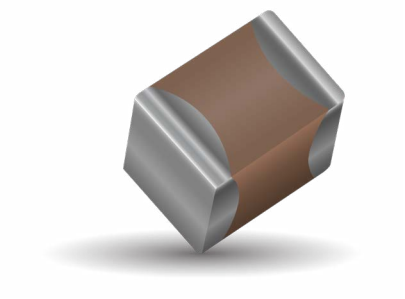
RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

900C Series X7R Ceramic RF Power Multilayer Capacitors



GENERAL DESCRIPTION

KYOCERA AVX, the industry leader, offers new improved ESR/ESL performance for the 900 C Series RF Capacitors. This Series exhibits superior volumetric efficiency, providing high levels of capacitance for HF/ RF power applications. Ceramic construction provides a rugged, hermetic package.

KYOCERA AVX offers an encapsulation option for applications requiring extended protection against arc-over and corona.

FEATURES

- Case C Size (.250" x .250")
- Low ESR / ESL
- Rugged Construction
- Encapsulation Option Available *
- Capacitance Range 0.01µF to 1 µF
- Mid-K
- High Reliability

FUNCTIONAL APPLICATIONS

- Bypass
- DC Blocking
- Coupling

TYPICAL CIRCUIT APPLICATIONS

- HF/RF Power Amplifiers
- High Frequency Switch Mode Power Supplies
- Medical Electronics.

*For leaded styles only.

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 Volts DC applied while subjected to an environment of 85°C with 85% relative humidity for 240 hours min.
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.

PACKAGING OPTIONS

Tape & Reel

Vertical Orientation Tape & Reel

Special Packaging Available

Cap-Pak® (100 pcs)

RoHS COMPLIANT

ELECTRICAL SPECIFICATIONS

Dissipation Factor (DF)	2.5% max. at 1 KHz
Temperature Coefficient of Capacitance (Tcc)	Less than ±15% (-55°C to +125°C)
Insulation Resistance (IR)	0.01 MFd to 1 MFd 1000 megohms min. @ +25°C at rated WVDC. 100 megohms min. @ +125°C at rated WVDC.
Working Voltage (WVDC)	See Capacitance Values Table
Dielectric Withstanding Voltage (DWV)	Case C: 250% of rated WVDC for 5 secs.
Aging Effects	3% maximum per decade hour
Piezoelectric Effects	Negligible
Dielectric Absorption	2% typical
Operating Temperature Range	-55°C to +125°C (No derating of working voltage)
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., 15 lbs. typical, for 5 seconds in direction perpendicular to the termina-tion surface of the capacitor. Test per MIL-STD-202, method 211.

CAPACITANCE VALUES

Cap. Code	Cap. (Mfd)	Tol.	Rated Wvdc
103	.010	K, M, N	300
153	.015		300
223	.022		300
333	.033		250
473	.047		250
683	.068		250
104	.10		200
154	.15		200
224	.22		200
334	.33		150
474	.47		150
684	.68		150
824	.82		100
105	1.0		100

Code	K	M	N
Tol.	±10%	±20%	±30%

VRMS = 0.707 X WVDC
- SPECIAL VALUES, TOLERANCES, HIGHER WVDC AND MATCHING AVAILABLE.
- ENCAPSULATION OPTION AVAILABLE. PLEASE CONSULT FACTORY.

HOW TO ORDER

900 C 105 M W 100 X T

Series

Case Size
See mechanical dimensions below

Capacitance
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

Code	K	M	N
Tol.	±10%	±20%	±30%

Packaging
T = Tape and Reel, 500 pc qty
Please see last Column Mechanical Configuration Table for other options

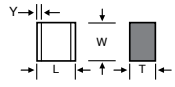
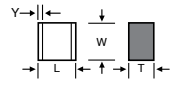
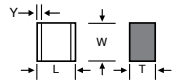
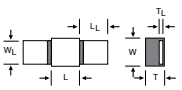
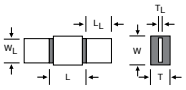
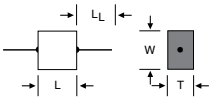
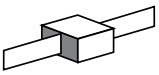
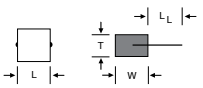
Laser Marking (Optional)

WVDC

Termination Style Code
Please see 2nd Column Mechanical Configuration Table

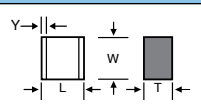
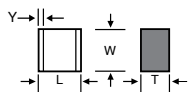
The above part number refers to a 900 C Series (case size C) 1.0 MFd capacitor, M tolerance (±20%), 100 WVDC, with W termination (Tin/Lead, Solder Plated over Nickel Barrier), laser marking and ATC Matrix Tray packaging.

MECHANICAL CONFIGURATIONS

Series & Case Size	Term. Code	Case Size & Type	Outlines W/T Is A Termination Surface	Body Dimensions Inches (Mm)			Lead And Termination Dimensions And Materials		Pkg Type & Qty	Pkg Code
				Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials		
900C	W	C Solder Plate		.230+.020 -.010 (5.84 +0.51 -0.25)	.250 ±.015 (6.35 ±0.38)	.145 (3.68) max. for capacitance values < 0.82 MFd; .165 (4.19) max. for capacitance values ≥0.82 MFd.	.040 (1.02) max.	Tin/Lead, Solder Plated over Nickel Barrier Termination	T & R 500 Cap PaK 36	T C36
900C	P	C Pellet		.230+.025 -.010 (5.84 +0.64 -0.25)				Heavy Tin/Lead Coated, over Nickel Barrier Termination	T & R 500 Cap PaK 36	T C36
900C	T	C Solderable Nickel Barrier		.230 +.020 -.010 (5.84 +0.51 -0.25				RoHS Compliant Tin Plated over Nickel Barrier Termination	T & R 500 Cap PaK 36	T C36
900C	MS	C Microstrip		.245 ±.025 (6.22 ±0.64)			N/A	High Purity Silver Leads LL = .500 (12.7) min. WL = .240 ±.005 (6.10 ±.127) TL = .004 ±.001 (.102 ±.025) Leads are Attached with High Temperature Solder.	Cap Pak 24	C24
900C	AR	C Axial Ribbon								
900C	AW	C Axial Wire						Silver-plated Copper Leads LL = 1.0 (25.4) min. Dia. = .032 ±.002 (0.81 ±0.05	Cap Pak 24	C24
900C	VA	C Veritical Axial Ribbon						Silver Leads LL = .500 (12.7) min. WL = * See below TL = .004 ±.001 (.102 ±.025)	Cap Pak 24	C24
900C	RW	C Radial Wire						Silver-plated Copper Leads LL = 1.0 (25.4) min. Dia. = .032 ±.002 (0.81 ±0.05)	Cap Pak 24	C24

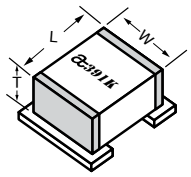
Custom lead styles and lengths are available; consult factory. All leads are high purity silver attached with high temperature solder and are RoHS compliant.
** WL = .110 (2.79) for capacitance values < 0.82 MFd.; WL = .130 (3.30) for capacitance values ≥ 0.82 MFd.

NON-MAGNETIC MECHANICAL CONFIGURATIONS

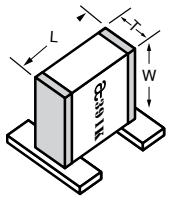
Series & Case Size	Term. Code	Case Size & Type	Outlines W/T Is A Termination Surface	Body Dimensions Inches (Mm)			Lead And Termination Dimensions And Materials		Pkg Type & Qty	Pkg Code
				Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials		
900C	WN	C Non-Mag Solder Plate		.230 +.025 -.010 (5.84 + 0.64-0.25)	.250 ±.015 (6.35 ±0.38)	.145 (3.68) max. < 0.82 MFd .165 (4.19) max. ≥0.82 MFd	.040 (1.02) max.	Tin/Lead, Solder Plated over Non-Magnetic Barrier Termination	T & R 500 Cap PaK 36	T C36
900C	TN	C Non-Mag Solderable Barrier		.230 +.025 -.010 (5.84 + 0.64-0.25)				**RoHS Compliant** Tin Plated over Non-Magnetic Barrier Termination	T & R 500 Cap PaK 36	T C36

Custom lead styles and lengths are available; consult factory. All leads are high purity silver attached with high temperature solder and are RoHS compliant. 105M 105M

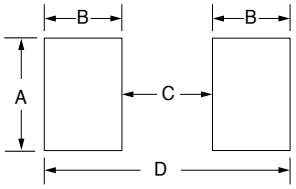
SUGGESTED MOUNTING PAD DIMENSIONS



Horizontal Electrode Orientation



Vertical Electrode Orientation



Case C Vertical Mount					
Cap Value	**Pad Size**	**A Min.**	**B Min.**	**C Min.**	**D Min.**
< .82 µF	Normal	.150	.050	.200	.300
	High Density	.130	.030	.200	.260
≥ .82 µF	Normal	.185	.050	.200	.300
	High Density	.165	.030	.200	.260

Horizontal Mount					
All Values	Normal	.150	.050	.200	.300
	High Density	.130	.030	.200	.260