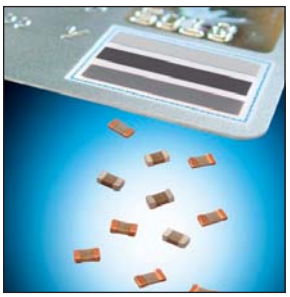
UltraThin Ceramic Capacitors

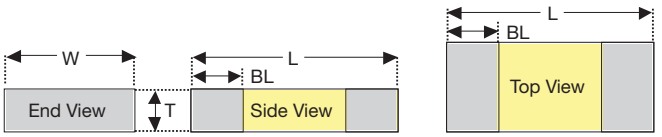
UT Series



The Ultrathin (UT) series of ceramic capacitors is a new product offering from AVX. The UT series was designed to meet the stringent thickness requirements of our customers. AVX developed a new termination process (FCT - Fine Copper Termination) that provides unbeatable flatness and repeatability. The series includes products < 0.35mm in height and is targeted for applications such as Smart cards, Memory modules, High Density SIM cards, Mobile phones, MP3 players, and embedded solutions.

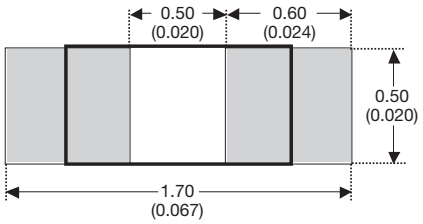
HOW TO ORDER

UT	02	3	D	103	M	A	T	2	D
Style Ultra Thin	**Case Size 0402**	**Rated Voltage** 6 = 6.3V Z = 10V Y = 16V 3 = 25V	**Temperature Characteristic X5R**	**Coded Cap (in pF)** 2 Significant Digits + Number of Zeros	**Cap Tolerance ± 20%**	**Termination Style** Commercial	**Termination** T = 100% Sn C = Cu	**Packaging** 2 = 7" Reel 15,000 pcs 4 = 13" Reel 50,000 pcs	**Thickness** D = 0.30mm max E = 0.25mm max F = 0.15mm max (only availabe in Cu Termination)



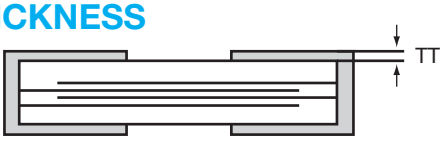
RECOMMENDED SOLDER PAD DIMENSIONS (Sn Termination)

mm (inches)



TYPICAL Cu THICKNESS

	TT
µM	10.0 ± 4.00
mil	0.40 ± 0.16



PART DIMENSIONS

inches (mm)

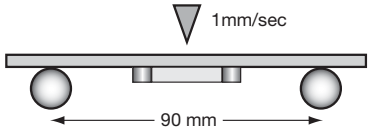
Thickness	L	W	T	BL
D	1.00 ± 0.10 (0.039±0.004)	0.50 ± 0.10 (0.020 ± 0.004)	0.25 ± 0.05 (0.010 ± 0.002)	0.27 ± 0.05 (0.0108 ± 0.002)
E	1.00 ± 0.10 (0.039±0.004)	0.50 ± 0.10 (0.020 ± 0.004)	0.20 ± 0.05 (0.008 ± 0.002)	0.27 ± 0.05 (0.0108 ± 0.002)
F	1.00 ± 0.10 (0.039±0.004)	0.50 ± 0.10 (0.020 ± 0.004)	0.125 ± 0.025 (0.005 ± 0.001)	0.27 ± 0.05 (0.0108 ± 0.002)

CAP RANGE (THICKNESS CODE)

Cap Code	6.3V	10V	16V	25V
103	F	E	E	D
223	D	D		

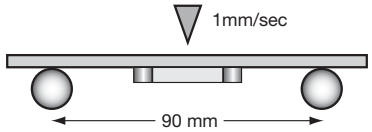
UltraThin Ceramic Capacitors

UT Series Specifications and Test Methods – Cu Termination

Parameter/Test		Specification Limits	Measuring Conditions
Operating Temperature Range		-55ºC to +85ºC	Temperature Cycle Chamber
Capacitance		Within specified tolerance	Freq.: 1.0 kHz ± 10% Voltage: 1.0Vrms ± .2V
Dissipation Factor		≤ 3.0% for ≥ 25V DC rating	
		≤ 12.5% for ≤ 16V DC rating	
Insulation Resistance		100 MΩ - µF	Charge device with rated voltage for 120 ± 5 secs @ room temp/humidity
Dielectric Strength		No breakdown or visual defects	Charge device with 300% of rated voltage for 1-5 seconds, with charge and discharge current limited to 50 mA (max)
Resistance to Flexure Stresses	Appearance	No defects	Deflection: 2mm Test Time: 30 seconds 
	Capacitance Variation	≤ ±12%	
	Dissipation Factor	Meets Initial Values (As Above)	
	Insulation Resistance	≥ Initial Value x 0.3	
Load Life	Appearance	No visual defects	Charge device with 1.5X rated voltage in test chamber set at 85ºC ± 2ºC for 1000 hours (+48, -0) Remove from test chamber and stabilize at room temperature for 24 ± 2 hours before measuring.
	Capacitance Variation	≤ ±20%	
	Dissipation Factor	≤ Initial Value x 2.0 (As Above)	
	Insulation Resistance	≥ Initial Value x 0.3 (As Above)	
	Dielectric Strength	Meets Initial Values (As Above)	

UltraThin Ceramic Capacitors

UT Series Specifications and Test Methods – Sn Termination

Parameter/Test		Specification Limits	Measuring Conditions
Operating Temperature Range		-55ºC to +85ºC	Temperature Cycle Chamber
Capacitance		Within specified tolerance	Freq.: 1.0 kHz ± 10% Voltage: 1.0Vrms ± 0.2V
Dissipation Factor		≤ 3.0% for ≥ 25V DC rating	
		≤ 12.5% for ≤ 16V DC rating	
Insulation Resistance		100 MΩ - µF	Charge device with rated voltage for 120 ± 5 secs @ room temp/humidity
Dielectric Strength		No breakdown or visual defects	Charge device with 300% of rated voltage for 1-5 seconds, with charge and discharge current limited to 50 mA (max)
Resistance to Flexure Stresses	Appearance	No defects	Deflection: 2mm Test Time: 30 seconds 
	Capacitance Variation	≤ ±12%	
	Dissipation Factor	Meets Initial Values (As Above)	
	Insulation Resistance	≥ Initial Value x 0.3	
Solderability		≥ 95% of each terminal should be covered with fresh solder	Dip device in eutectic solder at 245 ± 5ºC for 5.0 ± 0.5 seconds
Resistance to Solder Heat	Appearance	No defects, <25% leaching of either end terminal	Dip device in eutectic solder at 260ºC for 60 seconds. Store at room temperature for 24 ± 2 hours before measuring electrical properties.
	Capacitance Variation	≤ ±7.5%	
	Dissipation Factor	Meets Initial Values (As Above)	
	Insulation Resistance	Meets Initial Values (As Above)	
	Dielectric Strength	Meets Initial Values (As Above)	
Load Life	Appearance	No visual defects	Charge device with 1.5X rated voltage in test chamber set at 85ºC ± 2ºC for 1000 hours (+48, -0) Remove from test chamber and stabilize at room temperature for 24 ± 2 hours before measuring.
	Capacitance Variation	≤ ±12%	
	Dissipation Factor	≤ Initial Value x 2.0 (As Above)	
	Insulation Resistance	≥ Initial Value x 0.3 (As Above)	
	Dielectric Strength	Meets Initial Values (As Above)	
Load Humidity	Appearance	No visual defects	Store in a test chamber set at 85ºC ± 2ºC/ 85% ± 5% relative humidity for 1000 hours (+48, -0) with rated voltage applied. Remove from chamber and stabilize at room temperature and humidity for 24 ± 2 hours before measuring.
	Capacitance Variation	≤ ±12%	
	Dissipation Factor	≤ Initial Value x 2.0 (As Above)	
	Insulation Resistance	≥ Initial Value x 0.3 (As Above)	
	Dielectric Strength	Meets Initial Values (As Above)	