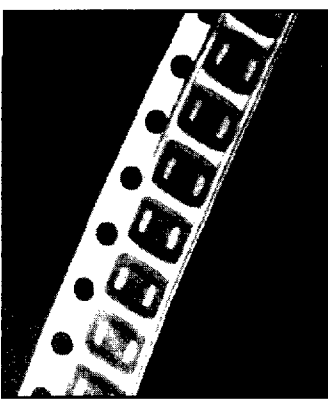


# Chips Multilayer Ceramic Capacitors



Multilayer Ceramic Capacitors



- Surface Mount
- COG, X7R, Z5U Temperature Coefficients
- Nickel Barrier/Solder Terminations
- Tape and Reel — Standard
- Z5U meets Y5V Characteristics
- 50 Volt Units Can Be Used For 63 Volt Applications

## GENERAL SPECIFICATIONS

**Voltage Range:**  
 COG: 50, 100 and 200 VDC  
 X7R: 50, 100 and 200 VDC  
 Z5U: 50 and 100 VDC

**Capacitance Range:**  
 COG: 1 pF to .012 μF  
 X7R: 220 pF to .33 μF  
 Z5U: 6800 pF to .47 μF

**Standard Sizes: (Three)**  
 0805, 1206, 1210

**Tape and Reel:**  
 7" reel per EIA RS 481-1  
 Parts with ^ (caret) following part number are 2,500 pcs. per reel.  
 All others are 4,000 pcs per reel.  
 13" reels are available by special request.

**Note:** Other chip sizes are available upon special request. Contact NACC for availability and prices.

## Performance Characteristics

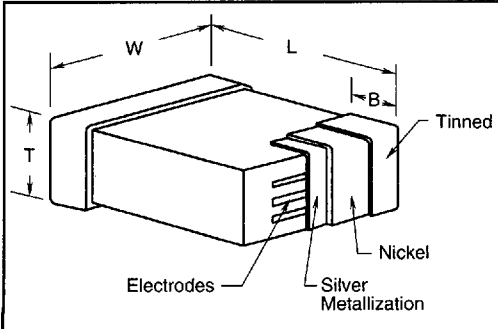
Parameter	COG (NPO)	X7R	Z5U
<b>Temperature Characteristics:</b>			
Range, °C: .....	-55°C to +125°C	-55°C to +125°C	+10°C to +85°C
Capacitance change without DC voltage: .....	0 ±30 PPM/°C*	±15%	+22%, -56%
<b>Aging Rate: %ΔC / Decade Hour, Maximum: .....</b>			
	0%	2.5%	5.0%
<b>Dissipation Factor:</b>			
Test Conditions @ 25°C: .....	> 100 pF w/1.0 vrms @ 1 KHz	w/ 1.0 vrms @ 1 KHz	w/ 0.5 vrms @ 1 KHz
	≤ 100 pF w/1.0 vrms @ 1 MHz		
Limits: .....	0.10 % Max	2.5 % Max	4.0 % Max
<b>Insulation Resistance (IR):</b>			
After 2 min. electrification @ 25°C with rated voltage applied: .....	1000 megohms x μF or 100 gigaohms	1000 megohms x μF or 100 gigaohms	1000 megohms x μF or 10 gigaohms
<b>Moisture Resistance: MIL-STD-202, Method 106</b> (20 cycles with 50 Volts applied)			
Post test limits @ 25°C, whichever is smaller: .....	100 megohms x μF or 10 gigaohms	100 megohms x μF or 10 gigaohms	100 megohms x μF or 1 gigaohm
<b>Immersion Cycling: MIL-STD-202, Method 104, Condition B</b> (2 cycles @ 15 minutes each. Each cycle consists of immersion in hot bath @ 65°C followed by immersion in cold salt water bath.)			
Post test limits @ 25°C:			
Insulation Resistance, whichever is smaller: .....	100 megohms x μF or 10 gigaohms	100 megohms x μF or 10 gigaohms	100 megohms x μF or 1 gigaohm
<b>Life Test: - 1000 Hrs.</b>			
Test Potential and Temperature: .....	200% V @ 125°C	200% V @ 125°C	150% V @ 85°C
Post test limits @ 25°C:			
Capacitance Change, whichever is greater: .....	< 2% or 0.5pF	±15% of initial value**	±30% of initial value**
Dissipation Factor: .....	0.25% Max	2.5% Max	5.0% Max
Insulation Resistance, whichever is smaller: .....	100 megohms x μF or 10 gigaohms	100 megohms x μF or 10 gigaohms	100 megohms x μF or 1 gigaohm
Dielectric Strength 2.5 times rated voltage for 5 seconds with current limited to 50 mA			

\* 60 PPM/°C below 10pF nominal  
 +53 PPM -30 PPM/°C from +25°C to -55°C comparable to MIL-C-20

\*\* X7R and Z5U dielectrics exhibit aging characteristics; therefore, it is highly recommended that capacitors be de-aged for 2 hours @ 150°C and stabilized at room temperature for 48 hours before capacitor measurements are made.

### Z5U meets all Y5V requirements and can be used in its place

Y5V - ΔC ≤ +22/-82% over -30°C to +85°C  
 Z5U - ΔC ≤ +22/-56% over +10°C to +85°C



Dimensions - Millimeters (Inches)				
Size Code	L Length	W Width	T Thickness Maximum	B Bandwidth
0805	2.0(.079) ±0.2(.008)	1.25(.049) ±0.2(.008)	1.3(.051)	0.5(.020) ±0.25(.010)
1206	3.2(.126) ±0.2(.008)	1.6(.063) ±0.2(.008)	1.5(.059)	0.5(.020) ±0.25(.010)
1210	3.2(.126) ±0.2(.008)	2.5(.098) ±0.2(.008)	1.7(.067)	0.5(.020) ±0.25(.010)

▷ 99E ■ 6647497 0004320 314 ■

**COG (NPO) Temperature Coefficient**

0805 Size Code			
Capacitance	Catalog Number		
	50 VDC	100 VDC	200 VDC
1.0pF	C0805C109*5GAC	C0805C109*1GAC	C0805C109*2GAC^
1.2pF	C0805C129*5GAC	C0805C129*1GAC	C0805C129*2GAC^
1.5pF	C0805C159*5GAC	C0805C159*1GAC	C0805C159*2GAC^
1.8pF	C0805C189*5GAC	C0805C189*1GAC	C0805C189*2GAC^
2.2pF	C0805C229*5GAC	C0805C229*1GAC	C0805C229*2GAC^
2.7pF	C0805C279*5GAC	C0805C279*1GAC	C0805C279*2GAC^
3.3pF	C0805C339*5GAC	C0805C339*1GAC	C0805C339*2GAC^
3.9pF	C0805C399*5GAC	C0805C399*1GAC	C0805C399*2GAC^
4.7pF	C0805C479*5GAC	C0805C479*1GAC	C0805C479*2GAC^
5.6pF	C0805C569*5GAC	C0805C569*1GAC	C0805C569*2GAC^
6.8pF	C0805C689*5GAC	C0805C689*1GAC	C0805C689*2GAC^
8.2pF	C0805C829*5GAC	C0805C829*1GAC	C0805C829*2GAC^
10pF	C0805C100*5GAC	C0805C100*1GAC	C0805C100*2GAC^
12pF	C0805C120*5GAC	C0805C120*1GAC	C0805C120*2GAC^
15pF	C0805C150*5GAC	C0805C150*1GAC	C0805C150*2GAC^
18pF	C0805C180*5GAC	C0805C180*1GAC	C0805C180*2GAC^
22pF	C0805C220*5GAC	C0805C220*1GAC	C0805C220*2GAC^
27pF	C0805C270*5GAC	C0805C270*1GAC	C0805C270*2GAC^
33pF	C0805C330*5GAC	C0805C330*1GAC	C0805C330*2GAC^
39pF	C0805C390*5GAC	C0805C390*1GAC	C0805C390*2GAC^
47pF	C0805C470*5GAC	C0805C470*1GAC	C0805C470*2GAC^
56pF	C0805C560*5GAC	C0805C560*1GAC	C0805C560*2GAC^
68pF	C0805C680*5GAC	C0805C680*1GAC	C0805C680*2GAC^
82pF	C0805C820*5GAC	C0805C820*1GAC	C0805C820*2GAC^
100pF	C0805C101*5GAC	C0805C101*1GAC	C0805C101*2GAC^
120pF	C0805C121*5GAC	C0805C121*1GAC	C0805C121*2GAC^
150pF	C0805C151*5GAC	C0805C151*1GAC	C0805C151*2GAC^
180pF	C0805C181*5GAC	C0805C181*1GAC	C0805C181*2GAC^
220pF	C0805C221*5GAC	C0805C221*1GAC	C0805C221*2GAC^
270pF	C0805C271*5GAC	C0805C271*1GAC	C0805C271*2GAC^
330pF	C0805C331*5GAC	C0805C331*1GAC	C0805C331*2GAC^
390pF	C0805C391*5GAC	C0805C391*1GAC	C0805C391*2GAC^
470pF	C0805C471*5GAC	C0805C471*1GAC	C0805C471*2GAC^
560pF	C0805C561*5GAC	C0805C561*1GAC	C0805C561*2GAC^
680pF	C0805C681*5GAC	C0805C681*1GAC	C0805C681*2GAC^
820pF	C0805C821*5GAC	C0805C821*1GAC	C0805C821*2GAC^
1000pF	C0805C102*5GAC	C0805C102*1GAC	C0805C102*2GAC^
1200pF	C0805C122*5GAC		
1500pF	C0805C152*5GAC		
1800pF	C0805C182*5GAC		

1206 Size Code			
Capacitance	Catalog Number		
	50 VDC	100 VDC	200 VDC
180pF	C1206C181*5GAC	C1206C181*1GAC	C1206C181*2GAC^
220pF	C1206C221*5GAC	C1206C221*1GAC	C1206C221*2GAC^
270pF	C1206C271*5GAC	C1206C271*1GAC	C1206C271*2GAC^
330pF	C1206C331*5GAC	C1206C331*1GAC	C1206C331*2GAC^
390pF	C1206C391*5GAC	C1206C391*1GAC	C1206C391*2GAC^
470pF	C1206C471*5GAC	C1206C471*1GAC	C1206C471*2GAC^
560pF	C1206C561*5GAC	C1206C561*1GAC	C1206C561*2GAC^
680pF	C1206C681*5GAC	C1206C681*1GAC	C1206C681*2GAC^
820pF	C1206C821*5GAC	C1206C821*1GAC	C1206C821*2GAC^
1000pF	C1206C102*5GAC	C1206C102*1GAC	C1206C102*2GAC^
1200pF	C1206C122*5GAC	C1206C122*1GAC	C1206C122*2GAC^
1500pF	C1206C152*5GAC	C1206C152*1GAC	C1206C152*2GAC^
1800pF	C1206C182*5GAC	C1206C182*1GAC	C1206C182*2GAC^
2200pF	C1206C222*5GAC	C1206C222*1GAC	
2700pF	C1206C272*5GAC	C1206C272*1GAC	
3300pF	C1206C332*5GAC	C1206C332*1GAC	
3900pF	C1206C392*5GAC	C1206C392*1GAC	
4700pF	C1206C472*5GAC		
5600pF	C1206C562*5GAC		

1210 Size Code			
Capacitance	Catalog Number		
	50 VDC	100 VDC	200 VDC
10pF	C1210C100*5GAC	C1210C100*1GAC	C1210C100*2GAC^
12pF	C1210C120*5GAC	C1210C120*1GAC	C1210C120*2GAC^
15pF	C1210C150*5GAC	C1210C150*1GAC	C1210C150*2GAC^
18pF	C1210C180*5GAC	C1210C180*1GAC	C1210C180*2GAC^
22pF	C1210C220*5GAC	C1210C220*1GAC	C1210C220*2GAC^
27pF	C1210C270*5GAC	C1210C270*1GAC	C1210C270*2GAC^
33pF	C1210C330*5GAC	C1210C330*1GAC	C1210C330*2GAC^
39pF	C1210C390*5GAC	C1210C390*1GAC	C1210C390*2GAC^
47pF	C1210C470*5GAC	C1210C470*1GAC	C1210C470*2GAC^
56pF	C1210C560*5GAC	C1210C560*1GAC	C1210C560*2GAC^
68pF	C1210C680*5GAC	C1210C680*1GAC	C1210C680*2GAC^
82pF	C1210C820*5GAC	C1210C820*1GAC	C1210C820*2GAC^
100pF	C1210C101*5GAC	C1210C101*1GAC	C1210C101*2GAC^
120pF	C1210C121*5GAC	C1210C121*1GAC	C1210C121*2GAC^
150pF	C1210C151*5GAC	C1210C151*1GAC	C1210C151*2GAC^
180pF	C1210C181*5GAC	C1210C181*1GAC	C1210C181*2GAC^
220pF	C1210C221*5GAC	C1210C221*1GAC	C1210C221*2GAC^
270pF	C1210C271*5GAC	C1210C271*1GAC	C1210C271*2GAC^
330pF	C1210C331*5GAC	C1210C331*1GAC	C1210C331*2GAC^
390pF	C1210C391*5GAC	C1210C391*1GAC	C1210C391*2GAC^
470pF	C1210C471*5GAC	C1210C471*1GAC	C1210C471*2GAC^
560pF	C1210C561*5GAC	C1210C561*1GAC	C1210C561*2GAC^
680pF	C1210C681*5GAC	C1210C681*1GAC	C1210C681*2GAC^
820pF	C1210C821*5GAC	C1210C821*1GAC	C1210C821*2GAC^
1000pF	C1210C102*5GAC	C1210C102*1GAC	C1210C102*2GAC^
1200pF	C1210C122*5GAC	C1210C122*1GAC	C1210C122*2GAC^
1500pF	C1210C152*5GAC	C1210C152*1GAC	C1210C152*2GAC^
1800pF	C1210C182*5GAC	C1210C182*1GAC	C1210C182*2GAC^
2200pF	C1210C222*5GAC	C1210C222*1GAC	C1210C222*2GAC^
2700pF	C1210C272*5GAC	C1210C272*1GAC	C1210C272*2GAC^
3300pF	C1210C332*5GAC	C1210C332*1GAC	C1210C332*2GAC^
3900pF	C1210C392*5GAC	C1210C392*1GAC	
4700pF	C1210C472*5GAC	C1210C472*1GAC	
5600pF	C1210C562*5GAC	C1210C562*1GAC	
6800pF	C1210C682*5GAC	C1210C682*1GAC	
8200pF	C1210C822*5GAC		
10000pF	C1210C103*5GAC		
12000pF	C1210C123*5GAC		

\* Insert proper letter code for desired tolerance:  
 ±0.25pF (C) is standard on values less than 10 pF  
 ±5% (J) is standard on values ≥ 10 pF

Other Available Tolerances:  
 Values less than 27pF:  
 C = ±0.25pF, D = ±0.5pF  
 Values greater than 10 pF:  
 F = ±1%; G = ±2%; H = ±2.5%;  
 J = ±5%; K = ±10%; M = ±20%

^ Parts with caret (^) following catalog number are 2,500 pcs per reel  
 All others are 4,000 pcs per reel

1206 Size Code			
Capacitance	Catalog Number		
	50 VDC	100 VDC	200 VDC
1.0pF	C1206C109*5GAC	C1206C109*1GAC	C1206C109*2GAC^
1.2pF	C1206C129*5GAC	C1206C129*1GAC	C1206C129*2GAC^
1.5pF	C1206C159*5GAC	C1206C159*1GAC	C1206C159*2GAC^
1.8pF	C1206C189*5GAC	C1206C189*1GAC	C1206C189*2GAC^
2.2pF	C1206C229*5GAC	C1206C229*1GAC	C1206C229*2GAC^
2.7pF	C1206C279*5GAC	C1206C279*1GAC	C1206C279*2GAC^
3.3pF	C1206C339*5GAC	C1206C339*1GAC	C1206C339*2GAC^
3.9pF	C1206C399*5GAC	C1206C399*1GAC	C1206C399*2GAC^
4.7pF	C1206C479*5GAC	C1206C479*1GAC	C1206C479*2GAC^
5.6pF	C1206C569*5GAC	C1206C569*1GAC	C1206C569*2GAC^
6.8pF	C1206C689*5GAC	C1206C689*1GAC	C1206C689*2GAC^
8.2pF	C1206C829*5GAC	C1206C829*1GAC	C1206C829*2GAC^
10pF	C1206C100*5GAC	C1206C100*1GAC	C1206C100*2GAC^
12pF	C1206C120*5GAC	C1206C120*1GAC	C1206C120*2GAC^
15pF	C1206C150*5GAC	C1206C150*1GAC	C1206C150*2GAC^
18pF	C1206C180*5GAC	C1206C180*1GAC	C1206C180*2GAC^
22pF	C1206C220*5GAC	C1206C220*1GAC	C1206C220*2GAC^
27pF	C1206C270*5GAC	C1206C270*1GAC	C1206C270*2GAC^
33pF	C1206C330*5GAC	C1206C330*1GAC	C1206C330*2GAC^
39pF	C1206C390*5GAC	C1206C390*1GAC	C1206C390*2GAC^
47pF	C1206C470*5GAC	C1206C470*1GAC	C1206C470*2GAC^
56pF	C1206C560*5GAC	C1206C560*1GAC	C1206C560*2GAC^
68pF	C1206C680*5GAC	C1206C680*1GAC	C1206C680*2GAC^
82pF	C1206C820*5GAC	C1206C820*1GAC	C1206C820*2GAC^
100pF	C1206C101*5GAC	C1206C101*1GAC	C1206C101*2GAC^
120pF	C1206C121*5GAC	C1206C121*1GAC	C1206C121*2GAC^
150pF	C1206C151*5GAC	C1206C151*1GAC	C1206C151*2GAC^

**50 volt units can be used for 63 volt applications**



# Chips Multilayer Ceramic Capacitors



Multilayer Ceramic Capacitors

## X7R Temperature Coefficient

0805 Size Code			
Capacitance	Catalog Number		
	50 VDC	100 VDC	200 VDC
220pF	C0805C221*5RAC	C0805C221*1RAC	C0805C221*2RAC ^
270pF	C0805C271*5RAC	C0805C271*1RAC	C0805C271*2RAC ^
330pF	C0805C331*5RAC	C0805C331*1RAC	C0805C331*2RAC ^
390pF	C0805C391*5RAC	C0805C391*1RAC	C0805C391*2RAC ^
470pF	C0805C471*5RAC	C0805C471*1RAC	C0805C471*2RAC ^
560pF	C0805C561*5RAC	C0805C561*1RAC	C0805C561*2RAC ^
680pF	C0805C681*5RAC	C0805C681*1RAC	C0805C681*2RAC ^
820pF	C0805C821*5RAC	C0805C821*1RAC	C0805C821*2RAC ^
1000pF	C0805C102*5RAC	C0805C102*1RAC	C0805C102*2RAC ^
1200pF	C0805C122*5RAC	C0805C122*1RAC	C0805C122*2RAC ^
1500pF	C0805C152*5RAC	C0805C152*1RAC	C0805C152*2RAC ^
1800pF	C0805C182*5RAC	C0805C182*1RAC	C0805C182*2RAC ^
2200pF	C0805C222*5RAC	C0805C222*1RAC	C0805C222*2RAC ^
2700pF	C0805C272*5RAC	C0805C272*1RAC	C0805C272*2RAC ^
3300pF	C0805C332*5RAC	C0805C332*1RAC	C0805C332*2RAC ^
3900pF	C0805C392*5RAC	C0805C392*1RAC	C0805C392*2RAC ^
4700pF	C0805C472*5RAC	C0805C472*1RAC	C0805C472*2RAC ^
5600pF	C0805C562*5RAC	C0805C562*1RAC	C0805C562*2RAC ^
6800pF	C0805C682*5RAC	C0805C682*1RAC	C0805C682*2RAC ^
8200pF	C0805C822*5RAC	C0805C822*1RAC	C0805C822*2RAC ^
10000pF	C0805C103*5RAC	C0805C103*1RAC	
12000pF	C0805C123*5RAC		
15000pF	C0805C153*5RAC		
18000pF	C0805C183*5RAC		
22000pF	C0805C223*5RAC		
27000pF	C0805C273*5RAC		
33000pF	C0805C333*5RAC		
39000pF	C0805C393*5RAC		
47000pF	C0805C473*5RAC		
56000pF	C0805C563*5RAC ^		
68000pF	C0805C683*5RAC ^		
82000pF	C0805C823*5RAC ^		
.1uF	C0805C104*5RAC ^		

1210 Size Code			
Capacitance	Catalog Number		
	50 VDC	100 VDC	200 VDC
2200pF	C1210C222*5RAC	C1210C222*1RAC	C1210C222*2RAC ^
2700pF	C1210C272*5RAC	C1210C272*1RAC	C1210C272*2RAC ^
3300pF	C1210C332*5RAC	C1210C332*1RAC	C1210C332*2RAC ^
3900pF	C1210C392*5RAC	C1210C392*1RAC	C1210C392*2RAC ^
4700pF	C1210C472*5RAC	C1210C472*1RAC	C1210C472*2RAC ^
5600pF	C1210C562*5RAC	C1210C562*1RAC	C1210C562*2RAC ^
6800pF	C1210C682*5RAC	C1210C682*1RAC	C1210C682*2RAC ^
8200pF	C1210C822*5RAC	C1210C822*1RAC	C1210C822*2RAC ^
10000pF	C1210C103*5RAC	C1210C103*1RAC	C1210C103*2RAC ^
12000pF	C1210C123*5RAC	C1210C123*1RAC	C1210C123*2RAC ^
15000pF	C1210C153*5RAC	C1210C153*1RAC	C1210C153*2RAC ^
18000pF	C1210C183*5RAC	C1210C183*1RAC	C1210C183*2RAC ^
22000pF	C1210C223*5RAC	C1210C223*1RAC	C1210C223*2RAC ^
27000pF	C1210C273*5RAC	C1210C273*1RAC	C1210C273*2RAC ^
33000pF	C1210C333*5RAC	C1210C333*1RAC	C1210C333*2RAC ^
39000pF	C1210C393*5RAC	C1210C393*1RAC	C1210C393*2RAC ^
47000pF	C1210C473*5RAC	C1210C473*1RAC	C1210C473*2RAC ^
56000pF	C1210C563*5RAC	C1210C563*1RAC ^	
68000pF	C1210C683*5RAC	C1210C683*1RAC ^	
82000pF	C1210C823*5RAC	C1210C823*1RAC ^	
.1uF	C1210C104*5RAC	C1210C104*1RAC ^	
.12uF	C1210C124*5RAC		
.15uF	C1210C154*5RAC		
.18uF	C1210C184*5RAC		
.22uF	C1210C224*5RAC		
.27uF	C1210C274*5RAC		
.33uF	C1210C334*5RAC		

\* Insert proper letter code for desired tolerance:

±10 (K) Tolerance is standard

J = ±5%, K = ±10%, M = ±20%

^ Parts with caret (^) following catalog number are 2,500 pcs per reel.

All others are 4,000pcs per reel

1206 Size Code			
Capacitance	Catalog Number		
	50 VDC	100 VDC	200 VDC
1000pF	C1206C102*5RAC	C1206C102*1RAC	C1206C102*2RAC ^
1200pF	C1206C122*5RAC	C1206C122*1RAC	C1206C122*2RAC ^
1500pF	C1206C152*5RAC	C1206C152*1RAC	C1206C152*2RAC ^
1800pF	C1206C182*5RAC	C1206C182*1RAC	C1206C182*2RAC ^
2200pF	C1206C222*5RAC	C1206C222*1RAC	C1206C222*2RAC ^
2700pF	C1206C272*5RAC	C1206C272*1RAC	C1206C272*2RAC ^
3300pF	C1206C332*5RAC	C1206C332*1RAC	C1206C332*2RAC ^
3900pF	C1206C392*5RAC	C1206C392*1RAC	C1206C392*2RAC ^
4700pF	C1206C472*5RAC	C1206C472*1RAC	C1206C472*2RAC ^
5600pF	C1206C562*5RAC	C1206C562*1RAC	C1206C562*2RAC ^
6800pF	C1206C682*5RAC	C1206C682*1RAC	C1206C682*2RAC ^
8200pF	C1206C822*5RAC	C1206C822*1RAC	C1206C822*2RAC ^
10000pF	C1206C103*5RAC	C1206C103*1RAC	C1206C103*2RAC ^
12000pF	C1206C123*5RAC	C1206C123*1RAC	C1206C123*2RAC ^
15000pF	C1206C153*5RAC	C1206C153*1RAC	C1206C153*2RAC ^
18000pF	C1206C183*5RAC	C1206C183*1RAC	C1206C183*2RAC ^
22000pF	C1206C223*5RAC	C1206C223*1RAC ^	C1206C223*2RAC ^
27000pF	C1206C273*5RAC	C1206C273*1RAC ^	
33000pF	C1206C333*5RAC	C1206C333*1RAC ^	
39000pF	C1206C393*5RAC	C1206C393*1RAC ^	
47000pF	C1206C473*5RAC	C1206C473*1RAC ^	
56000pF	C1206C563*5RAC		
68000pF	C1206C683*5RAC		
82000pF	C1206C823*5RAC		
.1uF	C1206C104*5RAC		
.12uF	C1206C124*5RAC		
.15uF	C1206C154*5RAC		
.18 uF	C1206C184*5RAC		
.22 uF	C1206C224*5RAC		

50 volt units can be used for 63 volt applications

## Z5U Temperature Coefficient

### 0805 Size Code

Capacitance	Catalog Number		
	50 VDC	100 VDC	200 VDC
6800pF	C0805C682*5UAC	C0805C682*1UAC	
8200pF	C0805C822*5UAC	C0805C822*1UAC	
10000pF	C0805C103*5UAC	C0805C103*1UAC	
12000pF	C0805C123*5UAC		
15000pF	C0805C153*5UAC		
18000pF	C0805C183*5UAC		
22000pF	C0805C223*5UAC		
27000pF	C0805C273*5UAC		
33000pF	C0805C333*5UAC ^		
39000pF	C0805C393*5UAC ^		
47000pF	C0805C473*5UAC ^		
56000pF	C0805C563*5UAC ^		
68000pF	C0805C683*5UAC ^		
82000pF	C0805C823*5UAC ^		
.1uF	C0805C104*5UAC ^		

### 1210 Size Code

Capacitance	Catalog Number		
	50 VDC	100 VDC	200 VDC
47000pF	C1210C473*5UAC	C1210C473*1UAC	
56000pF	C1210C563*5UAC	C1210C563*1UAC	
68000pF	C1210C683*5UAC	C1210C683*1UAC	
82000pF	C1210C823*5UAC	C1210C823*1UAC	
.1uF	C1210C104*5UAC		
.15uF	C1210C154*5UAC		
.18uF	C1210C184*5UAC		
.22uF	C1210C224*5UAC ^		
.27uF	C1210C274*5UAC ^		
.33uF	C1210C334*5UAC ^		
.39uF	C1210C394*5UAC ^		
.47uF	C1210C474*5UAC ^		

\* Insert proper letter code for desired tolerance:

±20 (M) Tolerance is standard

M = ±20%; Z = +80%-0%

^ Parts with caret (^) following catalog number are 2,500 pcs per reel

All others are 4,000 pcs per reel

### 1206 Size Code

Capacitance	Catalog Number		
	50 VDC	100 VDC	200 VDC
10000pF	C1206C103*5UAC	C1206C103*1UAC	
12000pF	C1206C123*5UAC	C1206C123*1UAC	
15000pF	C1206C153*5UAC	C1206C153*1UAC	
18000pF	C1206C183*5UAC	C1206C183*1UAC	
22000pF	C1206C223*5UAC	C1206C223*1UAC	
27000pF	C1206C273*5UAC	C1206C273*1UAC	
33000pF	C1206C333*5UAC	C1206C333*1UAC	
39000pF	C1206C393*5UAC	C1206C393*1UAC	
47000pF	C1206C473*5UAC		
56000pF	C1206C563*5UAC		
68000pF	C1206C683*5UAC		
82000pF	C1206C823*5UAC		
.1uF	C1206C104*5UAC		
.12uF	C1206C124*5UAC ^		
.15uF	C1206C154*5UAC ^		
.18uF	C1206C184*5UAC ^		
.22uF	C1206C224*5UAC ^		

**50 volt units can be used for 63 volt applications**

**Z5U meets all Y5V requirements and can be used in its place**

Y5V -  $\Delta C \leq +22/-82\%$  over  $-30^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

Z5U -  $\Delta C \leq +22/-56\%$  over  $+10^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$