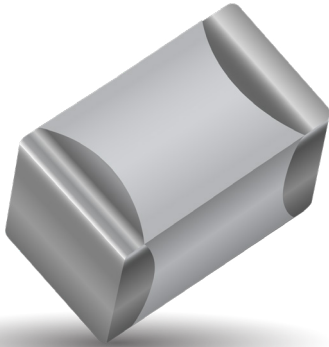


RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

700A Series NP0 Porcelain and Ceramic Multilayer Capacitors



FEATURES

- Case A Size (.055" x .055")
- Low ESR / ESL
- High Q
- Low Noise
- Capacitance Range 0.1 pF to 1000 pF
- Extended WVDC up to 250 VDC
- Zero TCC
- High Self-Resonance
- Established Reliability (QPL)

GENERAL DESCRIPTION

AVX, the industry leader, offers new improved ESR/ESL performance for the 700 A Series RF/Microwave Capacitors. The superior high self-resonance and zero TCC characteristic of this Series provide excellent performance over a broad range of RF and microwave applications requiring minimum drift. High density porcelain and ceramic constructions provide a rugged, hermetic package.

Typical functional applications: Bypass, Coupling, Tuning and DC Blocking.

Typical circuit applications: Filters, Oscillators and Timing

PACKAGING OPTIONS



Tape & Reel



Vertical
Orientation
Tape & Reel



Cap-Pak®
(100 pcs)



ELECTRICAL SPECIFICATIONS

Temperature Coefficient (TCC)	0 ± 30 PPM/°C
Capacitance Range	0.1 pF to 1000 pF
Operating Temperature	-55°C to +125°C*
Quality Factor	Greater than 10,000 (0.1 pF to 100 pF) @ 1 MHz. Greater than 2000 (110 pF to 1000 pF) @ 1 MHz.
Insulation Resistance (IR)	0.1 pF to 470 pF 10 ⁶ Megohms min. @ 25°C at rated WVDC 10 ⁵ Megohms min. @ 125°C at rated WVDC 510 pF to 1000 pF 10 ⁵ Megohms min. @ 25°C at rated WVDC 10 ⁴ Megohms min. @ 125°C at rated WVDC
Working Voltage (WVDC)	See Capacitance Values table
Dielectric Withstanding Voltage (DWV)	250% of rated WVDC for 5 seconds
Aging Effects	None
Piezoelectric Effects	None
Capacitance Drift	± (0.02% or 0.02 pF), whichever is greater

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

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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		Cap. Code	Cap. (pF)	Tol.	Rated WVDC		
			STD.	EXT.				STD.	EXT.				STD.	EXT.				STD.	EXT.	
0R1	0.1	B	150	EXTENDED VOLTAGE ED	2R4	2.4	B, C, D	150	250	200	20	F, G, J, K, M	150	250	VOLTAGE	151	150	F, G, J, K, M	150	N/A
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	250	EXTENDED VOLTAGE	560	56	431	430											
1R3	1.3	6R8				6.8	620	62	471	470										
1R4	1.4	7R5				7.5	680	68	511	510										
1R5	1.5	8R2				8.2	750	75	561	560										
1R6	1.6	9R1				9.1	820	82	621	620										
1R7	1.7	100				10	910	91	681	680										
1R8	1.8	110				11	101	100	751	750										
1R9	1.9	120				12	F, G, J, K, M	111	110	821	820									
2R0	2.0	130				13		121	120	911	910									
2R1	2.1	150				15		131	130	102	1000									
2R2	2.2	160	16																	
				180	18															

$v_{rms} = 0.707 \times WVDC$

Special values, tolerances, higher WVDC and matching available. Please consult factory.

note: extended wvdc does not apply to cdr products.

Capacitance values in bold type indicate porcelain dielectric. All other capacitance values indicate ceramic dielectric.

All 700 A Capacitors are available laser marked with AVX's identification, capacitance code and tolerance.

HOW TO ORDER

Series 700

Case Size A

See mechanical dimensions below

Capacitance 6R8

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%

Packaging W

T = Tape and Reel, 500 pc qty
TV = Vertical Tape and Reel, 500 pc qty
Please see last column of mechanical configuration table for other options.

Laser Marking (Optional) 150

Voltage Rating X

Termination Style Code T

Please see 2nd Column Mechanical Configuration Table

The above part number refers to a 700A Series (case size A) 6.8 pF capacitor, J tolerance (+/-5%), 150 WVDC, with W termination, (Tin/Lead, Solder Plated over Nickel Barrier), laser marking and Tape and Reel Packaging.



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.

RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

700A Series NP0 Porcelain and Ceramic Multilayer Capacitors



MECHANICAL CONFIGURATION

AVX Series & Case Size	AVX Term. Code	MIL-PRF-55681	Case Size & Type	Outline ES W/T is a Termination Surface	Body Dimensions inches (mm)			Lead and Termination Dimensions and Material			
					Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials	Pkg Type	Pkg Code
700A	W	CDR12BP	A Solder Plate		.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)	Tin/ Lead, Solder Plated over Nickel Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs	T1K or T TV1K or TV C100
700A	P	CDR12BP	A Pellet		.055+.025-.010 (1.40+0.64-0.25)	.055 ±.015 (1.40 ±0.38)			Heavy Tin/ Lead Coated, over Nickel Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs	T1K or T TV1K or TV C100
700A	T	N/A	A Solderable Nickel Barrier		.055+.015-.010 (1.40+0.38-0.25)	.055 ±.015 (1.40 ±0.38)			RoHS Compliant Tin Plated over Nickel Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs	T1K or T TV1K or TV C100
700A	CA	CDR11BP	A Gold Chip		.055+.015-.010 (1.40+0.38-0.25)	.055 ±.015 (1.40 ±0.38)			RoHS Compliant Gold Plated over Nickel Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs	T1K or T TV1K or TV C100

NON-MAGNETIC CONFIGURATION

AVX Series & Case Size	AVX Term. Code	MIL-PRF-55681	Case Size & Type	Non-Magnetic Configuration	Body Dimensions inches (mm)			Lead and Termination Dimensions and Material			
					Length (L)	Width (W)	Thickness (T)	Overlap (Y)	Materials	Pkg Type	Pkg Code
700A	WN	Meets Requirements	A Non-Mag Solder Plate		.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)	Tin/ Lead, Solder Plated over Non-Magnetic Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs	T1K or T TV1K or TV C100
700A	PN	Meets Requirements	A Non-Mag Pellet		.055+.025-.010 (1.40+0.64-0.25)	.055 ±.015 (1.40 ±0.38)			Heavy Tin/ Lead Coated, over Non-Magnetic Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs	T1K or T TV1K or TV C100
700A	TN	Meets Requirements	A Non-Mag Solderable Barrier		.055+.015-.010 (1.40+0.38-0.25)	.055 ±.015 (1.40 ±0.38)			RoHS Compliant Tin Plated over Non-Magnetic Barrier Termination	T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs	T1K or T TV1K or TV C100

*Capacitors with values greater than 100 pF contain a trace magnetic element that may exhibit weak magnetic properties.

RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

700A Series NP0 Porcelain and Ceramic Multilayer Capacitors

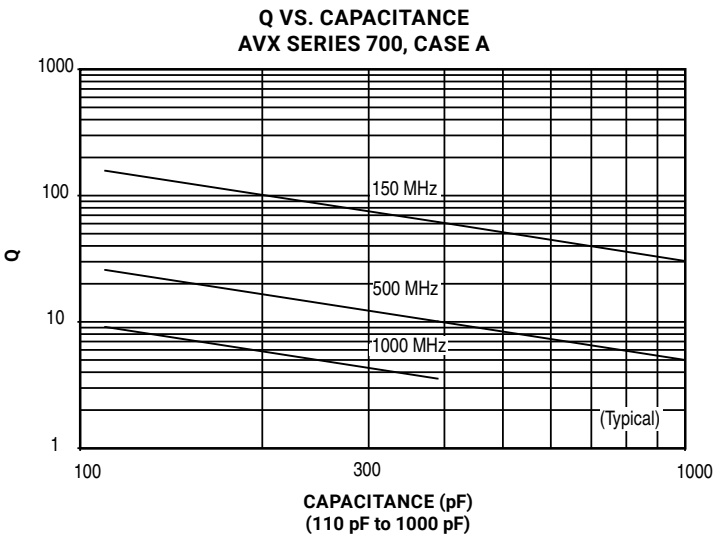
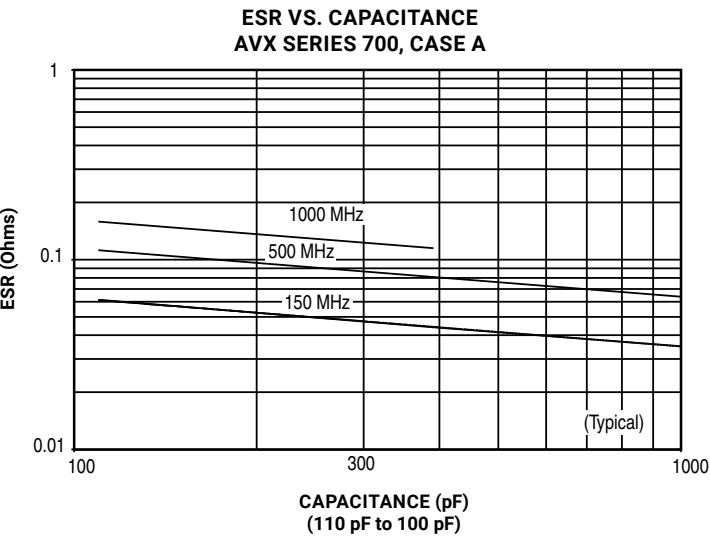
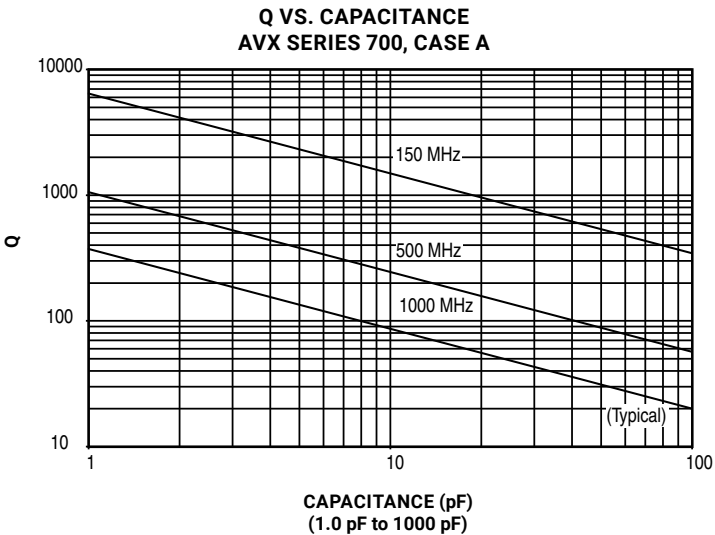
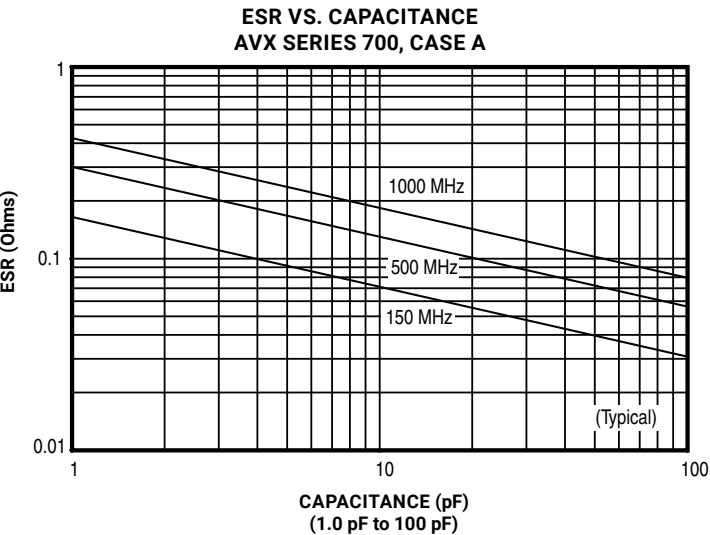


SUGGESTED MOUNTING PAD DIMENSIONS

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

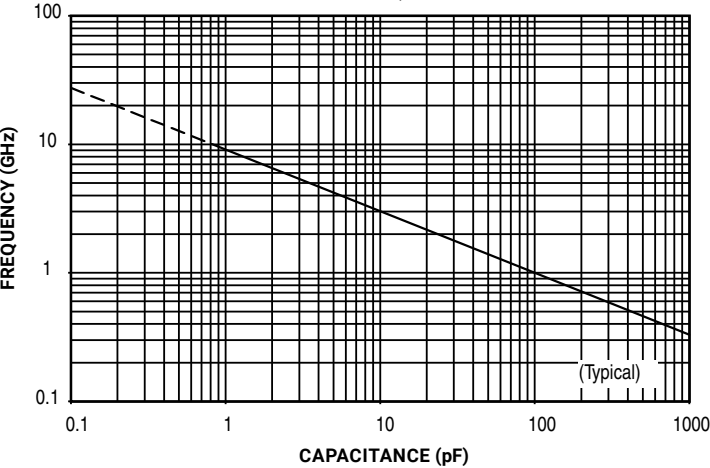


RF/Microwave Capacitors
RF/Microwave Multilayer Capacitors (MLC)
700A Series NP0 Porcelain and Ceramic Multilayer Capacitors

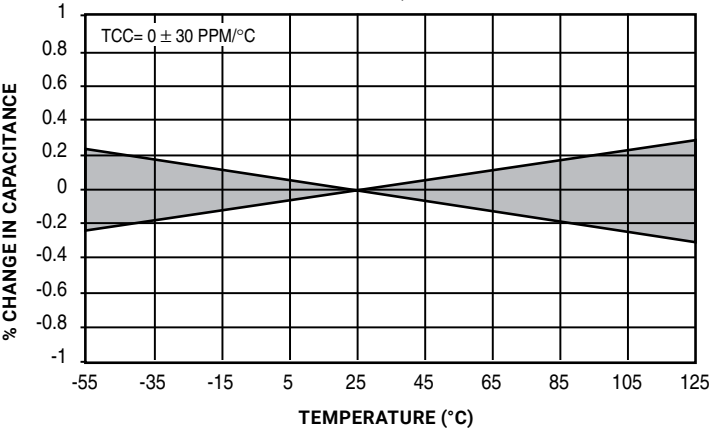


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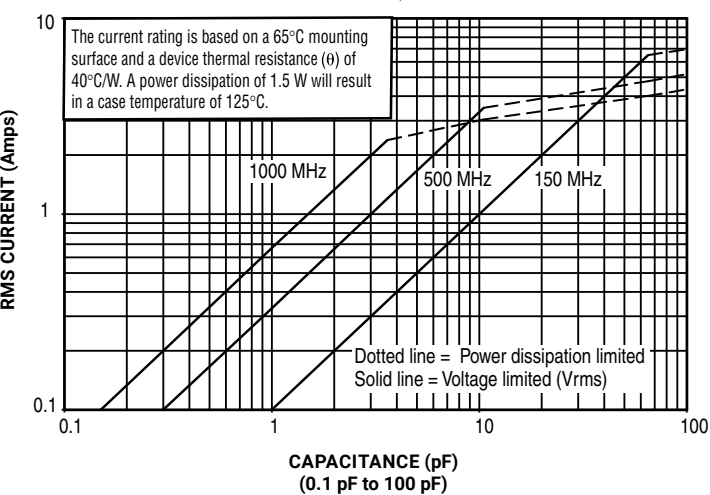
SERIES RESONANCE VS. CAPACITANCE
AVX SERIES 700, CASE A



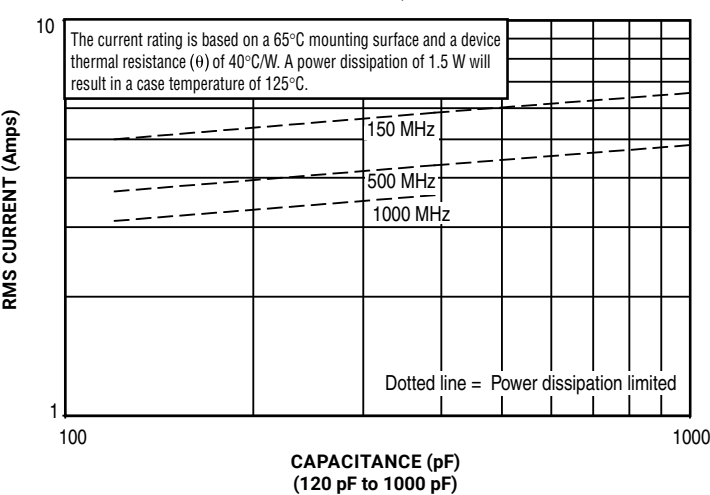
CAPACITANCE CHANGE VS. TEMPERATURE
AVX SERIES 700, CASE A



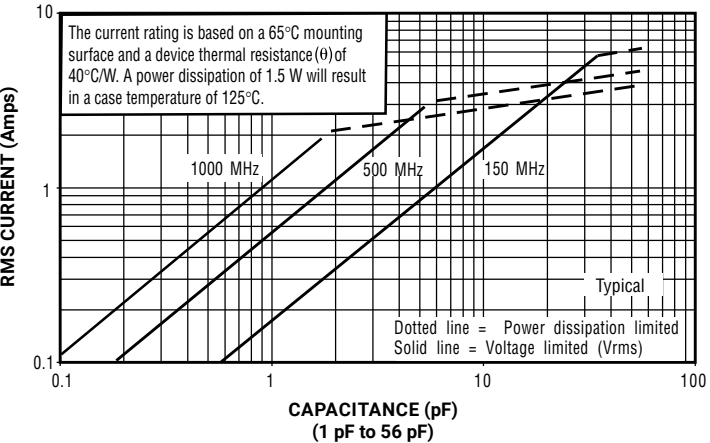
CURRENT RATING VS. CAPACITANCE
AVX SERIES 700, CASE A



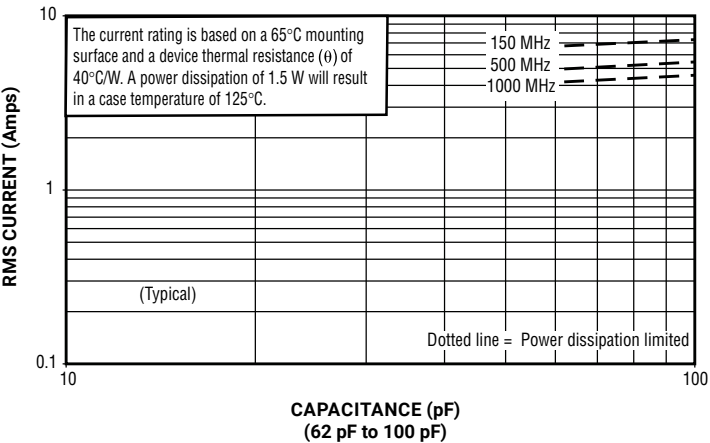
CURRENT RATING VS. CAPACITANCE
AVX SERIES 700, CASE A



CURRENT RATING VS. CAPACITANCE
AVX SERIES 700, CASE A, EXTENDED VOLTAGE



CURRENT RATING VS. CAPACITANCE
AVX SERIES 700, CASE A, EXTENDED VOLTAGE



RF/Microwave Capacitors

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700A Series NP0 Porcelain and Ceramic Multilayer Capacitors



SAMPLE KITS

Kit #	RoHS Compliant	Item Number	Description	Cap. Value Range (pF)	Cap Value (pF)	Tol.	Price
Kit 4	-	DK0004	700A Porcelain and Ceramic 16 different values, 15 pc. 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	\$158.40
Kit 4T		DK0004T			1.5, 1.8, 2.0	±0.25	
Kit 5	-	DK0005	700A Porcelain and Ceramic 16 different values, 15 pc. 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,.....	±0.1	\$158.40
Kit 5T		DK0005T			3.9, 4.7, 5.6, 6.8, 8.2	±0.25	
					10	±5%	
Kit 6	-	DK0006	700A Porcelain and Ceramic 16 different values, 15 pc. min. per value	10 to 100	10, 12, 15, 18, 20, 22, 24, 27, 30, 33, 39, 47, 56, 68, 82, 100	± 5%	\$158.40
Kit 6T		DK0006T					
Kit 7	-	DK0007	700A Porcelain and Ceramic 16 different values, 15 pc. min. per value	100 to 1000	100, 120, 150, 180, 200, 220, 240, 270 300, 330, 390, 470	±5%	\$158.40
Kit 7T		DK0007T			560, 680, 820, 1000.....	±10	

Mouser Electronics

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[700A1R0DT150XT](#) [700A1R1BT150XT](#)