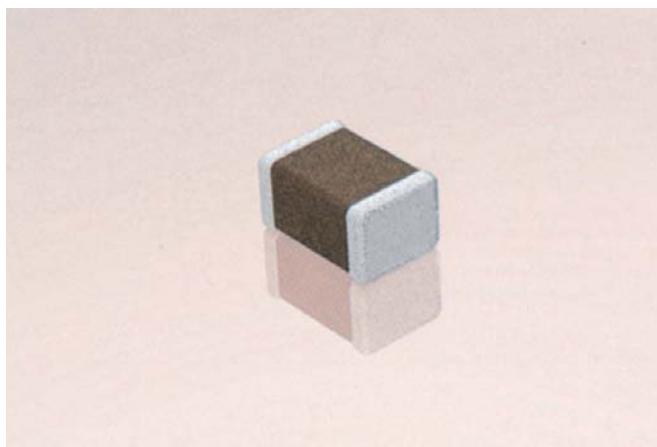


Y5V Dielectric

General Specifications

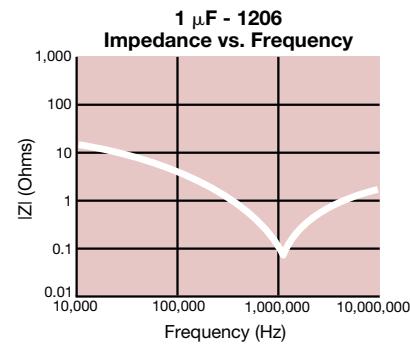
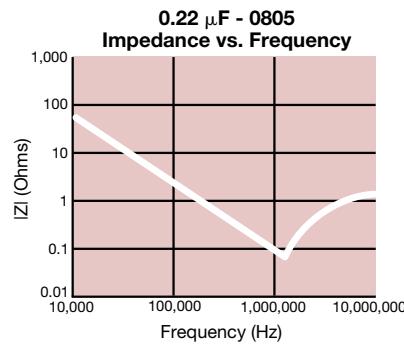
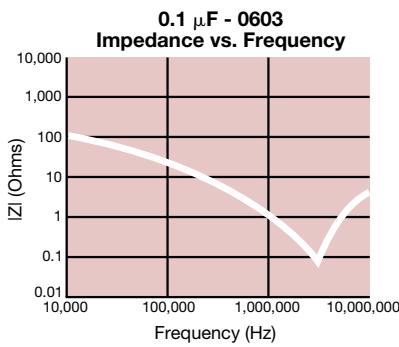
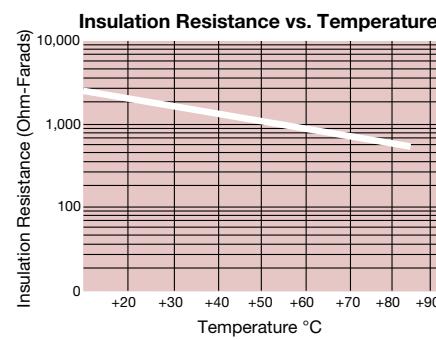
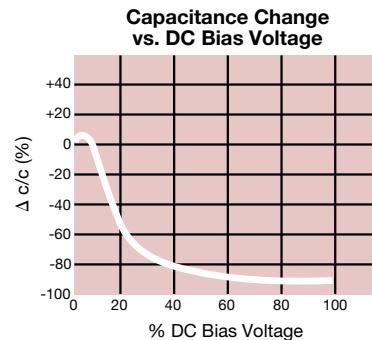
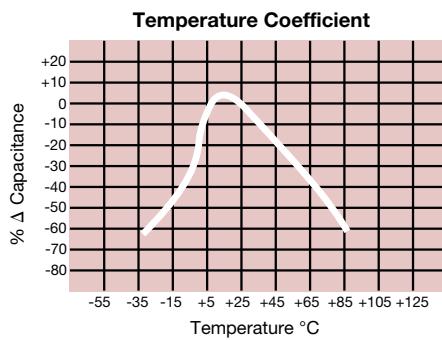


Y5V formulations are for general-purpose use in a limited temperature range. They have a wide temperature characteristic of +22% –82% capacitance change over the operating temperature range of –30°C to +85°C.

These characteristics make Y5V ideal for decoupling applications within limited temperature range.

PART NUMBER (see page 2 for complete part number explanation)

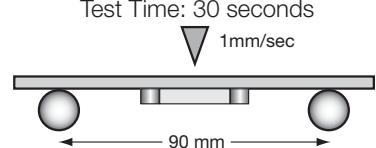
0805	3	G	104	Z	A	T	2	A
Size (L" x W")	Voltage 6.3V = 6 10V = Z 16V = Y 25V = 3 50V = 5	Dielectric Y5V = G	Capacitance Code (in pF) 2 Sig. Digits + Number of Zeros	Capacitance Tolerance Z = +80 –20%	Failure Rate A = Not Applicable	Terminations T = Plated Ni and Sn	Packaging 2 = 7" Reel 4 = 13" Reel	Special Code A = Std. Product



Y5V Dielectric



Specifications and Test Methods

Parameter/Test	Y5V Specification Limits		Measuring Conditions		
Operating Temperature Range	-30°C to +85°C		Temperature Cycle Chamber		
Capacitance	Within specified tolerance				
Dissipation Factor	$\leq 5.0\%$ for $\geq 50V$ DC rating $\leq 7.0\%$ for $25V$ DC rating $\leq 9.0\%$ for $16V$ DC rating $\leq 12.5\%$ for $\leq 10V$ DC rating		Freq.: 1.0 kHz $\pm 10\%$ Voltage: 1.0Vrms $\pm .2V$ For Cap $> 10 \mu F$, 0.5Vrms @ 120Hz		
Insulation Resistance	10,000MΩ or 500MΩ - μF , whichever is less		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, w/charge and discharge current limited to 50 mA (max)		
Resistance to Flexure Stresses	Appearance	No defects		Deflection: 2mm Test Time: 30 seconds 	
	Capacitance Variation	$\leq \pm 30\%$			
	Dissipation Factor	Meets Initial Values (As Above)			
	Insulation Resistance	\geq Initial Value $\times 0.1$			
Solderability	$\geq 95\%$ of each terminal should be covered with fresh solder		Dip device in eutectic solder at $230 \pm 5^\circ C$ 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 $260^\circ C$ for 60 seconds. Store at room temperature for 24 ± 2 hours before measuring electrical properties.	
	Capacitance Variation	$\leq \pm 20\%$			
	Dissipation Factor	Meets Initial Values (As Above)			
	Insulation Resistance	Meets Initial Values (As Above)			
	Dielectric Strength	Meets Initial Values (As Above)			
Thermal Shock	Appearance	No visual defects		Step 1: $-30^\circ C \pm 2^\circ$ 30 ± 3 minutes	
	Capacitance Variation	$\leq \pm 20\%$		Step 2: Room Temp ≤ 3 minutes	
	Dissipation Factor	Meets Initial Values (As Above)		Step 3: $+85^\circ C \pm 2^\circ$ 30 ± 3 minutes	
	Insulation Resistance	Meets Initial Values (As Above)		Step 4: Room Temp ≤ 3 minutes	
	Dielectric Strength	Meets Initial Values (As Above)		Repeat for 5 cycles and measure after 24 ± 2 hours at room temperature	
Load Life	Appearance	No visual defects		Charge device with twice rated voltage in test chamber set at $85^\circ C \pm 2^\circ C$ for 1000 hours (+48, -0) Remove from test chamber and stabilize at room temperature for 24 ± 2 hours before measuring.	
	Capacitance Variation	$\leq \pm 30\%$			
	Dissipation Factor	\leq Initial Value $\times 1.5$ (See Above)			
	Insulation Resistance	\geq Initial Value $\times 0.1$ (See Above)			
	Dielectric Strength	Meets Initial Values (As Above)			
Load Humidity	Appearance	No visual defects		Store in a test chamber set at $85^\circ C \pm 2^\circ C/85\% \pm 5\%$ 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	$\leq \pm 30\%$			
	Dissipation Factor	\leq Initial Value $\times 1.5$ (See above)			
	Insulation Resistance	\geq Initial Value $\times 0.1$ (See Above)			
	Dielectric Strength	Meets Initial Values (As Above)			



Y5V Dielectric



Capacitance Range

PREFERRED SIZES ARE SHADED

SIZE	0201	0402					0603					0805					1206					1210						
Soldering	Reflow Only	Reflow/Wave					Reflow/Wave					Reflow/Wave					Reflow Only					Reflow Only						
Packaging	All Paper	All Paper					All Paper					Paper/Embossed					Paper/Embossed					Paper/Embossed						
(L) Length (in.)	mm 0.60 ± 0.03 (0.024 ± 0.001)	mm 1.00 ± 0.10 (0.040 ± 0.004)					mm 1.60 ± 0.15 (0.063 ± 0.006)					mm 2.01 ± 0.20 (0.079 ± 0.008)					mm 3.20 ± 0.20 (0.126 ± 0.008)					mm 3.20 ± 0.20 (0.126 ± 0.008)						
(W) Width (in.)	mm 0.30 ± 0.03 (0.011 ± 0.001)	mm 0.50 ± 0.10 (0.020 ± 0.004)					mm .81 ± 0.15 (0.032 ± 0.006)					mm 1.25 ± 0.20 (0.049 ± 0.008)					mm 1.60 ± 0.20 (0.063 ± 0.008)					mm 2.50 ± 0.20 (0.098 ± 0.008)						
(t) Terminal (in.)	mm 0.15 ± 0.05 (0.006 ± 0.002)	mm 0.25 ± 0.15 (0.010 ± 0.006)					mm 0.35 ± 0.15 (0.014 ± 0.006)					mm 0.50 ± 0.25 (0.020 ± 0.010)					mm 0.50 ± 0.25 (0.020 ± 0.010)					mm .50 ± 0.25 (0.020 ± 0.010)						
	WVDC	6.3	10	6	10	16	25	50	10	16	25	50	10	16	25	50	10	16	25	50	10	16	25	50	10	16	25	50
Cap (pF) 1000 2200	820																											
Cap (μF) 0.010 0.022	4700	A	A																									
0.047 0.10 0.22	0.10	A	A																									
0.33 0.47 1.0	0.47			C	C								G	G							K							
2.2 4.7 10.0	1.0		C	C	C				G	G	G						N	N	N		M	M	M				N	
22.0 47.0				C													N	N			Q	P			X	N	N	
	WVDC	6.3	10	6	10	16	25	50	10	16	25	50	10	16	25	50	10	16	25	50	10	16	25	50	10	16	25	50
SIZE	0201	0402					0603					0805					1206					1210						

Letter	A	C	E	G	J	K	M	N	P	Q	X	Y	Z
Max. Thickness	0.33 (0.013)	0.56 (0.022)	0.71 (0.028)	0.90 (0.035)	0.94 (0.037)	1.02 (0.040)	1.27 (0.050)	1.40 (0.055)	1.52 (0.060)	1.78 (0.070)	2.29 (0.090)	2.54 (0.100)	2.79 (0.110)
PAPER					EMBOSSSED								