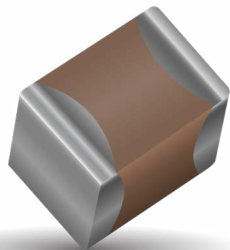


# RF/Microwave Capacitors

## 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 0.01 $\mu$ F to 1  $\mu$ F
- Mid-K
- High Reliability

#### FUNCTIONAL APPLICATIONS

- Bypass
- DC Blocking
- Coupling

#### TYPICAL CIRCUIT APPLICATIONS

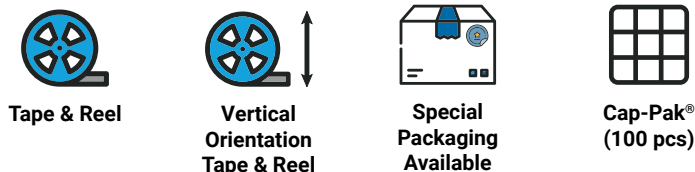
- HF/RF Power Amplifiers
- High Frequency Switch Mode Power Supplies
- Medical Electronics.

\*For leaded styles only.

#### ENVIRONMENTAL CHARACTERISTICS

<b>Thermal Shock</b>	MIL-STD-202, Method 107, Condition A.
<b>Moisture Resistance</b>	MIL-STD-202, Method 106.
<b>Low Voltage Humidity</b>	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.
<b>Life Test</b>	MIL-STD-202, Method 108, for 2000 hours, at 125°C. 200% WVDC applied.
<b>Solderability</b>	Mil-STD-202, Method 208
<b>Terminal Strength</b>	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



#### ELECTRICAL SPECIFICATIONS

<b>Dissipation Factor (DF)</b>	2.5% max. at 1 KHz
<b>Temperature Coefficient of Capacitance (Tcc)</b>	Less than $\pm 15\%$ (-55°C to +125°C)
<b>Insulation Resistance (IR)</b>	0.01 MFd to 1 MFd 1000 megohms min. @ +25°C at rated WVDC. 100 megohms min. @ +125°C at rated WVDC.
<b>Working Voltage (WVDC)</b>	See Capacitance Values Table
<b>Dielectric Withstanding Voltage (DWV)</b>	Case C: 250% of rated WVDC for 5 secs.
<b>Aging Effects</b>	3% maximum per decade hour
<b>Piezoelectric Effects</b>	Negligible
<b>Dielectric Absorption</b>	2% typical
<b>Operating Temperature Range</b>	-55°C to +125°C (No derating of working voltage)
<b>Termination Styles</b>	Available in various surface mount and leaded styles. See Mechanical Configurations
<b>Terminal Strength</b>	Terminations for chips and pellets withstand a pull of 10 lbs. min., 15 lbs. typical, for 5 seconds in direction perpendicular to the termination surface of the capacitor. Test per MIL-STD-202, method 211.

# RF/Microwave Capacitors

## RF/Microwave Multilayer Capacitors (MLC)

### 900C Series X7R Ceramic RF Power Multilayer Capacitors



#### CAPACITANCE VALUES

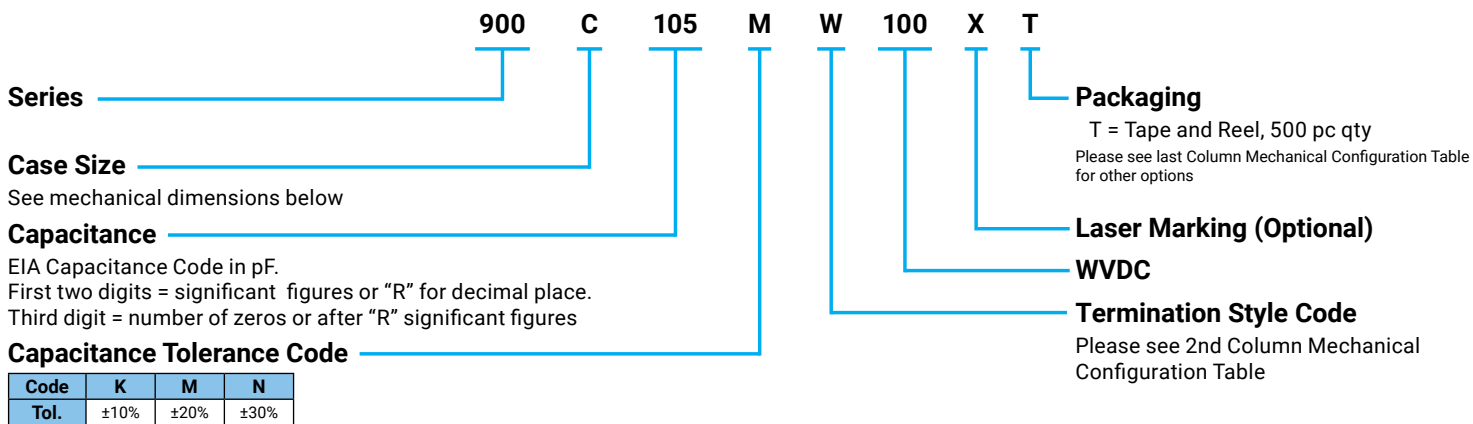
Cap. Code	Cap. (Mfd)	Tol.	Rated Wvdc
103	.010	K, M, N	300
153	.015		300
223	.022		300
333	.033		250
473	.047		250
683	.068		250
104	.10		200
154	.15		200
224	.22		200
334	.33		150
474	.47		150
684	.68		150
824	.82		100
105	1.0		100

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



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.

# RF/Microwave Capacitors

## RF/Microwave Multilayer Capacitors (MLC)

### 900C Series X7R Ceramic RF Power Multilayer Capacitors



#### 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	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;	.040 (1.02) max.	Tin/Lead, Solder Plated over Nickel Barrier Termination	T & R 500 Cap PaK 36	T C36
900C	P	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	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	Microstrip		.245 ±.025 (6.22 ±0.64)	.165 (4.19) max. for capacitance values ≥ 0.82 MFd.	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	Axial Ribbon								
900C	AW	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	Vertical Axial Ribbon						Silver Leads LL = .500 (12.7) min. WL = * See below TL = .004 ±.001 (.102 ±.025)	Cap Pak 24	C24
900C	RW	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.


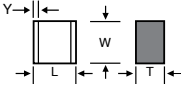

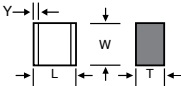
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## RF/Microwave Multilayer Capacitors (MLC)

### 900C Series X7R Ceramic RF Power Multilayer Capacitors

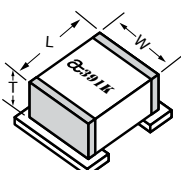


#### NON-MAGNETIC MECHANICAL CONFIGURATIONS

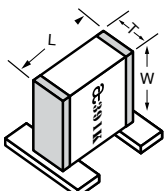
Series & Case Size	Term. Code	Case Size & Type	Outlines W/T Is A Termination Surface	Body Dimensions Inches (Mm)			Lead And Termination Dimensions And Materials		Pkg Type & Qty	Pkg Code
				Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials		
900C	WN	 Non-Mag Solder Plate		.230 +.025 -.010 (5.84 + 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	 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

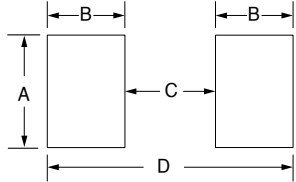
#### SUGGESTED MOUNTING PAD DIMENSIONS



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	Pad Size	A Min.	B Min.	C Min.	D Min.
All Values	Normal	.150	.050	.200	.300
	High Density	.130	.030	.200	.260