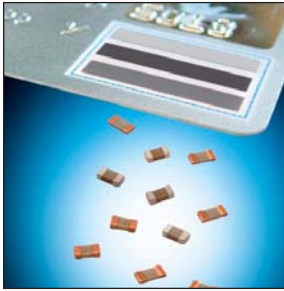


# UltraThin Ceramic Capacitors



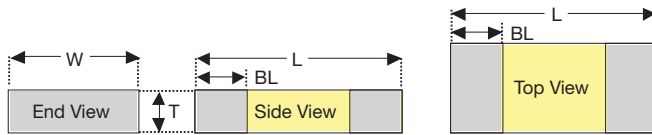
## UT Series



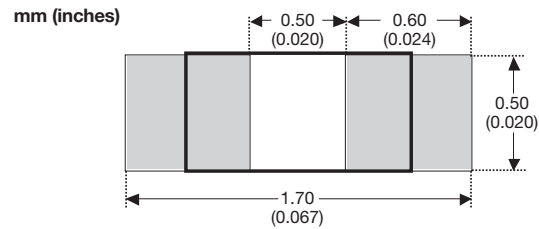
The Ultrathin (UT) series of ceramic capacitors is a new product offering from AVX. The UT series was designed to meet the stringent thickness requirements of our customers. AVX developed a new termination process (FCT - Fine Copper Termination) that provides unbeatable flatness and repeatability. The 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

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



### RECOMMENDED SOLDER PAD DIMENSIONS (Sn Termination)



### TYPICAL Cu THICKNESS

	TT
µM	10.0 ± 4.00
mil	0.40 ± 0.16

### PART DIMENSIONS

	inches (mm)			
Thickness	L	W	T	BL
<b>D</b>	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)
<b>E</b>	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)
<b>F</b>	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)

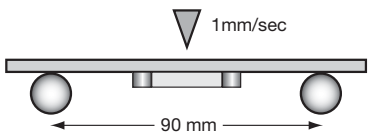
### CAP RANGE (THICKNESS CODE)

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

# UltraThin Ceramic Capacitors



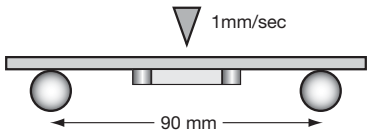
## UT Series Specifications and Test Methods – Cu Termination

Parameter/Test		Specification Limits	Measuring Conditions
<b>Operating Temperature Range</b>		-55°C to +85°C	Temperature Cycle Chamber
<b>Capacitance</b>		Within specified tolerance	Freq.: 1.0 kHz ± 10%
<b>Dissipation Factor</b>		≤ 3.0% for ≥ 25V DC rating ≤ 12.5% for ≤ 16V DC rating	Voltage: 1.0Vrms ± .2V
<b>Insulation Resistance</b>		100 MΩ - μF	Charge device with rated voltage for 120 ± 5 secs @ room temp/humidity
<b>Dielectric Strength</b>		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)
<b>Resistance to Flexure Stresses</b>	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	
<b>Load Life</b>	Appearance	No visual defects	Charge device with 1.5X rated voltage in test chamber set at 85°C ± 2°C 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
<b>Operating Temperature Range</b>		-55°C to +85°C	Temperature Cycle Chamber
<b>Capacitance</b>		Within specified tolerance	Freq.: 1.0 kHz ± 10% Voltage: 1.0Vrms ± 0.2V
<b>Dissipation Factor</b>		≤ 3.0% for ≥ 25V DC rating ≤ 12.5% for ≤ 16V DC rating	
<b>Insulation Resistance</b>		100 MΩ - μF	Charge device with rated voltage for 120 ± 5 secs @ room temp/humidity
<b>Dielectric Strength</b>		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)
<b>Resistance to Flexure Stresses</b>	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	
<b>Solderability</b>		≥ 95% of each terminal should be covered with fresh solder	Dip device in eutectic solder at 245 ± 5°C for 5.0 ± 0.5 seconds
<b>Resistance to Solder Heat</b>	Appearance	No defects, <25% leaching of either end terminal	Dip device in eutectic solder at 260°C 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)	
<b>Load Life</b>	Appearance	No visual defects	Charge device with 1.5X rated voltage in test chamber set at 85°C ± 2°C 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)	
<b>Load Humidity</b>	Appearance	No visual defects	Store in a test chamber set at 85°C ± 2°C/ 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)	