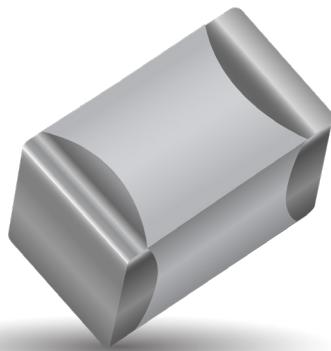


RF/Microwave Capacitors

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.

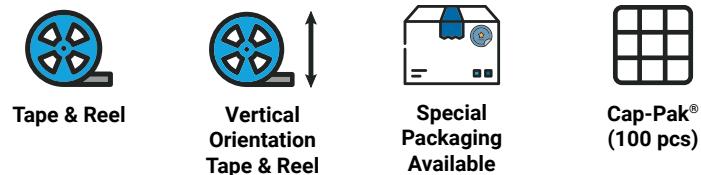
Typical functional applications: Bypass, Coupling, Tuning and DC Blocking.

Typical circuit applications: Filters, Oscillators and Timing

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 5100 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

PACKAGING OPTIONS



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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A KYOCERA GROUP COMPANY



AMERICAN
TECHNICAL
CERAMICS
AN AVX GROUP COMPANY

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			2R4	2.4		200	20				151	150					
0R2	0.2				2R7	2.7		220	22				161	160					
0R3	0.3	B, C			3R0	3.0	B, C, D	240	24				181	180					
0R4	0.4				3R3	3.3		270	27				201	200					
0R5	0.5				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		150	250	6R2	6.2		510	51	F, G, J, K, M	150		391	390	F, G, J, K, M	150		N/A	
1R2	1.2				6R8	6.8	B, C, J, K, M	560	56				431	430					
1R3	1.3	B, C, D			7R5	7.5		620	62				471	470					
1R4	1.4				8R2	8.2		680	68				511	510					
1R5	1.5				9R1	9.1		750	75				561	560					
1R6	1.6				100	10		820	82				621	620					
1R7	1.7				110	11		910	91				681	680					
1R8	1.8				120	12	F, G, J, K, M	101	100				751	750					
1R9	1.9				130	13		111	110				821	820					
2R0	2.0				150	15	M	121	120				911	910					
2R1	2.1				160	16		131	130				102	1000					
2R2	2.2				180	18													

vrms = 0.707 x WVDC

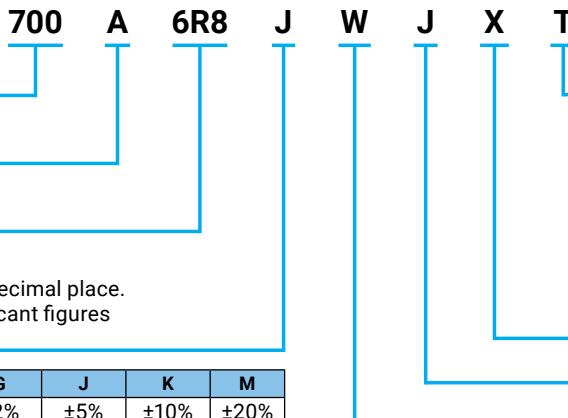
Special values, tolerances, higher WVDC and matching available. Please consult factory.

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



Packaging

T = Tape and Reel, 1000 pc qty

TV = Vertical Orientation of Product Tape and Reel, 1000 pc qty

I = Special Packaging. Consult Factory

*Consult AVX for other quantities

Cap-Pac® packaging (100 pc qty) is also available. For this option, leave this field blank

Laser Marking

Voltage Rating

Termination Style Code

W = Tin/Lead Solder Plated

P = Heavy Tin/Lead Coated

T = Tin Plated

CA = Gold Plated

WN = Tin/Lead Non-Magnetic Barrier

PN = Heavy Tin/Lead Coated Non-Magnetic Barrier

TN = Tin Plated Non-Magnetic Barrier

RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

700A Series NP0 Porcelain and Ceramic Multilayer Capacitors



A KYOCERA GROUP COMPANY



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CERAMICS

AN AVX GROUP COMPANY

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
700A	W	CDR12BP	A Solder Plate		.055+.015-.010 (1.40+.38-.25)	.055 ±.015 (1.40 ±.38)	.057 (1.45) max.	.010+.010-.005 (.25+.25-.13)	Tin/ Lead, Solder Plated over Nickel Barrier Termination
700A	P	CDR12BP	A Pellet		.055+.025-.010 (1.40+.64-.25)	.055 ±.015 (1.40 ±.38)			Heavy Tin/ Lead Coated, over Nickel Barrier Termination
700A	T	N/A	A Solderable Nickel Barrier		.055+.015-.010 (1.40+.38-.25)	.055 ±.015 (1.40 ±.38)			RoHS Compliant Tin Plated over Nickel Barrier Termination
700A	CA	CDR11BP	A Gold Chip		.055+.015-.010 (1.40+.38-.25)	.055 ±.015 (1.40 ±.38)			RoHS Compliant Gold Plated over Nickel Barrier Termination

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
700A	WN	Meets Requirements	A Non-Mag Solder Plate		.055+.025-.010 (1.40+.64-.25)	.055 ±.015 (1.40 ±.38)	.057 (1.45) max.	.010+.010-.005 (.25+.25-.13)	Tin/ Lead, Solder Plated over Non-Magnetic Barrier Termination
700A	PN	Meets Requirements	A Non-Mag Pellet		.055+.025-.010 (1.40+.64-.25)	.055 ±.015 (1.40 ±.38)			Heavy Tin/ Lead Coated, over Non-Magnetic Barrier Termination
700A	TN	Meets Requirements	A Non-Mag Solderable Barrier		.055+.015-.010 (1.40+.38-.25)	.055 ±.015 (1.40 ±.38)			RoHS Compliant Tin Plated over Non-Magnetic Barrier Termination

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



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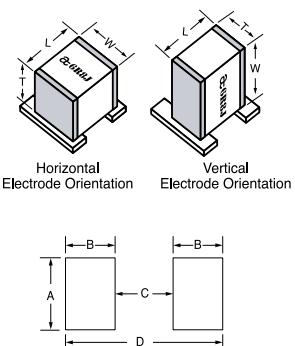
RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

700A Series NP0 Porcelain and Ceramic Multilayer Capacitors



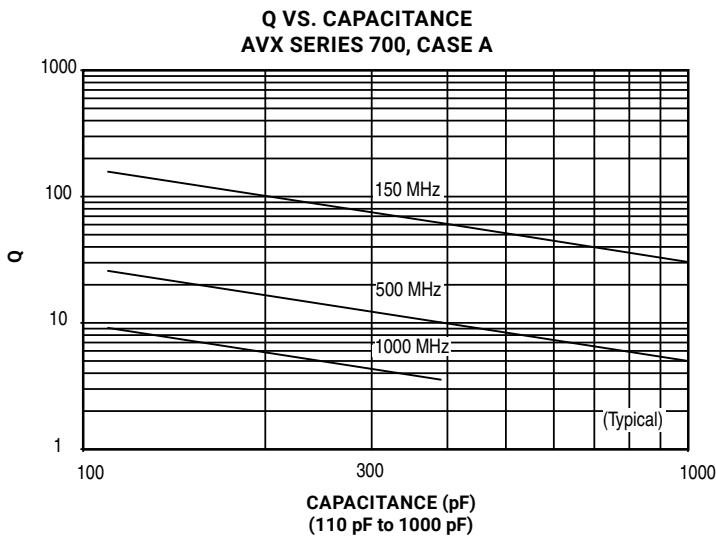
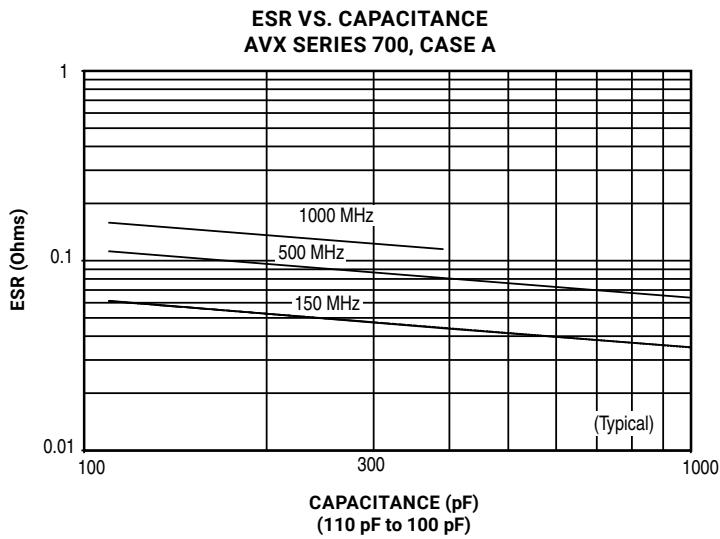
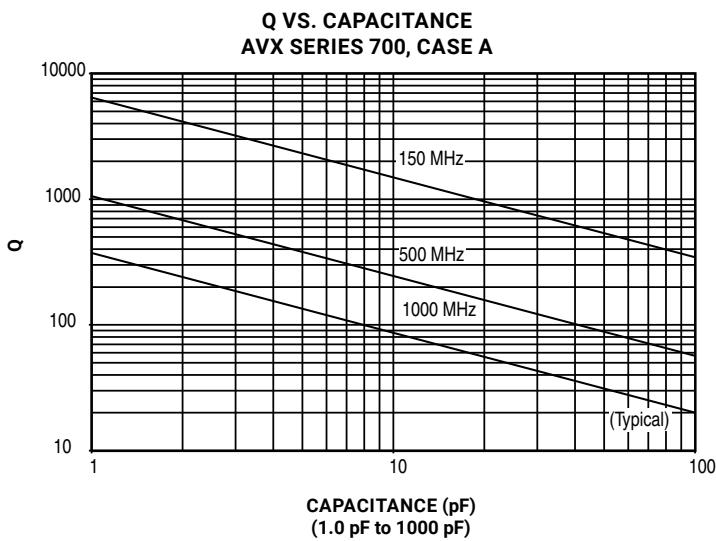
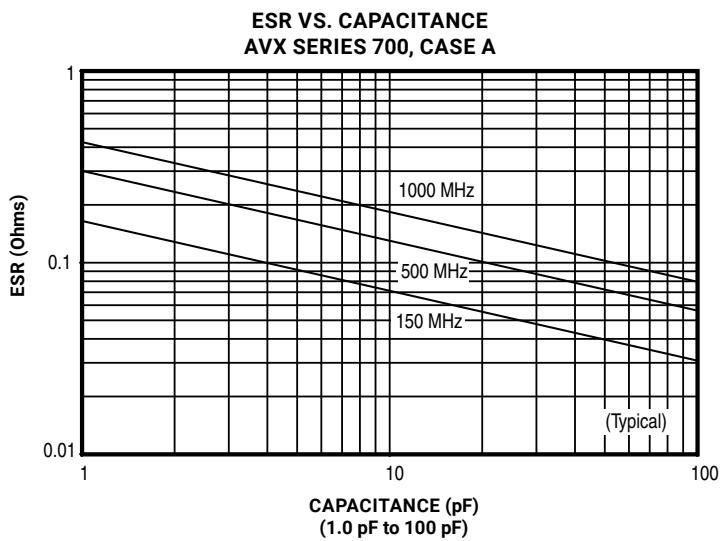
SUGGESTED MOUNTING PAD DIMENSIONS



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

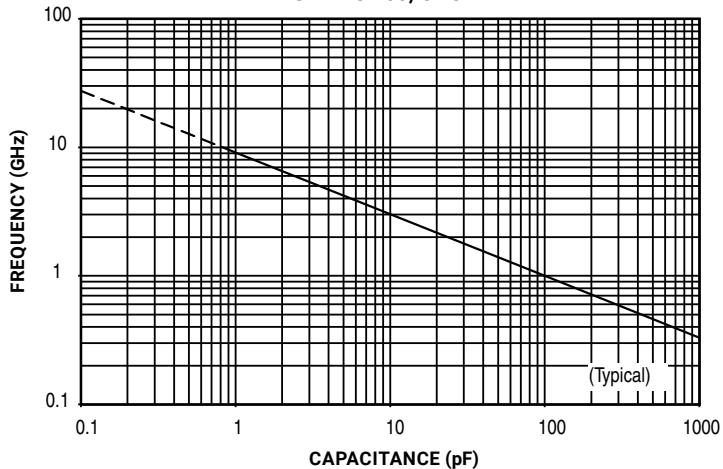
RF/Microwave Multilayer Capacitors (MLC)

700A Series NP0 Porcelain and Ceramic Multilayer Capacitors

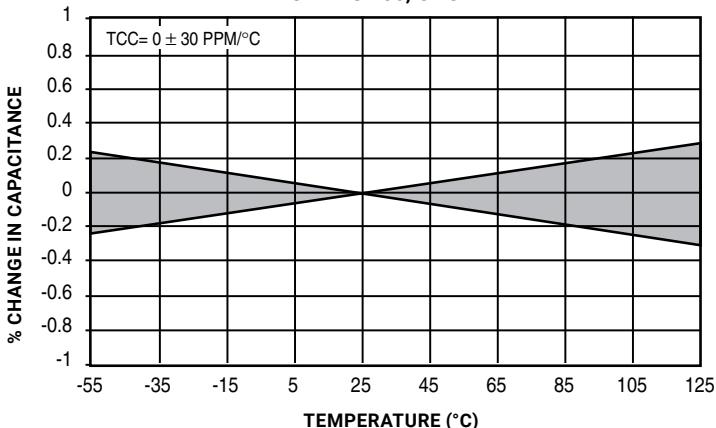


PERFORMANCE DATA

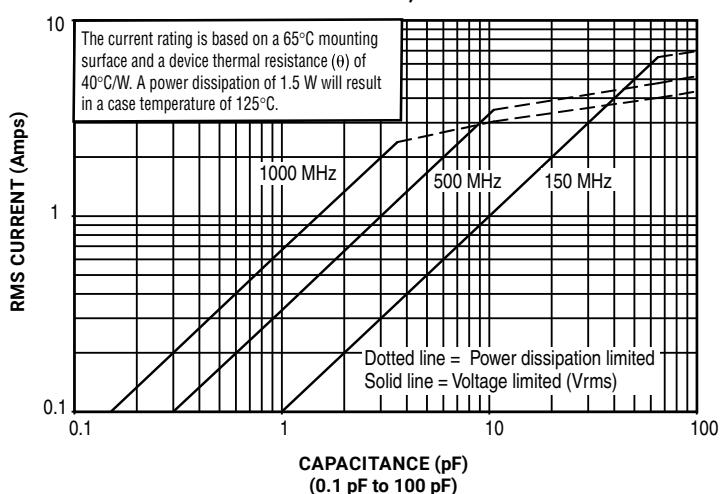
SERIES RESONANCE VS. CAPACITANCE
AVX SERIES 700, CASE A



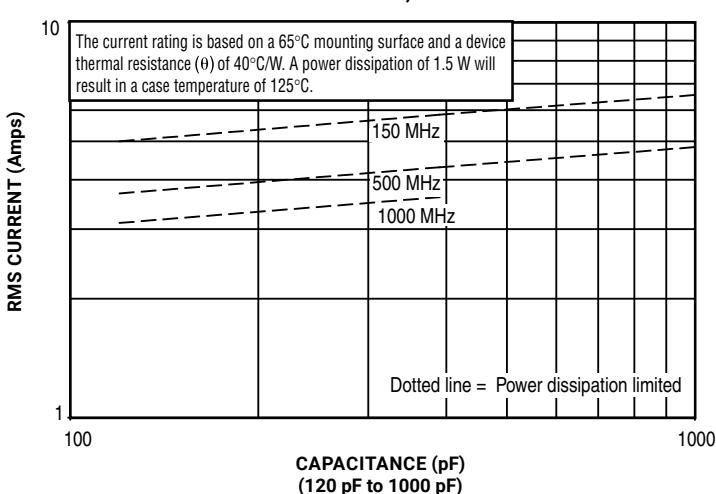
CAPACITANCE CHANGE VS. TEMPERATURE
AVX SERIES 700, CASE A



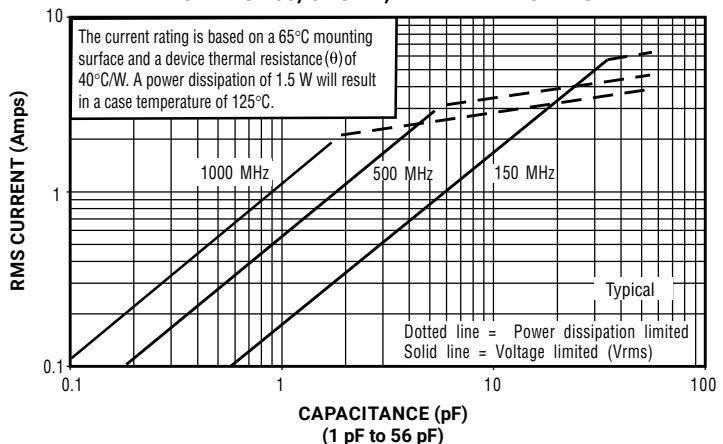
CURRENT RATING VS. CAPACITANCE
AVX SERIES 700, CASE A



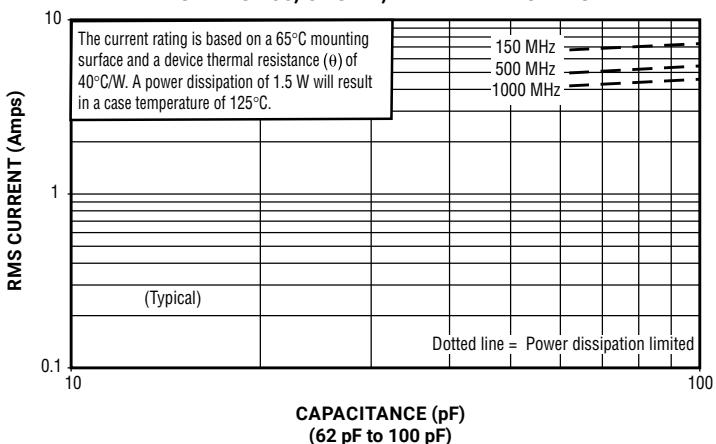
CURRENT RATING VS. CAPACITANCE
AVX SERIES 700, CASE A



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



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



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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 1.5, 1.8, 2.0	±0.1 ±0.25	\$158.40
Kit 4T		DK0004T					
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, 3.9, 4.7, 5.6, 6.8, 8.2 10	±0.1 ±0.25 ±5%	\$158.40
Kit 5T		DK0005T					
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, 470 560, 680, 820, 1000	±5% ±10	\$158.40
Kit 7T		DK0007T					