

# RF/Microwave Capacitors

## RF/Microwave Multilayer Capacitors (MLC)

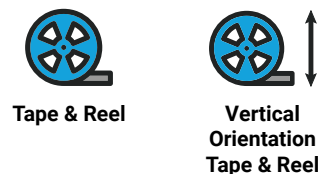
### 800B Series NPO Porcelain, High RF Power Ultra-Low ESR



#### FEATURES

- Case B Size (.110" x .110")
- Rugged, reliable NPO dielectric
- Case optimized for highest self resonant frequency
- Capacitance Range 0.1 pF to 1000 pF
- Lowest ESR
- Capable of highest RF Power
- RoHS Compliant/Lead-Free

#### PACKAGING OPTIONS



#### GENERAL DESCRIPTION

KYOCERA AVX's 800B 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'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 insure that the 800B Series products are your best choice for high RF power applications from VHF through microwave frequencies.

#### TYPICAL APPLICATIONS

- Avionics
- Public Safety Radio
- Wireless Communications
- VHF / UHF / HDTV Broadcast Transmitters
- Telecom
- WiMAX
- Microwave Communication Systems and Satellite Systems

#### TYPICAL CIRCUIT APPLICATIONS

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

#### ENVIRONMENTAL TEST

<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

#### ENVIRONMENTAL CHARACTERISTICS

<b>Quality Factor</b>	Greater than 2,000 at 1 MHz (applies to $\geq 10$ pf only)
<b>Temperature Coefficient of Capacitance (TCC)</b>	0 $\pm$ 30 PPM/ $^{\circ}$ C (-55 $^{\circ}$ C to +125 $^{\circ}$ C)
<b>Insulation Resistance (IR)</b>	0.1 pF to 1000 pF: 10 <sup>5</sup> Megohms min. @ +25 $^{\circ}$ C at rated WVDC 10 <sup>4</sup> Megohms min. @ +125 $^{\circ}$ C at rated WVDC
<b>Working Voltage (WVDC)</b>	See Capacitance Values Table
<b>Dielectric Withstanding Voltage (DWV)</b>	Case B: 250% of rated WVDC for 5 secs
<b>Retrace</b>	Less than $\pm$ (0.02% or 0.02 pF), whichever is greater
<b>Aging Effects</b>	None
<b>Piezoelectric Effects</b>	None
<b>Capacitance Drift</b>	$\pm$ (0.02% or 0.02 pF), whichever is greater
<b>Operating Temperature Range</b>	From -55 $^{\circ}$ C to +125 $^{\circ}$ C (No derating of working voltage)
<b>Termination Styles</b>	See Mechanical Configurations
<b>Terminal Strength</b>	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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### 800B Series NP0 Porcelain, High RF Power Ultra-Low ESR



## 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
0R1	0.1	B	500	2R4	2.4	B, C, D	500	200	20	F, G, J, K, M	500	151	150	F, G, J, K, M	300
0R2	0.2			2R7	2.7			220	22			161	160		
0R3	0.3	B, C		3R0	3.0			240	24			181	180		
0R4	0.4			3R3	3.3			270	27			201	200		
0R5	0.5	B, C, D		3R6	3.6			300	30			221	220		
0R6	0.6			3R9	3.9			330	33			241	240		
0R7	0.7			4R3	4.3			360	36			271	270		
0R8	0.8			4R7	4.7			390	39			301	300		
0R9	0.9			5R1	5.1			430	43			331	330		
1R0	1.0			5R6	5.6			470	47			361	360		
1R1	1.1		6R2	6.2	510	51	391	390							
1R2	1.2		B, C, D	6R8	6.8	560	56	431	430						
1R3	1.3			7R5	7.5	620	62	471	470						
1R4	1.4			B, C, J, K, M	8R2	8.2	680	68	511	510					
1R5	1.5	9R1			9.1	750	75	561	560						
1R6	1.6	F, G, J, K, M		100	10	820	82	621	620						
1R7	1.7			110	11	910	91	681	680						
1R8	1.8			120	12	101	100	751	750						
1R9	1.9			130	13	111	110	821	820						
2R0	2.0			150	15	121	120	911	910						
2R1	2.1			160	16	131	130	102	1000						
2R2	2.2		180	18											

VRMS = 0.707 X WVDC

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

## HOW TO ORDER

Series **800** Case Size **B** Capacitance **910** Capacitance Tolerance Code **J** Rated WVDC **500** Termination Code **T** Laser Marking (Optional) **X** Packaging **T**

See mechanical dimensions below

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

Code	B	C	D	F	G	J	K	M
Tol.	±0.1 pF	±0.25 pF	±0.5 pF	±1%	±2%	±5%	±10%	±20%

Please see 2nd Column Mechanical Configuration Table

The above part number refers to a 800 B Series (case size B) 91 pF capacitor, J tolerance (±5%), 500 WVDC, with T termination (Tin Plated over Nickel Barrier Termination, RoHS Compliant), laser marking and tape and reel 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		
800B	T	B Solderable Nickel Barrier		.110+.020-.010 (2.79+0.51-0.25)	.110 ±.015 (2.79 ±0.38)	.070 (1.78) max.	.015 (0.38) ±.010 (0.25)	RoHS Compliant Tin Plated over Nickel Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs	T1K or T TV1K or TV
800B	W	B Solder Plate		.110+.020-.010 (2.79+0.51-0.25)	.110 ±.015 (2.79 ±0.38)				Tin/ Lead, Solder Plated over Nickel Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs

#### 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		
800B	TN	B Non-Mag Solderable Barrier		.110+.020-.010 (2.79+0.51-0.25)	.110 ±.015 (2.79 ±0.38)	.070 (1.78) max.	.015 (0.38) ±.010 (0.25)	RoHS Compliant Tin Plated over Non-Magnetic Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs	T1K or T TV1K or TV

#### SUGGESTED MOUNTING PAD DIMENSIONS

Horizontal Electrode Orientation

Vertical Electrode Orientation

Case B Vertical Mount					
Cap Value .43	Pad Size	A Min.	B Min.	C Min.	D Min.
All Values	Normal	.090 (2.29)	.050 (1.27)	.075 (1.91)	.175 (4.45)
	High Density	.070 (1.78)	.030 (.762)	.075 (1.91)	.135 (3.43)

inches (mm)

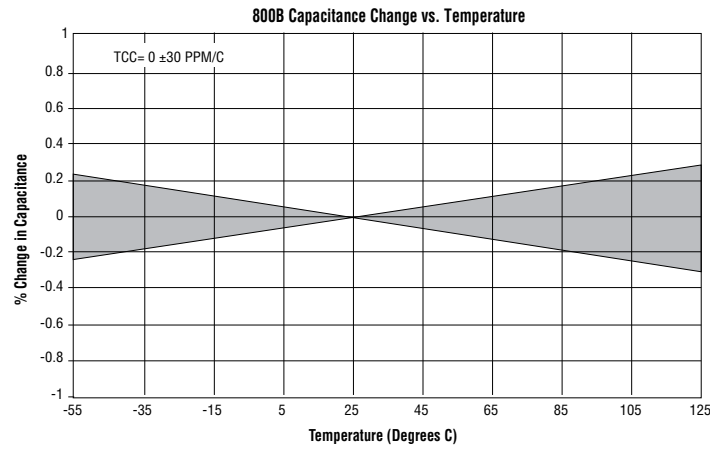
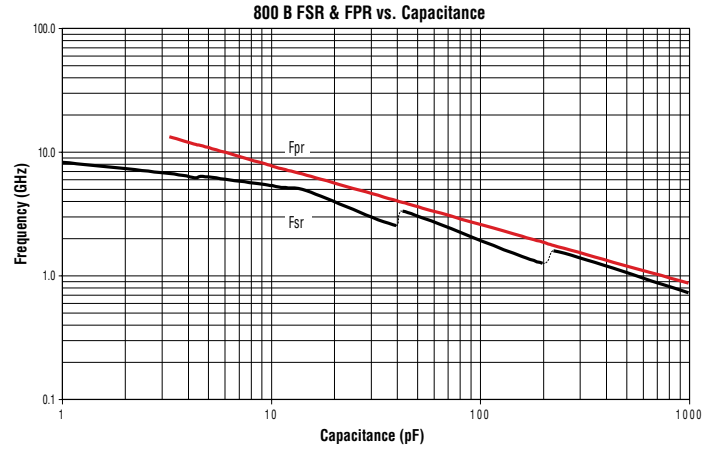
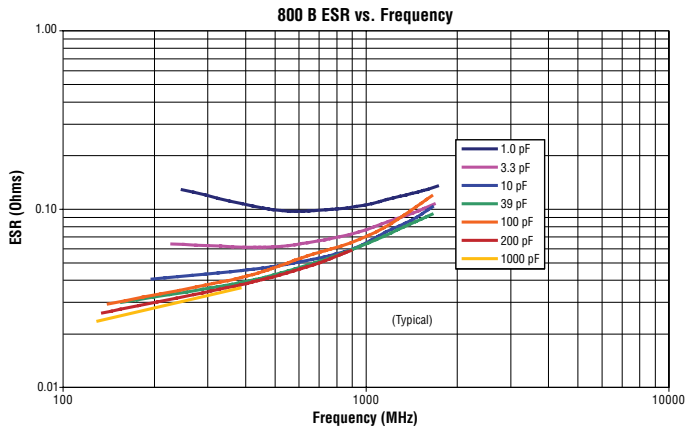
Case B Horizontal Mount					
Cap Value .43	Pad Size	A Min.	B Min.	C Min.	D Min.
All Values	Normal	.130 (3.30)	.050 (1.27)	.075 (1.91)	.175 (4.45)
	High Density	.110 (2.79)	.030 (.762)	.075 (1.91)	.135 (3.43)

inches (mm)

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**PERFORMANCE DATA**



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#### SAMPLE KITS

Kit #	RoHS Compliant	Item Number	Description	Cap. Value Range (pF)	Cap Value (pF)	Tol.	Price
Kit 83T		DK0083T	800B 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 ..... 10 .....	±0.1 ±0.25 ±5%	\$165.00
Kit 84T		DK0084T	800B 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 .....	±0.1	\$165.00
Kit 85T		DK0085T	800B NPO Ceramic High RF Power MLCs 16 different values, 15 pcs. min. per value	100 to 1000	100, 120, 150, 180, 200, 220, 240, 270, 300, 330, 390, 470..... 560, 680, 820, 1000.....	±5% ±10%	\$165.00

单击下面可查看定价，库存，交付和生命周期等信息

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