RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

800R Series NPO Ceramic Ultra-Low ESR Multilayer Capacitors





GENERAL DESCRIPTION

KYOCERA AVX's 800 R Series offers superb performance in demanding high RF power applications requiring consistent and reliable operation. The combination of optimized case geometry, highly conductive electrode formulations and proprietary dielectrics, yields the lowest ESR and superior heat transfer. KYOCERA AVX's new NPO low loss rugged dielectrics are designed to provide superior heat transfer in high RF power applications. Ultra-low ESR and superior thermal performance ensure that the 800 R Series products are your best choice for high RF power applications from UHF through microwave frequencies.

TYPICAL APPLICATIONS

- Homeland Security/Public Safety Radio (APCO-25)
- WiMAX/LTE*
- Satellite Systems
- Microwave Communications
- · Digital HD FM **Transmitters**
- Avionics
- · Digital HDTV Transmitters
- · Medical Electronics

TYPICAL CIRCUIT APPLICATIONS

- · High RF Power Filter Networks
- Matching Networks
- **Output Coupling** · DC Blocking
- Combiners
- Couplers
- · Antenna Coupling
- Bypassing

ENVIRONMENTAL TEST

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 D.C. 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

FEATURES

- Case R Size (.070" x .090")
- Optimized for highest self resonant frequency
- Capacitance Range 1 pF to 100 pF
- · Capable of highest RF Power
- · Rugged, reliable NPO dielectric · RoHS Compliant / Lead-Free
 - · Optimized for lowest ESR and superior heat transfer

PACKAGING OPTIONS



Tape & Reel



ENVIRONMENTAL CHARACTERISTICS

Quality Factor (Q)	> 2,000 @ 1 MHz
Temperature Coefficient of Capacitance (TCC)	0 ±30 PPM/°C (-55°C to +125°C)
Insulation Resistance (IR)	1 pF to 100 pF: 10 ⁵ Megohms min. @ +25°C at rated WVDC 10 ⁴ Megohms min. @ +125°C at rated WVDC
Working Voltage (WVDC)	500 WVDC
Dielectric Withstanding Voltage (DWV)	Case R: 250% of rated WVDC for 5 secs
Aging Effects	None
Piezoelectric Effects	None
Capacitance Drift	±(0.02% or 0.02 pF), whichever is greater
Operating Temperature Range	From -55°C to +125°C
Termination Styles	RoHS Compliant and Solder Plate See Mechanical Configurations
Terminal Strength	Terminations for chips withstand a pull of 5 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.

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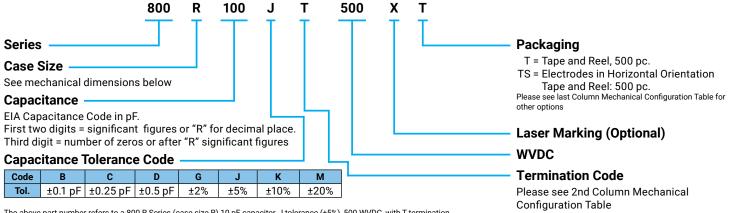
CAPACITANCE VALUES

Cap. Code	Cap.(pF)	Tol.	Rated WVDC	Cap. Code	Cap. (pF)	Tol.	Rated WVDC	Cap. Code	Cap. (pF)	Tol.	Rated WVDC
1R0	1.0			3R9	3.9			220	22		
1R1	1.1			4R3	4.3			240	24		
1R2	1.2			4R7	4.7			270	27		
1R3	1.3			5R1	5.1	B, C, D		300	30	G, J K, M	
1R4	1.4			5R6	5.6			330	33		
1R5	1.5			6R2	6.2			360	36		
1R6	1.6			6R8	6.8			390	39		
1R7	1.7			7R5	7.5	B, C, J,	500	430	43		500
1R8	1.8	B C D	E00	8R2	8.2	K, M		470	47		
1R9	1.9	B, C, D	500	9R1	9.1		500	510	51		500
2R0	2.0			100	10			560	56		
2R1	2.1			110	11			620	62		
2R2	2.2			120	12			680	68		
2R4	2.4			130	13	G, J		750	75		
2R7	2.7			150	15	K, M		820	82		
3R0	3.0			160	16			910	91		
3R3	3.3			180	18			101 100			
3R6	3.6			200	20						

VRMS = 0.707 X WVDC

SPECIAL VALUES, TOLERANCES AND MATCHING AVAILABLE. PLEASE CONSULT FACTORY.

HOW TO ORDER



The above part number refers to a 800 R Series (case size R) 10 pF capacitor, J tolerance (±5%), 500 WVDC, with T termination (Tin Plated over Nickel Barrier, RoHS Compliant), laser marked, and tape and reel packaging.

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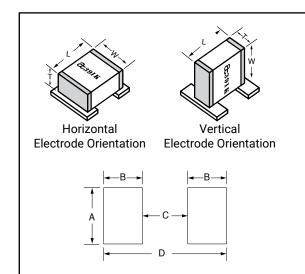
MECHANICAL CONFIGURATION

Series & Case Term. Size Code			I IS A LERMINATION	Body Dimensions inches (mm)			Lead and Dimensions	Pkg Type	Pkg Code	
Size	Code	& Type	Surface	Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials	& Qty	
800R	Т	R Solderable Nickel Barrier	→ L ← ↑ W ←	.070 ±.015 (1.78±0.38)	.090 ±.010 (2.29±0.25)	.115 (2.92) max.	.010+.010005 (0.25+0.25 - 0.13)	RoHS Compliant Tin Plated over Nickel Barrier Termination	T&R, 1000 or 500 pcs Horizontal T&R, 1000 or 500 pcs	T1K or T TS1K or TS
800R	W	R Solder Plate	Y→ ←	.070 ±.015 (1.78±0.38)	.090 ±.010 (2.29±0.25)	.115 (2.92) max.	.010+.010005 (0.25+0.25 - 0.13)	Tin/ Lead, Solder Plated over Nickel Barrier Termination	T&R, 1000 or 500 pcs Horizontal T&R, 1000 or 500 pcs	T1K or T TS1K or TS

NON-MAGNETIC CONFIGURATION

Series & Term. Cas		Case Size	Non-Magnetic	Body Dimensions inches (mm)			Lead and ^a Dimensions	Pkg Type	Pkg	
Case Size	Code	& Type	Configuration	Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials	& Qty	Code
800R	TN	R Non-Mag Solderable Barrier	Y→ ←	.070 ±.015 (1.78±0.38)	.090 ±.010 (2.29±0.25)	.115 (2.92) max.	.010+.010005 (0.25+0.25 - 0.13)	RoHS Compliant Tin Plated over Non-Magnetic Barrier Termination	T&R, 1000 or 500 pcs Horizontal T&R, 1000 or 500 pcs	T1K or T TS1K or TS

SUGGESTED MOUNTING PAD DIMENSIONS



Mount Type	Case R							
Mount Type	Pad Size	A Min.	B Min.	C Min.	D Min.			
Vertical Mount	Normal	.125	.050	.030	.130			
vertical Mount	High Density	.115	.030	.030	.090			
Horizontal Mount	Normal	.110	.050	.030	.130			
HOHZOHILAH MOUHL	High Density	.090	.030	.030	.090			

Dimensions are in inches.

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