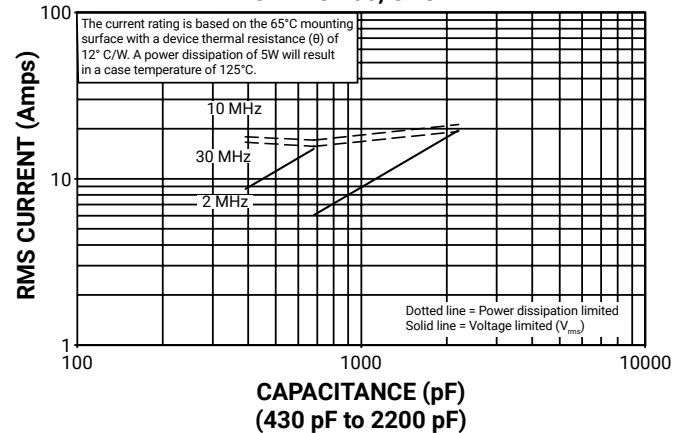
**CAPACITANCE CHANGE VS. TEMPERATURE
SERIES 700, CASE E**



**CURRENT RATING VS. CAPACITANCE
SERIES 700, CASE E**



**CURRENT RATING VS. CAPACITANCE
SERIES 700, CASE E**



**CURRENT RATING VS. CAPACITANCE
SERIES 700, CASE E, EXTENDED VOLTAGE**

