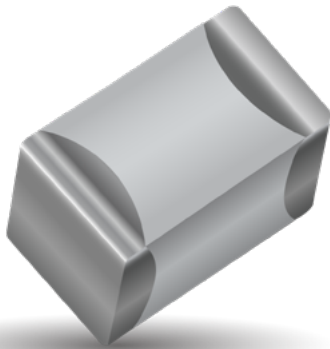


# RF/Microwave Capacitors

## RF/Microwave Multilayer Capacitors (MLC)

### 800A Series NP0 Porcelain, High RF Power Ultra-Low ESR



#### FEATURES

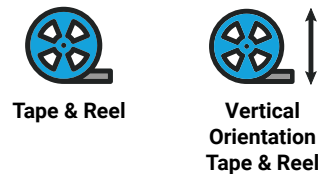
- Case A Size (.055" x .055")
- Low ESR / ESL
- High Q
- Low Noise
- Capacitance Range 0.1 pF to 100 pF
- Rated WVDC up to 250 VDC
- Zero TCC
- High Self-Resonance
- Established Reliability (QPL)

#### GENERAL DESCRIPTION

KYOCERA AVX 800 A Series offers superb performance in demanding high RF power applications requiring consistent and reliable operation. The combination of highly conductive metal electrode systems, optimized case geometries, and proprietary dielectrics, yields the lowest ESR. KYOCERA AVX new NP0 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 A Series products are your best choice for high RF power applications from UHF through microwave frequencies. Typical applications: UHF and Microwave Communications Systems, Wireless Communications, Public Safety Radio, Telecom, WiMAX, and Satellite Systems.

Typical circuit applications: High RF Power Filter Networks, Combiners, Couplers, Matching Networks, Output Coupling, Antenna Coupling, and DC Blocking and Bypassing.

#### PACKAGING OPTIONS



#### ELECTRICAL SPECIFICATIONS

<b>Temperature Coefficient (TCC)</b>	0 ± 30 PPM/°C
<b>Capacitance Range</b>	0.1 pF to 100 pF
<b>Operating Temperature</b>	-55°C to +125°C*
<b>Quality Factor</b>	Greater than 2,000 at 1 MHz (Cap Values ≤ 10 pF .0010 Max. @ 1 MHz) Cap Values > 10 pF .0005 Max. @ 1 MHz)
<b>Insulation Resistance (IR)</b>	0.1 pF to 470 pF 10 <sup>5</sup> Megohms min. @ 25°C at rated WVDC 10 <sup>5</sup> Megohms min. @ 125°C at rated WVDC
<b>Working Voltage (WVDC)</b>	See Capacitance Values table
<b>Dielectric Withstanding Voltage (DWV)</b>	250% of rated WVDC for 5 seconds
<b>Aging Effects</b>	None
<b>Piezoelectric Effects</b>	None
<b>Capacitance Drift</b>	± (0.02% or 0.02 pF), whichever is greater

#### 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 VDC applied while subjected to an environment of 85°C with 85% relative humidity for 240 hours
<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.

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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
0R1	0.1	B	250	2R2	2.2	B, C, D	250	160	16	F, G, J, K, M	250
0R2	0.2			2R4	2.4			180	18		
0R3	0.3	B, C		2R7	2.7			200	20		
0R4	0.4			3R0	3.0			220	22		
0R5	0.5	B, C, D		3R3	3.3			240	24		
0R6	0.6			3R6	3.6			270	27		
0R7	0.7			3R9	3.9			300	30		
0R8	0.8			4R3	4.3			330	33		
0R9	0.9			4R7	4.7			360	36		
1R0	1.0			5R1	5.1			390	39		
1R1	1.1			5R6	5.6			430	43		
1R2	1.2			6R2	6.2			470	47		
1R3	1.3		6R8	6.8	510	51					
1R4	1.4		7R5	7.5	560	56					
1R5	1.5		8R2	8.2	620	62					
1R6	1.6		9R1	9.1	680	68					
1R7	1.7	100	10	750	75						
1R8	1.8	110	11	820	82						
1R9	1.9	120	12	910	91						
2R0	2.0	130	13	101	100						
2R1	2.1	150	15								

## HOW TO ORDER

**Series** 800

**Case Size** A  
See mechanical dimensions below

**Capacitance** 100  
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** J  
Code: B, C, D, F, G, J, K, M  
Tol.: ±1 pF, ±.25 pF, ±.5 pF, ±1%, ±2%, ±5%, ±10%, ±20%

**Termination Style Code** T  
Please see 2nd Column Mechanical Configuration Table

**Voltage Rating** 250

**Laser Marking (Optional)** X

**Packaging** T  
T = Tape and Reel, 500 pc qty  
TV = Vertical Orientation of Product Tape and Reel, 500 pc qty  
For tray and box options, leave last position blank.  
Please see last column mechanical configuration table for package quantities

The above part number refers to a 800A Series (case size A) 10 pF capacitor, J tolerance (±5%), 250 WVDC, with T termination (Tin Plated over Nickel Barrier Termination), Laser Marking and Tape and Reel 4000 pc qty. Packaging

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#### MECHANICAL CONFIGURATION

Series & Case Size	Term. Code	Case Size & Type	Outline ES W/T is a Termination Surface	Body Dimensions inches (mm)			Lead and Termination Dimensions and Material		Pkg Type & Qty	Pkg Code
				Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials		
800A	T	A Solderable Nickel Barrier		.055+.015-.010 (1.40+0.38-0.25)	.055 ±.015 (1.40 ±0.38)	.057 (1.45) max.	.010+.010-.005 (0.25+0.25-.013)	RoHS Compliant Tin Plated over Nickel Barrier Termination	T&R, 4000 or 500 pcs Vertical T&R, 4000 or 500 pcs	T4K or T TV4K or TV
800A	W	A Solder Plate		.055+.015-.010 (1.40+0.38-0.25)	.055 ±.015 (1.40 ±0.38)					

#### NON-MAGNETIC CONFIGURATION

Series & Case Size	Term. Code	Case Size & Type	Non-Magnetic Configuration	Body Dimensions inches (mm)			Lead and Termination Dimensions and Material		Pkg Type & Qty	Pkg Code
				Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials		
800A	TN	A Non-Mag Solderable Barrier		.055+.025-.010 (1.40+0.64-0.25)	.055 ±.015 (1.40 ±0.38)	.057 (1.45) max.	.010+.010-.005 (0.25+0.25-.013)	RoHS Compliant Tin Plated over Non-Magnetic Barrier Termination	T&R, 4000 or 500 pcs Vertical T&R, 4000 or 500 pcs	T4K or T TV4K or TV

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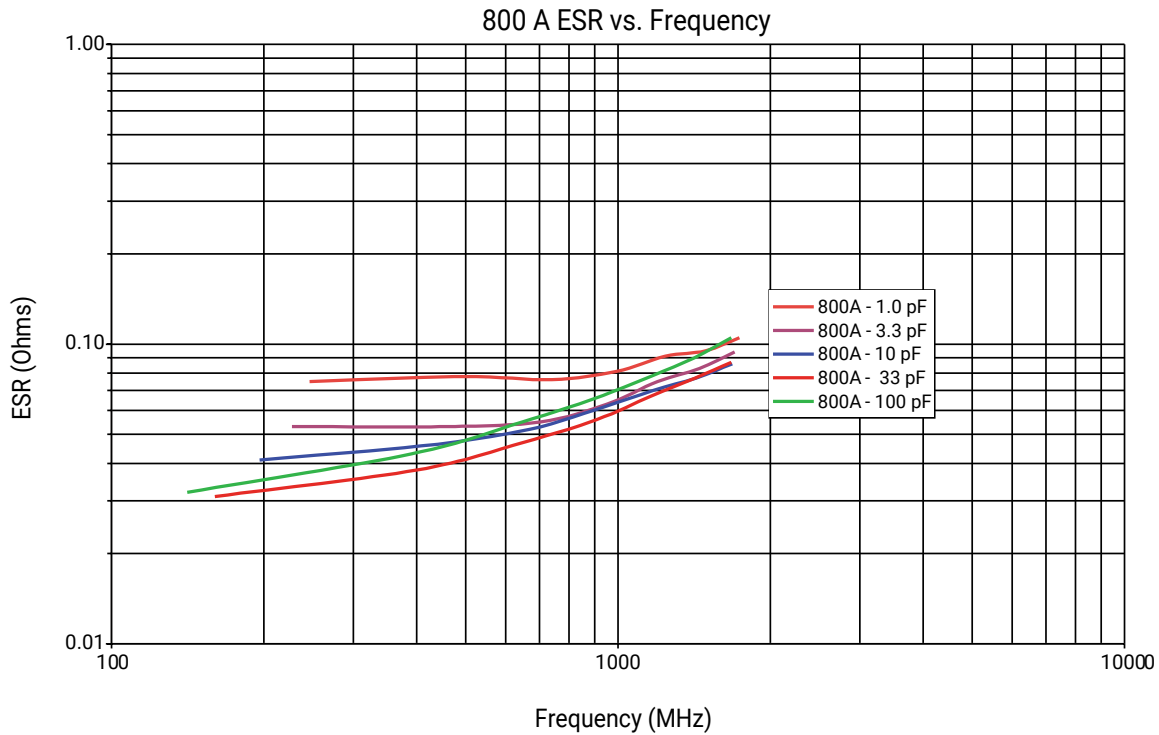
#### SUGGESTED MOUNTING PAD DIMENSIONS

Horizontal Electrode Orientation

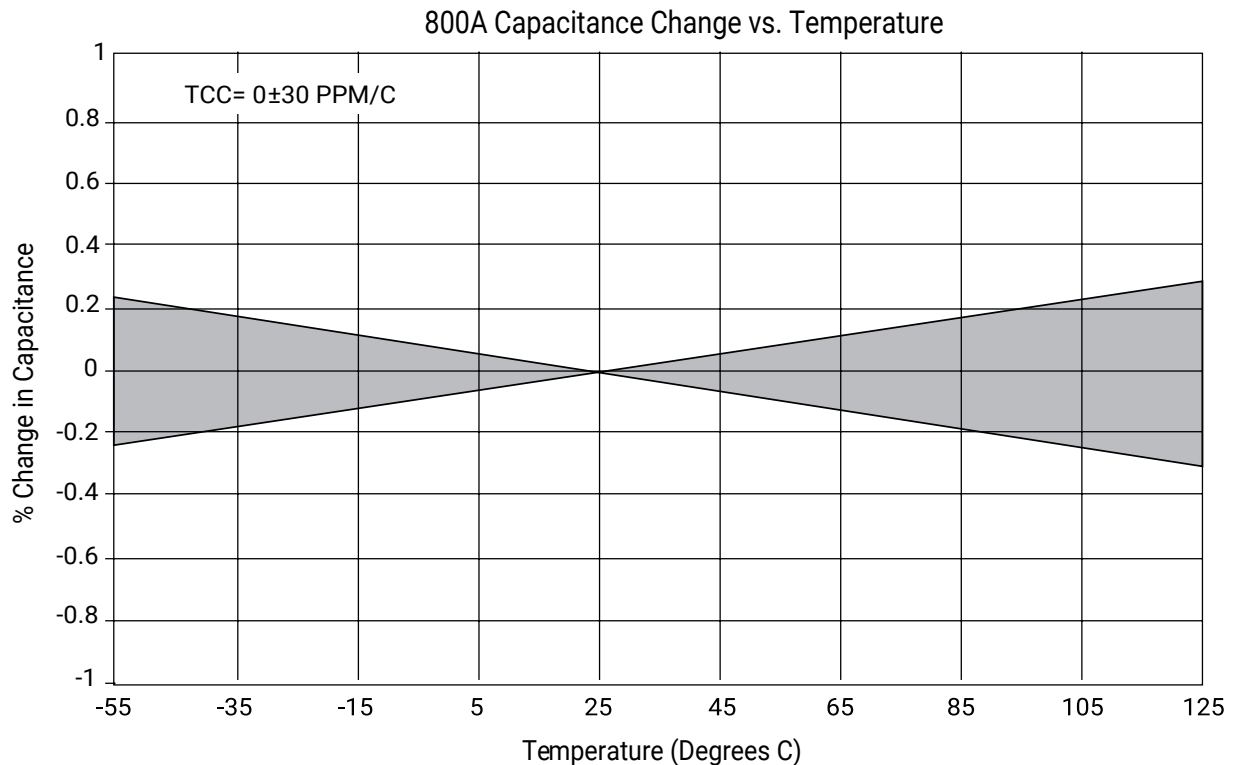
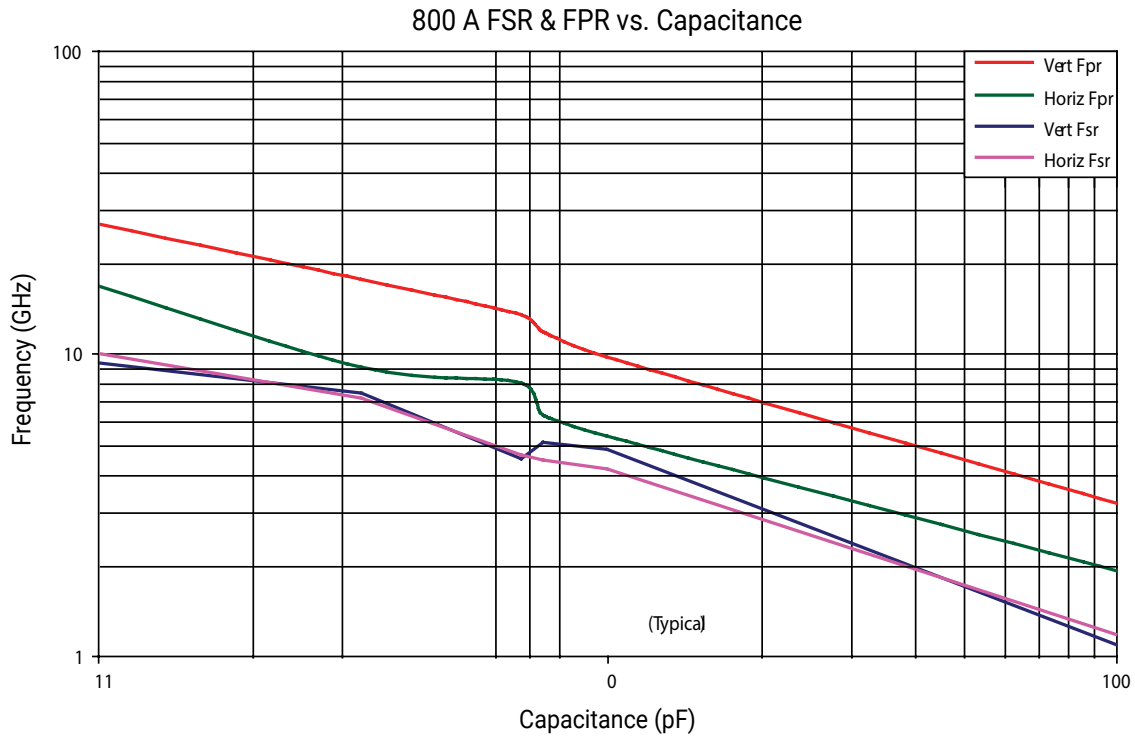
Vertical Electrode Orientation

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

Dimensions are in inches.



#### PERFORMANCE DATA



# RF/Microwave Capacitors

## RF/Microwave Multilayer Capacitors (MLC)

### 800A Series NPO Porcelain, High RF Power Ultra-Low ESR



#### SAMPLE KITS

Kit #	RoHS Compliant	Item Number	Description	Cap. Value Range (pF)	Cap Value (pF)	Tol.	Price
Kit 80T		DK0080T	800A NPO Ceramic High RF Power MLCs 16 different values, 15 pcs. min. per value	0.1 to 2.0	0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.5 ±0.1 ..... 1.6, 1.8, 2.0 .....	±0.1 ±0.25	\$135.00
Kit 81T		DK0081T	800A NPO Ceramic High RF Power MLCs 16 different values, 15 pcs. min. per value	1.0 to 10	1.0, 1.2, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, 3.0, 3.3..... 3.9, 4.7, 5.6, 6.8, 8.2 .....	±0.1 ±0.25	\$135.00
Kit 82T		DK0082T	800A NPO Ceramic High RF Power MLCs 16 different values, 15 pcs. min. per value	10 to 100	10, 12, 15, 18, 20, 22, 24, 27, 30, 33, 39, 47, 56, 68, 82, 100 .....	±5%	\$135.00