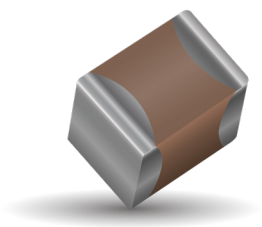


Y5V Dielectric

General Specifications



GENERAL DESCRIPTION

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 4 FOR COMPLETE PART NUMBER EXPLANATION)

0805

Size
(L" x W")

3

Voltage
6.3V = 6
10V = Z
16V = Y
25V = 3
50V = 5

G

Dielectric
Y5V = G

104

Capacitance Code (In pF)
2 Sig. Digits + Number of Zeros

Z

Capacitance Tolerance
Z = +80 –20%

A

Failure Rate
A = Not Applicable

T

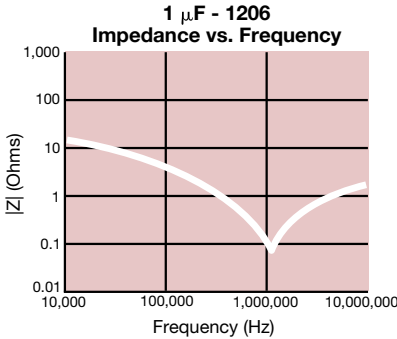
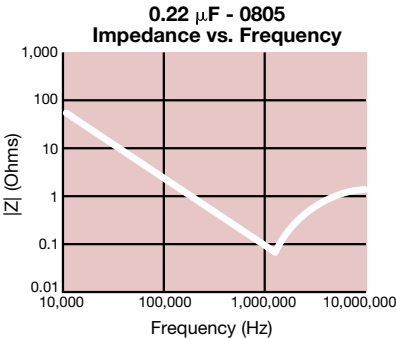
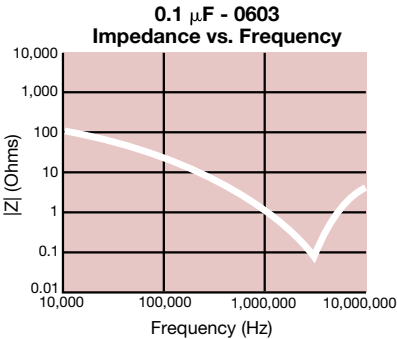
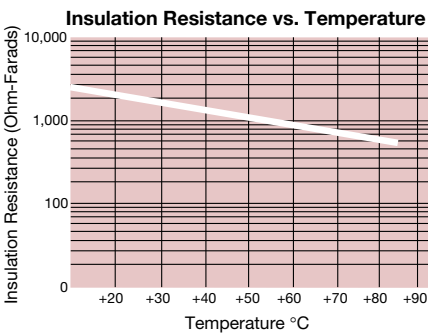
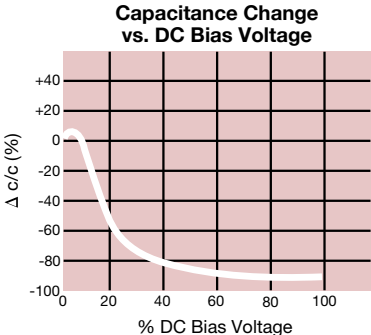
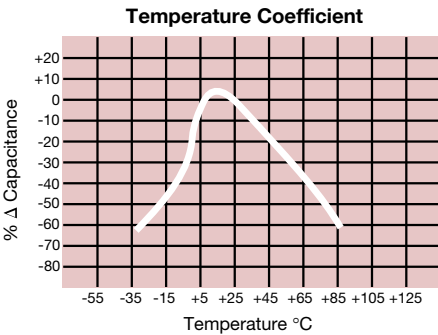
Terminations
T = Plated Ni and Sn

2

Packaging
2 = 7" Reel
4 = 13" Reel

A

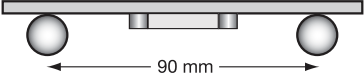
Special Code
A = Std. Product



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	Freq.: 1.0 kHz $\pm$ 10% Voltage: 1.0Vrms $\pm$.2V For Cap > 10 μ F, 0.5Vrms @ 120Hz	
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		
Insulation Resistance		10,000M Ω or 500M Ω - μ F, whichever is less		
Dielectric Strength		No breakdown or visual defects	Charge device with 250% 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 x 0.1		
Solderability		$\geq$ 95% of each terminal should be covered with fresh solder	Dip device in eutectic solder at 230 $\pm$ 5°C for 5.0 $\pm$ 0.5 seconds	
Resistance to Solder Heat	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 $\pm$ 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°C $\pm$ 2°	30 $\pm$ 3 minutes
	Capacitance Variation	$\leq \pm 20\%$	Step 2: Room Temp	$\leq$ 3 minutes
	Dissipation Factor	Meets Initial Values (As Above)	Step 3: +85°C $\pm$ 2°	30 $\pm$ 3 minutes
	Insulation Resistance	Meets Initial Values (As Above)	Step 4: Room Temp	$\leq$ 3 minutes
	Dielectric Strength	Meets Initial Values (As Above)	Repeat for 5 cycles and measure after 24 $\pm$ 2 hours at room temperature	
Load Life	Appearance	No visual defects	Charge device with twice rated voltage in test chamber set at 85°C $\pm$ 2°C for 1000 hours (+48, -0) Remove from test chamber and stabilize at room temperature for 24 $\pm$ 2 hours before measuring.	
	Capacitance Variation	$\leq \pm 30\%$		
	Dissipation Factor	$\leq$ Initial Value x 1.5 (See Above)		
	Insulation Resistance	$\geq$ Initial Value x 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°C $\pm$ 2°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 $\pm$ 2 hours before measuring.	
	Capacitance Variation	$\leq \pm 30\%$		
	Dissipation Factor	$\leq$ Initial Value x 1.5 (See above)		
	Insulation Resistance	$\geq$ Initial Value x 0.1 (See Above)		
	Dielectric Strength	Meets Initial Values (As Above)		

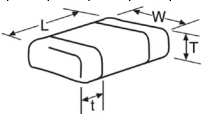
Y5V Dielectric
Capacitance Range



PREFERRED SIZES ARE SHADED

SIZE		0201						0402						0603						0805						1206						1210					
Soldering		Reflow Only						Reflow/Wave						Reflow/Wave						Reflow/Wave						Reflow/Wave						Reflow/Wave					
Packaging		All Paper						All Paper						All Paper						Paper/Embossed						Paper/Embossed						Paper/Embossed					
(L) Length	mm	0.60 ± 0.09						1.00 ± 0.10						1.60 ± 0.15						2.01 ± 0.20						3.20 ± 0.20						3.20 ± 0.20					
	(in.)	(0.024 ± 0.004)						(0.040 ± 0.004)						(0.063 ± 0.006)						(0.079 ± 0.008)						(0.126 ± 0.008)						(0.126 ± 0.008)					
W) Width	mm	0.30 ± 0.09						0.50 ± 0.10						.81 ± 0.15						1.25 ± 0.20						1.60 ± 0.20						2.50 ± 0.20					
	(in.)	(0.011 ± 0.004)						(0.020 ± 0.004)						(0.032 ± 0.006)						(0.049 ± 0.008)						(0.063 ± 0.008)						(0.098 ± 0.008)					
(t) Terminal	mm	0.15 ± 0.05						0.25 ± 0.15						0.35 ± 0.15						0.50 ± 0.25						0.50 ± 0.25						.50 ± 0.25					
	(in.)	(0.006 ± 0.002)						(0.010 ± 0.006)						(0.014 ± 0.006)						(0.020 ± 0.010)						(0.020 ± 0.010)						(0.020 ± 0.010)					
WVDC		63	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	10	16	25	50					
Cap (pF)	820																																				
	1000		A																																		
	2200		A																																		
Cap (μF)	4700		A																																		
	0.010	A	A																																		
	0.022	A	A																																		
	0.047	A																																			
	0.10				C	C																															
	0.22										G	G								K																	
	0.33																																				
	0.47					C																															
	1.0				C	C					G	G																									
	2.2																																				
	4.7					C																															
	10.0																																				
	22.0																																				
	47.0																																				
WVDC		63	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	10	16	25	50	10	16	25	50	
SIZE		0201						0402						0603						0805						1206						1210					

A 3D perspective diagram of a rectangular surface-mount component. The length is labeled 'L', the width is labeled 'W', and the thickness is labeled 't'.



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