



FEATURES:

- AEC-Q200 certified/qualified
- Capacitance range: 0.1pF to 10uF
- Voltage range: 10V to 1000V DC
- Terminations: 100% matte Tin (Sn)
- 3mm minimum bending strength specification



PART NUMBER STRUCTURE

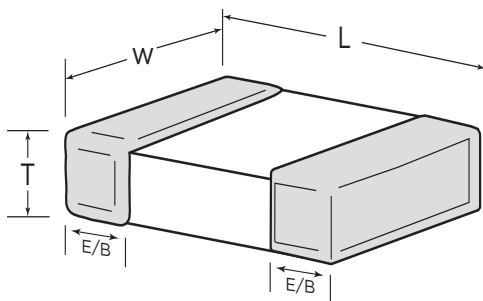
AGC Series	1206 Size	X7R Temperature Characteristic (Dielectric)	500 Rated Voltage	- 473 Capacitance (picofarads)	K Tolerance	N Termination	P Packaging
	0201 0402 0603 0805 1206 1210	COG/NPO X7R	1st two digits are significant followed by number of zeroes. 100 = 10 VDC 160 = 16 VDC 250 = 25 VDC 500 = 50 VDC 101 = 100 VDC 201 = 200 VDC 251 = 250 VDC 501 = 500 VDC 631 = 630 VDC 102 = 1000 VDC	1st two digits are significant, followed by number of zeroes. R denotes decimal e.g: 101 = 100pF 104 = 100nF 6R8 = 6.8pF	* A = ±0.05pF * B = ±0.1pF * C = ±0.25pF * D = ±0.5pF F ±1% G = ±2% J = ±5% K = ±10% M = ±20% * For values below 10pF only.	N = 100% Matte Tin over Nickel over a conductive Polymer	E = Embossed Tape (7" reel) U = Embossed Tape (13" reel) P = Paper Tape (7" reel) R = Paper Tape (13" reel)

Example P/N: AGC1206X7R500-473KNP

Standard termination finish is 100% matte Tin (Sn) over Nickel.

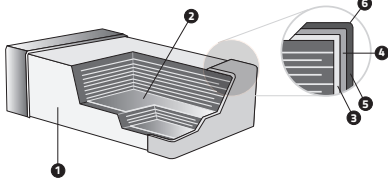
DIMENSIONS

Unit: inches (mm)



SIZE	L	W	T	E/B
0201	0.024 ± 0.001 (0.60 ± 0.03)	0.012 ± 0.001 (0.30 ± 0.03)	0.012 ± 0.001 (0.30 ± 0.03)	0.006 ± 0.002 (0.15 ± 0.05)
0402	0.039 ± 0.002 (1.00 ± 0.05)	0.020 ± 0.002 (0.5 ± 0.05)	0.020 ± 0.002 (0.5 ± 0.05)	0.010 ± 0.002/-0.004 (0.25 ± 0.05/-0.10)
0603	0.063 ± 0.004 (1.6 ± 0.10)	0.031 ± 0.004 (0.8 ± 0.10)	0.031 ± 0.003 (0.8 ± 0.07)	0.016 ± 0.006 (0.40 ± 0.15)
	0.063 + 0.006/-0.004 (1.6 + 0.15/-0.10)	0.031 + 0.006/-0.004 (0.8 + 0.15/-0.10)	0.031 + 0.006/-0.004 (0.8 + 0.15/-0.10)	
0805	0.079 ± 0.006 (2.0 ± 0.15)	0.049 ± 0.004 (1.25 ± 0.10)	0.024 ± 0.004 (0.60 ± 0.10)	0.020 ± 0.008 (0.50 ± 0.20)
			0.031 ± 0.004 (0.80 ± 0.10)	
	0.049 ± 0.004 (1.25 ± 0.10)			
	0.079 ± 0.008 (2.0 ± 0.20)	0.049 ± 0.008 (1.25 ± 0.20)	0.049 ± 0.008 (1.25 ± 0.20)	
1206	0.126 ± 0.006 (3.2 ± 0.15)	0.063 ± 0.006 (1.6 ± 0.15)	0.031 ± 0.004 (0.80 ± 0.10)	0.024 ± 0.008 (0.60 ± 0.20)
			0.037 ± 0.004 (0.95 ± 0.10)	
	0.049 ± 0.004 (1.25 ± 0.10)			
	0.045 ± 0.006 (1.15 ± 0.15)			
	0.126 ± 0.008 (3.2 ± 0.20)	0.063 ± 0.008 (1.6 ± 0.20)	0.063 ± 0.008 (1.60 ± 0.20)	
	0.126 + 0.012/-0.004 (3.2 + 0.30/-0.10)	0.063 + 0.012/-0.004 (1.60 + 0.30/-0.10)	0.063 + 0.012/-0.004 (1.60 + 0.30/-0.10)	
1210	0.126 ± 0.012 (3.2 ± 0.30)	0.098 ± 0.008 (2.5 ± 0.20)	0.037 ± 0.004 (0.95 ± 0.10)	0.030 ± 0.010 (0.75 ± 0.25)
			0.049 ± 0.004 (1.25 ± 0.10)	
	0.063 ± 0.008 (1.60 ± 0.20)			
	0.079 ± 0.008 (2.00 ± 0.20)			
	0.126 ± 0.016 (3.2 ± 0.40)	0.098 ± 0.012 (2.5 ± 0.30)	0.098 ± 0.012 (2.50 ± 0.30)	

STRUCTURE

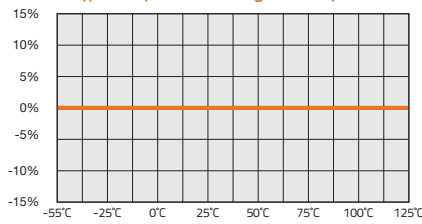


1	Ceramic Body (dielectric)	4	Silver Polymer
2	Inner Electrode	5	Nickel Plating
3	Inner Termination	6	100% Matte Tin (Sn)

ELECTRICAL SPECIFICATION & RANGE

COG/NPO

Typical Capacitance Change vs. Temperature



Operating Temperature Range:

-55°C to +125°C

Temperature Coefficient:

0 ±30PPM/°C

Temperature Voltage Coefficient:

0 ±30PPM/°C

Insulation Resistance:

>1000Ω-F or 100GΩ, for values ≤ 0.047μF

(whichever is less at 25°C, VDCV).

For Capacitance values > 0.047μF, the 500 Ω-F rule applies.

(The IR at 125°C is 10% of the value at 25°C)

Ageing: None

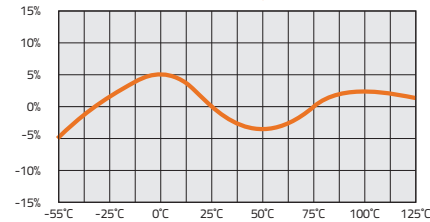
Withstanding Voltage: >2.5 times VDCW

Capacitance Tolerance: A,B,C,D,F,G,J,K

Dissipation Factor: 0.1% max

X7R

Typical Capacitance Change vs. Temperature



Operating Temperature Range:

-55°C to +125°C

Temperature Coefficient:

0 ±15%Δ°C MAX.

Temperature Voltage Coefficient:

X7R not applicable

Insulation Resistance:

>100Ω-F or 1GΩ, whichever is less

at 25°C, VDCV. (10,000Ω at 125°C)

Ageing:

2.5% per decade hour, typical

Withstanding Voltage:

>2.5 times VDCW

Capacitance Tolerance:

J,K,M

Rated Voltage	D.F.≤	Exception of D.F.≤	
≥100V	≤2.5%	≤3%	1206≥0.47μF
		≤5%	0805>0.1μF; 0603≥0.068μF; 1206>1μF; 1210≥2.2μF
		≤10%	0805>0.22μF; 1210≥3.3μF
50V	≤2.5%	≤3%	0201(50V); 0603≥0.047μF; 0805≥0.18μF; 1206≥0.47μF
		≤5%	0201≥0.01μF; 1210≥4.7μF
		≤10%	0402≥0.012μF; 0603>0.1μF; 0805≥1μF; 1206≥2.2μF; 1210≥10μF
35V	≤3.5%	≤10%	0603≥1μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥10μF
25V	≤3.5%	≤5%	0201≥0.01μF; 0805≥1μF; 1210≥10μF
		≤7%	0603≥0.33μF
		≤10%	0201≥0.01μF; 0402≥0.10μF & (0402/X7R≥0.056μF); 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF
		≤12.5%	0402≥0.47μF
16V	≤3.5%	≤5%	0201≥0.01μF; 0402≥0.33μF; 0603≥0.15μF; 0805≥0.68μF; 1206≥2.2μF; 1210≥4.7μF
		≤10%	0201≥0.01μF; (0201/X7R≥0.022μF); 0402≥0.22μF; 0603≥0.68μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF
10V	≤5%	≤10%	0201≥0.012μF; 0402≥0.33μF(0402/X7R≥0.22μF); 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥22μF; 01R5
		≤15%	201≥0.1μF; 0402≥1μF
6.3V	≤10%	≤15%	0201≥0.1μF; 0402≥1μF(0402/X6S≥0.47μF); 0603≥10μF; 0805≥4.7μF; 1206≥47μF; 1210≥100μF
		≤20%	0402≥2.2μF
4V	≤15%	-	-

Rated Voltage	Insulation Resistance
100V: All X7R; 1210≥3.3μF	1GΩ or 100Ω-F Whichever is smaller
50V: 0402>0.01μF; 0603≥1μF; 0805≥1μF; 1206≥4.7μF; 1210≥4.7μF	
35V: 0603≥1μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥10μF	
25V: 0402≥0.22μF; 0603≥2.2μF; 0805≥2.2μF; 1206≥10μF; 1210≥10μF	
16V: 0402≥0.22μF; 0603≥1μF; 0805≥2.2μF; 1206≥10μF; 1210≥47μF	
10V: 0402≥0.47μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥47μF	
6.3V ; 4V ; Size 1812	

VOLTAGE AND CAPACITANCE RANGE

COG (NPO) DIELECTRIC (0201 - 0402)

Values that are typically available. (Thickness in mm).

Size (inches)		0201					0402					
VDCW (MAX)		10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	
CAPACITANCE CODE	OR1	0.1pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	OR2	0.2pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	OR3	0.3pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	OR4	0.4pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	OR5	0.5pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	OR6	0.6pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	OR7	0.7pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	OR8	0.8pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	OR9	0.9pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	1R0	1.0pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	1R2	1.2pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	1R5	1.5pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	1R8	1.8pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	2R2	2.2pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	2R7	2.7pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	3R3	3.3pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	3R9	3.9pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	4R7	4.7pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	5R6	5.6pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	6R8	6.8pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	8R2	8.2pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	100	10pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	120	12pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	150	15pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	180	18pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	220	22pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	270	27pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	330	33pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	390	39pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	470	47pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	560	56pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	680	68pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03		0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
	820	82pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03		0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
101	100pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03		0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
121	120pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03		0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
151	150pF						0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
181	180pF						0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
221	220pF						0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
271	270pF						0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05		
331	330pF						0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05		
391	390pF						0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05		
471	470pF						0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05		
561	560pF						0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05		
681	680pF						0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05		
821	820pF						0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05		
102	1000pF						0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05		
122	1200pF											
152	1500pF											
182	1800pF											
222	2200pF											
272	2700pF											
332	3300pF											

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.

VOLTAGE AND CAPACITANCE RANGE

COG (NPO) DIELECTRIC (0603)

Values that are typically available. (Thickness in mm).

Size (inches)		0603						
VDCW (MAX)		10V	16V	25V	50V	100V	200V	250V
OR1	0.1pF							
OR2	0.2pF							
OR3	0.3pF							
OR4	0.4pF							
OR5	0.5pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
OR6	0.6pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
OR7	0.7pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
OR8	0.8pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
OR9	0.9pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
1R0	1.0pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
1R2	1.2pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
1R5	1.5pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
1R8	1.8pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
2R2	2.2pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
2R7	2.7pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
3R3	3.3pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
3R9	3.9pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
4R7	4.7pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
5R6	5.6pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
6R8	6.8pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
8R2	8.2pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
100	10pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
120	12pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
150	15pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
180	18pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
220	22pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
270	27pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
330	33pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
390	39pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
470	47pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
560	56pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
680	68pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
820	82pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
101	100pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
121	120pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
151	150pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
181	180pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
221	220pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07
271	270pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80+0.15/-0.10	0.80+0.15/-0.10
331	330pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80+0.15/-0.10	0.80+0.15/-0.10
391	390pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80+0.15/-0.10	0.80+0.15/-0.10
471	470pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80+0.15/-0.10	0.80+0.15/-0.10
561	560pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80+0.15/-0.10	0.80+0.15/-0.10
681	680pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80+0.15/-0.10	0.80+0.15/-0.10
821	820pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80+0.15/-0.10	0.80+0.15/-0.10
102	1000pF	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		
122	1200pF	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10		
152	1500pF	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10		
182	1800pF	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10		
222	2200pF	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10			
272	2700pF	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10			
332	3300pF	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10	0.80+0.15/-0.10			

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.

VOLTAGE AND CAPACITANCE RANGE COG (NPO) DIELECTRIC (0805)

Values that are typically available. (Thickness in mm).

SIZE (INCHES)		0805									
VDCW (MAX)		10V	16V	25V	50V	100V	200V	250V	500V	630V	
CAPACITANCE CODE	OR5	0.5pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	OR6	0.6pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	OR7	0.7pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	OR8	0.8pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	OR9	0.9pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	1R0	1.0pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	1R2	1.2pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	1R5	1.5pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	1R8	1.8pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	2R2	2.2pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	2R7	2.7pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	3R3	3.3pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	3R9	3.9pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	4R7	4.7pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	5R6	5.6pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	6R8	6.8pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	8R2	8.2pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	100	10pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	120	12pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	150	15pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	180	18pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	220	22pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	270	27pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	330	33pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	390	39pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	470	47pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	560	56pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	680	68pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	820	82pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	
	101	100pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.80±0.10	0.80±0.10	0.80±0.10	
	121	120pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.80±0.10	0.80±0.10	1.25±0.10	
	151	150pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	1.25±0.10	1.25±0.10	1.25±0.10	
	181	180pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	1.25±0.10	1.25±0.10	1.25±0.10	
221	220pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	1.25±0.10	1.25±0.10	1.25±0.10		
271	270pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	1.25±0.10	1.25±0.10	1.25±0.10		
331	330pF	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	1.25±0.10	1.25±0.10	1.25±0.10		
391	390pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10		
471	470pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.20		
561	560pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.20		
681	680pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.20		
821	820pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.20		
102	1000pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.20		
122	1200pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.20		
152	1500pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.20		
182	1800pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.20		
222	2200pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.20		
272	2700pF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	1.25±0.20			
332	3300pF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	1.25±0.20			
392	3900pF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	1.25±0.20			
472	4700pF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	1.25±0.20			
562	5600pF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10					
682	6800pF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10					
822	8200pF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10					
103	0.010uF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10					
123	0.012uF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10					
153	0.015uF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10					
183	0.018uF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10					
223	0.022uF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10					

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.

VOLTAGE AND CAPACITANCE RANGE

COG (NPO) DIELECTRIC (1206)

Values that are typically available. (Thickness in mm).

SIZE (INCHES)		1206									
VDCW (MAX)		10V	16V	25V	50V	100V	200V	250V	500V	630V	1000V
1R0	1.0pF										
1R2	1.2pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	
1R5	1.5pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
1R8	1.8pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
2R2	2.2pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
2R7	2.7pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
3R3	3.3pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
3R9	3.9pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
4R7	4.7pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
5R6	5.6pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
6R8	6.8pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
8R2	8.2pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
100	10pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
120	12pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
150	15pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
180	18pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
220	22pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
270	27pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
330	33pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
390	39pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
470	47pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
560	56pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
680	68pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
820	82pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
101	100pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
121	120pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
151	150pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
181	180pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.60±0.20
221	220pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.60±0.20
271	270pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20
331	330pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20
391	390pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20
471	470pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20
561	560pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.60±0.20
681	680pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.60±0.20
821	820pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20
102	1000pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20
122	1200pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	1.60±0.20	1.60±0.20	1.60±0.20	
152	1500pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.60±0.20	1.60±0.20	1.60±0.20	
182	1800pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.60±0.20	1.60±0.20	1.60±0.20	
222	2200pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.60±0.20	1.60±0.20	1.60±0.20	
272	2700pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.60±0.20	1.60±0.20	1.60±0.20	
332	3300pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.60±0.20	1.60±0.20	1.60±0.20	
392	3900pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.60±0.20	1.60±0.20	1.60±0.20	
472	4700pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.60±0.20	1.60±0.20	1.60±0.20	
562	5600pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.60±0.20	1.60±0.20			
682	6800pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20	1.60±0.20			
822	8200pF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.60±0.20	1.60±0.20			
103	0.010uF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.60±0.20	1.60±0.20			

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.

VOLTAGE AND CAPACITANCE RANGE

COG (NPO) DIELECTRIC (1210)

Values that are typically available. (Thickness in mm).

SIZE (INCHES)		1210										
VDCW (MAX)		10V	16V	25V	50V	100V	200V	250V	500V	630V	1000V	
CAPACITANCE CODE ->	100	10pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
	120	12pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
	150	15pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
	180	18pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
	220	22pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
	270	27pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
	330	33pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
	390	39pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
	470	47pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
	560	56pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
	680	68pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
	820	82pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
	101	100pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10
	121	120pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10
	151	150pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10
	181	180pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10
	221	220pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20
	271	270pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20
	331	330pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20
	391	390pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20
	471	470pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20
	561	560pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20
	681	680pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20
	821	820pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20
	102	1000pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.60±0.20
	122	1200pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20
	152	1500pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20
	182	1800pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20
	222	2200pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20
	272	2700pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20
	332	3300pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20
	392	3900pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20
	472	4700pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	2.00±0.20
562	5600pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	2.00±0.20	
682	6800pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	2.00±0.20	
822	8200pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	2.00±0.20	
103	0.010µF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20	1.60±0.20	2.00±0.20	2.00±0.20	2.50±0.30	
123	0.012µF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.50±0.30	2.50±0.30	2.50±0.30	
153	0.015µF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.50±0.30	2.50±0.30	2.50±0.30	
183	0.018µF	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20						
223	0.022µF	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20						
273	0.027µF	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20						
333	0.033µF	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20						
393	0.039µF	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20						
473	0.047µF	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20						

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.

VOLTAGE AND CAPACITANCE RANGE

X7R DIELECTRIC (0201, 0402)

Values that are typically available. (Thickness in mm).

SIZE (INCHES)		0201				0402			
VDCW (MAX)		10V	16V	25V	50V	10V	16V	25V	50V
101	100pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
121	120pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
151	150pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
181	180pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
221	220pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
271	270pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
331	330pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
391	390pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
471	470pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
561	560pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
681	680pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
821	820pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
102	1000pF	0.30±0.03	0.30±0.03	0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
122	1200pF	0.30±0.03	0.30±0.03	0.30±0.03		0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
152	1500pF	0.30±0.03	0.30±0.03	0.30±0.03		0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
182	1800pF	0.30±0.03	0.30±0.03	0.30±0.03		0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
222	2200pF	0.30±0.03	0.30±0.03	0.30±0.03		0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
272	2700pF	0.30±0.03	0.30±0.03	0.30±0.03		0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
332	3300pF	0.30±0.03	0.30±0.03	0.30±0.03		0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
392	3900pF	0.30±0.03	0.30±0.03	0.30±0.03		0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
472	4700pF	0.30±0.03	0.30±0.03	0.30±0.03		0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
562	5600pF	0.30±0.03	0.30±0.03	0.30±0.03		0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
682	6800pF	0.30±0.03				0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
822	8200pF	0.30±0.03				0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
103	0.010μF	0.30±0.03				0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
123	0.012μF					0.50±0.05	0.50±0.05	0.50±0.05	
153	0.015μF					0.50±0.05	0.50±0.05	0.50±0.05	
183	0.018μF					0.50±0.05	0.50±0.05	0.50±0.05	
223	0.022μF					0.50±0.05	0.50±0.05	0.50±0.05	
273	0.027μF					0.50±0.05	0.50±0.05	0.50±0.05	
333	0.033μF					0.50±0.05	0.50±0.05	0.50±0.05	
393	0.039μF					0.50±0.05	0.50±0.05	0.50±0.05	
473	0.047μF					0.50±0.05	0.50±0.05	0.50±0.05	
563	0.056μF					0.50±0.05	0.50±0.05	0.50±0.05	
683	0.068μF					0.50±0.05	0.50±0.05	0.50±0.05	
823	0.082μF					0.50±0.05	0.50±0.05	0.50±0.05	
104	0.10μF					0.50±0.05	0.50±0.05	0.50±0.05	
124	0.12μF								
154	0.15μF								
184	0.18μF								
224	0.22μF								
334	0.33μF								

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.

VOLTAGE AND CAPACITANCE RANGE

X7R DIELECTRIC (1206)

Values that are typically available. (Thickness in mm).

SIZE (INCHES)		1206								
VDCW (MAX)		10V	16V	25V	50V	100V	200V	250V	500V	630V
101	100pF						1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
121	120pF						1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
151	150pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
181	180pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
221	220pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
271	270pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
331	330pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
391	390pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
471	470pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
561	560pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
681	680pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
821	820pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
102	1000pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
122	1200pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
152	1500pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
182	1800pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
222	2200pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
272	2700pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
332	3300pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
392	3900pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
472	4700pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
562	5600pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
682	6800pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
822	8200pF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
103	0.010µF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
123	0.012µF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10		
153	0.015µF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10		
183	0.018µF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10		
223	0.022µF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10	1.25±0.10		
273	0.027µF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
333	0.033µF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
393	0.039µF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
473	0.047µF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
563	0.056µF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
683	0.068µF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
823	0.082µF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10				
104	0.10µF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10				
124	0.12µF	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10				
154	0.15µF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20				
184	0.18µF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20				
224	0.22µF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20				
274	0.27µF	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10					
334	0.33µF	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10					
394	0.39µF	0.95±0.10	0.95±0.10	1.15±0.15	1.60±0.3/-0.1					
474	0.47µF	1.15±0.15	1.15±0.15	1.15±0.15	1.60±0.3/-0.1					
564	0.56µF	1.15±0.15	1.15±0.15	1.15±0.15	1.60±0.3/-0.1					
684	0.68µF	1.15±0.15	1.15±0.15	1.15±0.15	1.60±0.3/-0.1					
824	0.82µF	1.15±0.15	1.15±0.15	1.15±0.15	1.60±0.3/-0.1					
105	1µF	1.15±0.15	1.15±0.15	1.15±0.15	1.60±0.3/-0.1					
225	2.2µF				1.60±0.3/-0.1	1.60±0.3/-0.1				
475	4.7µF									
106	10µF									

VOLTAGE AND CAPACITANCE RANGE

X7R DIELECTRIC (1210)

Values that are typically available. (Thickness in mm).

SIZE (INCHES)		1210							
VDCW (MAX)		10V	16V	25V	50V	100V	250V	500V	1000V
101	100pF						1.25±0.10	1.25±0.10	1.25±0.10
121	120pF						1.25±0.10	1.25±0.10	1.25±0.10
151	150pF						1.25±0.10	1.25±0.10	1.25±0.10
181	180pF						1.25±0.10	1.25±0.10	1.25±0.10
221	220pF						1.25±0.10	1.25±0.10	1.25±0.10
271	270pF						1.25±0.10	1.25±0.10	1.25±0.10
331	330pF						1.25±0.10	1.25±0.10	1.25±0.10
391	390pF						1.25±0.10	1.25±0.10	1.25±0.10
471	470pF						1.25±0.10	1.25±0.10	1.25±0.10
561	560pF						1.25±0.10	1.25±0.10	1.25±0.10
681	680pF						0.95±0.10	1.25±0.10	1.25±0.10
821	820pF						0.95±0.10	1.25±0.10	1.25±0.10
102	1000pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10
122	1200pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10
152	1500pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10
182	1800pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10
222	2200pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10
272	2700pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10
332	3300pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10
392	3900pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.60±0.20
472	4700pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.60±0.20
562	5600pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.60±0.20
682	6800pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.60±0.20
822	8200pF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.60±0.20
103	0.010μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.60±0.20
123	0.012μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	
153	0.015μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	
183	0.018μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	
223	0.022μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10	
273	0.027μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10		
333	0.033μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10		
393	0.039μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10		
473	0.047μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10		
563	0.056μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10			
683	0.068μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10			
823	0.082μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10			
104	0.10μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10			
124	0.12μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10				
154	0.15μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10				
184	0.18μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10				
224	0.22μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10				
274	0.27μF	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10				
334	0.33μF	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10				
394	0.39μF	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10				
474	0.47μF	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10				
564	0.56μF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10				
684	0.68μF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10				
824	0.82μF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10				
105	1μF	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10				
155	1.5μF		2.00±0.20						
225	2.2μF		2.00±0.20		2.50±0.30	2.50±0.30			
475	4.7μF				2.50±0.30	2.50±0.30			
106	10μF				2.50±0.30				

RELIABILITY TEST CONDITIONS & REQUIREMENTS

ITEM	AEC-Q200 TEST CONDITION	REQUIREMENTS																																																								
1. Visual and Mechanical	* Visual Inspection * Measurement by precision calipers	* No remarkable defect. * Dimensions to conform to individual specification sheet.																																																								
2. Electrical Characterization - Capacitance	Q/D.F. (Dissipation Factor) Test Temp: Room Temperature. Class I: (NPO) Cap≤1000pF, 1.0±0.2Vrms, 1MHz±10% Cap>1000pF, 1.0±0.2Vrms, 1KHz±10% Class II: (X7R) Cap<10μF, 1.0±0.2Vrms, 1KHz±10% Cap≥10μF, 0.5±0.2Vrms, 120Hz±20%	* Capacitance within the specified tolerance. * Q/D.F. value: NPO: Cap≥30pF, Q≥1000; Cap<30pF, Q≥400+20C. X7R: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>RATED VOL.</th> <th>D.F.≤</th> <th colspan="2">EXCEPTION OF D.F.≤</th> </tr> </thead> <tbody> <tr> <td rowspan="3">≥100V</td> <td rowspan="3">≤2.5%</td> <td>≤3%</td> <td>1206≥0.47μF</td> </tr> <tr> <td>≤5%</td> <td>0603≥0.068μF; 0805>0.1μF; 1206≥1μF; 1210≥2.2μF</td> </tr> <tr> <td>≤10%</td> <td>0805>0.22μF; 1210≥3.3μF</td> </tr> <tr> <td rowspan="3">50V</td> <td rowspan="3">≤2.5%</td> <td>≤3%</td> <td>0201(50V);0603≥0.047μF; 0805≥0.18μF; 1206≥0.47μF</td> </tr> <tr> <td>≤5%</td> <td>0201≥0.01μF;1210≥3.3μF</td> </tr> <tr> <td>≤10%</td> <td>0402≥0.012μF; 0603>0.1μF; 0805≥0.47μF; 1206≥2.2μF; 1210≥10μF</td> </tr> <tr> <td>35V</td> <td>≤3.5%</td> <td>≤10%</td> <td>0603≥1μF; 0805≥2.2μF ;1206≥2.2μF; 1210≥10μF</td> </tr> <tr> <td rowspan="4">25V</td> <td rowspan="4">≤3.5%</td> <td>≤5%</td> <td>0201≥0.01μF; 0805≥1μF; 1210≥10μF</td> </tr> <tr> <td>≤7%</td> <td>0603≥0.33μF</td> </tr> <tr> <td>≤10%</td> <td>0201≥0.1μF; 0402≥0.056μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF</td> </tr> <tr> <td>≤12.5%</td> <td>0402≥0.47μF</td> </tr> <tr> <td rowspan="2">16V</td> <td rowspan="2">≤3.5%</td> <td>≤5%</td> <td>0201≥0.01μF; 0402≥0.033μF; 0603≥0.15μF; 0805≥0.68μF; 1206≥2.2μF; 1210≥4.7μF</td> </tr> <tr> <td>≤10%</td> <td>0201≥0.022μF; 0402≥0.15μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF</td> </tr> <tr> <td rowspan="2">10V</td> <td rowspan="2">≤5%</td> <td>≤10%</td> <td>0201≥0.012μF; 0402≥0.15μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥22μF</td> </tr> <tr> <td>≤15%</td> <td>0201≥0.1μF; 0402≥1μF</td> </tr> <tr> <td rowspan="2">6.3V</td> <td rowspan="2">≤10%</td> <td>≤15%</td> <td>0201≥0.1μF; 0402≥1μF; 0603≥10μF; 0805≥4.7μF; 1206≥47μF; 1210≥100μF</td> </tr> <tr> <td>≤20%</td> <td>0402≥2.2μF</td> </tr> <tr> <td>4V</td> <td>≤15%</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	RATED VOL.	D.F.≤	EXCEPTION OF D.F.≤		≥100V	≤2.5%	≤3%	1206≥0.47μF	≤5%	0603≥0.068μF; 0805>0.1μF; 1206≥1μF; 1210≥2.2μF	≤10%	0805>0.22μF; 1210≥3.3μF	50V	≤2.5%	≤3%	0201(50V);0603≥0.047μF; 0805≥0.18μF; 1206≥0.47μF	≤5%	0201≥0.01μF;1210≥3.3μF	≤10%	0402≥0.012μF; 0603>0.1μF; 0805≥0.47μF; 1206≥2.2μF; 1210≥10μF	35V	≤3.5%	≤10%	0603≥1μF; 0805≥2.2μF ;1206≥2.2μF; 1210≥10μF	25V	≤3.5%	≤5%	0201≥0.01μF; 0805≥1μF; 1210≥10μF	≤7%	0603≥0.33μF	≤10%	0201≥0.1μF; 0402≥0.056μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF	≤12.5%	0402≥0.47μF	16V	≤3.5%	≤5%	0201≥0.01μF; 0402≥0.033μF; 0603≥0.15μF; 0805≥0.68μF; 1206≥2.2μF; 1210≥4.7μF	≤10%	0201≥0.022μF; 0402≥0.15μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF	10V	≤5%	≤10%	0201≥0.012μF; 0402≥0.15μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥22μF	≤15%	0201≥0.1μF; 0402≥1μF	6.3V	≤10%	≤15%	0201≥0.1μF; 0402≥1μF; 0603≥10μF; 0805≥4.7μF; 1206≥47μF; 1210≥100μF	≤20%	0402≥2.2μF	4V	≤15%	-	-
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RELIABILITY TEST CONDITIONS & REQUIREMENTS

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3. Electrical Characterization-Dielectric Strength	<p>* To apply voltage:</p> <p>≤100V: ≥250% of rated voltage. 200V - 300V: ≥200% of rated voltage. 400V - 450V: ≥120% of rated voltage. 500V - 999V: ≥150% of rated voltage. 1000V - 3000V: ≥120% of rated voltage.</p> <p>*Duration: 1 to 5 sec. *Charge & discharge current less than 50mA. *Temperature Coefficient (with no electrical load) *Operation Temperature: -55-125°C at 25°C</p>	<p>* No evidence of damage or flash over during test.</p> <p>*Temperature Coefficient Capacitance Change: NPO: Within ±30ppm/°C X7R: Within ±15%</p>																																																																
4. High Temperature Exposure (Storage) MIL-STD-202 Method 108	<p>* Test temp: 150±3°C * Unpowered * Test time: 1000+24/-0 hrs. * Measurement to be made after keeping at room temp. for 24±2 hrs.</p>	<p>* No remarkable damage. * Cap change: NPO: within ±2.5% or ±0.25pF whichever is larger. X7R: within ±10%</p> <p>*Q/D.F. value: NPO: Cap≥30pF, Q≥1000; Cap<30pF, Q≥400+20C. X7R:</p> <table border="1"> <thead> <tr> <th>RATED VOLTAGE</th> <th>D.F. ≤</th> <th colspan="2">EXCEPTION OF D.F. ≤</th> </tr> </thead> <tbody> <tr> <td rowspan="3">≥100V</td> <td rowspan="3">≤3%</td> <td>≤6%</td> <td>1206≥0.47μF</td> </tr> <tr> <td>≤7.5%</td> <td>0603≥0.068μF; 0805>0.1μF; 1206≥1μF; 1210≥2.2μF</td> </tr> <tr> <td>≤20%</td> <td>0805>0.22μF; 1210≥3.3μF</td> </tr> <tr> <td rowspan="3">50V</td> <td rowspan="3">≤3%</td> <td>≤6%</td> <td>0201(50V): 0603≥0.047μF; 0805≥0.18μF; 1206≥0.47μF</td> </tr> <tr> <td>≤10%</td> <td>0201≥0.01μF; 1210≥3.3μF</td> </tr> <tr> <td>≤20%</td> <td>0402≥0.012μF; 0603≥0.1μF; 0805≥0.47μF; 1206≥2.2μF; 1210≥10μF</td> </tr> <tr> <td>35V</td> <td>≤5%</td> <td>≤20%</td> <td>0603≥1μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥10μF</td> </tr> <tr> <td rowspan="4">25V</td> <td rowspan="4">≤5%</td> <td>≤10%</td> <td>0201≥0.01μF; 0805≥1μF; 1210≥10μF</td> </tr> <tr> <td>≤14%</td> <td>0603≥0.33μF</td> </tr> <tr> <td>≤15%</td> <td>0201≥0.1μF; 0402≥0.056μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF</td> </tr> <tr> <td>≤20%</td> <td>0402≥0.47μF</td> </tr> <tr> <td rowspan="2">16V</td> <td rowspan="2">≤5%</td> <td>≤10%</td> <td>0603≥0.15μF; 0805≥0.68μF; 1206≥2.2μF; 1210≥4.7μF</td> </tr> <tr> <td>≤15%</td> <td>0201≥0.22μF; 0402≥0.33μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF</td> </tr> <tr> <td rowspan="2">10V</td> <td rowspan="2">≤7.5%</td> <td>≤15%</td> <td>0201≥0.012μF; 0402≥0.15μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥22μF</td> </tr> <tr> <td>≤20%</td> <td>0201≥0.1μF; 0402≥1μF</td> </tr> <tr> <td>6.3V</td> <td>≤15%</td> <td>≤30%</td> <td>0201≥0.1μF; 0402≥1μF; 0603≥10μF; 0805≥4.7μF; 1206≥47μF; 1210≥100μF</td> </tr> <tr> <td>4V</td> <td>≤20%</td> <td>---</td> <td>---</td> </tr> </tbody> </table> <p>* I.R.: ≥ 10GΩ or RxC≥500Ω-F whichever is smaller</p> <p>Class II (X7R)</p> <table border="1"> <thead> <tr> <th>RATED VOLTAGE</th> <th>INSULATION RESISTANCE</th> </tr> </thead> <tbody> <tr> <td>100V: All X7R; 1210≥3.3μF</td> <td rowspan="7">1GΩ or RxC ≥10Ω-F whichever is smaller</td> </tr> <tr> <td>50V: 0402≥0.01μF; 0603≥1μF; 0805≥1μF; 1206≥4.7μF; 1210≥4.7μF</td> </tr> <tr> <td>35V: 0603≥1μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥10μF</td> </tr> <tr> <td>25V: 0201≥0.1μF; 0402≥0.22μF; 0603≥2.2μF; 0805≥2.2μF; 1206≥10μF; 1210≥10μF</td> </tr> <tr> <td>16V: 0201≥0.1μF; 0402≥0.22μF; 0603≥1μF; 0805≥2.2μF; 1206≥10μF; 1210≥47μF</td> </tr> <tr> <td>10V: 0201≥47nF; 0402≥0.47μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥47μF</td> </tr> <tr> <td>6.3V: 4V; Size≥1812</td> </tr> </tbody> </table>	RATED VOLTAGE	D.F. ≤	EXCEPTION OF D.F. ≤		≥100V	≤3%	≤6%	1206≥0.47μF	≤7.5%	0603≥0.068μF; 0805>0.1μF; 1206≥1μF; 1210≥2.2μF	≤20%	0805>0.22μF; 1210≥3.3μF	50V	≤3%	≤6%	0201(50V): 0603≥0.047μF; 0805≥0.18μF; 1206≥0.47μF	≤10%	0201≥0.01μF; 1210≥3.3μF	≤20%	0402≥0.012μF; 0603≥0.1μF; 0805≥0.47μF; 1206≥2.2μF; 1210≥10μF	35V	≤5%	≤20%	0603≥1μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥10μF	25V	≤5%	≤10%	0201≥0.01μF; 0805≥1μF; 1210≥10μF	≤14%	0603≥0.33μF	≤15%	0201≥0.1μF; 0402≥0.056μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF	≤20%	0402≥0.47μF	16V	≤5%	≤10%	0603≥0.15μF; 0805≥0.68μF; 1206≥2.2μF; 1210≥4.7μF	≤15%	0201≥0.22μF; 0402≥0.33μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF	10V	≤7.5%	≤15%	0201≥0.012μF; 0402≥0.15μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥22μF	≤20%	0201≥0.1μF; 0402≥1μF	6.3V	≤15%	≤30%	0201≥0.1μF; 0402≥1μF; 0603≥10μF; 0805≥4.7μF; 1206≥47μF; 1210≥100μF	4V	≤20%	---	---	RATED VOLTAGE	INSULATION RESISTANCE	100V: All X7R; 1210≥3.3μF	1GΩ or RxC ≥10Ω-F whichever is smaller	50V: 0402≥0.01μF; 0603≥1μF; 0805≥1μF; 1206≥4.7μF; 1210≥4.7μF	35V: 0603≥1μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥10μF	25V: 0201≥0.1μF; 0402≥0.22μF; 0603≥2.2μF; 0805≥2.2μF; 1206≥10μF; 1210≥10μF	16V: 0201≥0.1μF; 0402≥0.22μF; 0603≥1μF; 0805≥2.2μF; 1206≥10μF; 1210≥47μF	10V: 0201≥47nF; 0402≥0.47μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥47μF	6.3V: 4V; Size≥1812
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RELIABILITY TEST CONDITIONS & REQUIREMENTS

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RELIABILITY TEST CONDITIONS & REQUIREMENTS

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RELIABILITY TEST CONDITIONS & REQUIREMENTS

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8. Operational Life MIL-STD-202 Method 108	* Test temp.: 125±3°C * To apply voltage: (1) 10V≤Ur≤250V: 200% of rated voltage. (2) 150% of rated voltage: a) 500V b) 0603/X7R/50V/Cap.≥0.1μF c) 0805/X7R/50V/Cap.≥0.68μF d) 1206/X7R/100V/Cap.≥1.0μF e) 1210/X7R/50V&100V/Cap.≥2.2μF (3) 630V≤Ur≤1000V: 120% of rated voltage. * Test time: 1000+24/-0 hrs. * Before initial measurement (X7R only): To apply test voltage for 1hr at 125°C. Remove and let set for 24±2 hrs at room temp. * Measurement to be made after keeping at room temp. for 24±2 hrs.	* No remarkable damage. * Cap change: NPO: within ±3.0% or ±0.30pF whichever is larger. X7R: within ±12.5% *Q/D.F. value: NPO: More than 30pF Q≥350; 10pF≤Cap<30pF, Q≥275+2.5C. Less than 10pF Q≥200+10C X7R: <table border="1"> <thead> <tr> <th>RATED VOLTAGE</th> <th>D.F. ≤</th> <th colspan="2">EXCEPTION OF D.F. ≤</th> </tr> </thead> <tbody> <tr> <td rowspan="3">≥100V</td> <td rowspan="3">≤3%</td> <td>≤6%</td> <td>1206≥0.47μF</td> </tr> <tr> <td>≤7.5%</td> <td>0603≥0.068μF; 0805>0.1μF; 1206≥1μF; 1210≥2.2μF</td> </tr> <tr> <td>≤20%</td> <td>0805>0.22μF; 1210≥3.3μF</td> </tr> <tr> <td rowspan="3">50V</td> <td rowspan="3">≤3%</td> <td>≤6%</td> <td>0201(50V): 0603≥0.047μF; 0805≥0.18μF; 1206≥0.47μF</td> </tr> <tr> <td>≤10%</td> <td>0201≥0.01μF; 1210≥3.3μF</td> </tr> <tr> <td>≤20%</td> <td>0402≥0.012μF; 0603≥0.1μF; 0805≥0.47μF; 1206≥2.2μF; 1210≥10μF</td> </tr> <tr> <td>35V</td> <td>≤5%</td> <td>≤20%</td> <td>0603≥1μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥10μF</td> </tr> <tr> <td rowspan="4">25V</td> <td rowspan="4">≤5%</td> <td>≤10%</td> <td>0201≥0.01μF; 0805≥1μF; 1210≥10μF</td> </tr> <tr> <td>≤14%</td> <td>0603≥0.33μF</td> </tr> <tr> <td>≤15%</td> <td>0201≥0.1μF; 0402≥0.056μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF</td> </tr> <tr> <td>≤20%</td> <td>0402≥0.47μF</td> </tr> <tr> <td rowspan="2">16V</td> <td rowspan="2">≤5%</td> <td>≤10%</td> <td>0603≥0.15μF; 0805≥0.68μF; 1206≥2.2μF; 1210≥4.7μF</td> </tr> <tr> <td>≤15%</td> <td>0201≥0.022μF; 0402≥0.033μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF</td> </tr> <tr> <td rowspan="2">10V</td> <td rowspan="2">≤7.5%</td> <td>≤15%</td> <td>0201≥0.012μF; 0402≥0.15μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥22μF</td> </tr> <tr> <td>≤20%</td> <td>0201≥0.1μF; 0402≥1μF</td> </tr> <tr> <td>6.3V</td> <td>≤15%</td> <td>≤30%</td> <td>0201≥0.1μF; 0402≥1μF; 0603≥10μF; 0805≥4.7μF; 1206≥47μF; 1210≥100μF</td> </tr> <tr> <td>4V</td> <td>≤20%</td> <td>---</td> <td>---</td> </tr> </tbody> </table> <p>* I.R.: ≥ 1GΩ or RxC≥50Ω-F whichever is smaller Class II (X7R)</p> <table border="1"> <thead> <tr> <th>RATED VOLTAGE</th> <th>INSULATION RESISTANCE</th> </tr> </thead> <tbody> <tr> <td>100V: All X7R; 1210≥3.3μF</td> <td rowspan="7">1GΩ or RxC≥10Ω-F whichever is smaller</td> </tr> <tr> <td>50V: 0402≥0.01μF; 0603≥1μF; 0805≥1μF; 1206≥4.7μF; 1210≥4.7μF</td> </tr> <tr> <td>35V: 0603≥1μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥10μF</td> </tr> <tr> <td>25V: 0201≥0.1μF; 0402≥0.22μF; 0603≥2.2μF; 0805≥2.2μF; 1206≥10μF; 1210≥10μF</td> </tr> <tr> <td>16V: 0201≥0.1μF; 0402≥0.22μF; 0603≥1μF; 0805≥2.2μF; 1206≥10μF; 1210≥47μF</td> </tr> <tr> <td>10V: 0201≥47nF; 0402≥0.47μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥47μF</td> </tr> <tr> <td>6.3V: 4V; Size≥1812</td> </tr> </tbody> </table>	RATED VOLTAGE	D.F. ≤	EXCEPTION OF D.F. ≤		≥100V	≤3%	≤6%	1206≥0.47μF	≤7.5%	0603≥0.068μF; 0805>0.1μF; 1206≥1μF; 1210≥2.2μF	≤20%	0805>0.22μF; 1210≥3.3μF	50V	≤3%	≤6%	0201(50V): 0603≥0.047μF; 0805≥0.18μF; 1206≥0.47μF	≤10%	0201≥0.01μF; 1210≥3.3μF	≤20%	0402≥0.012μF; 0603≥0.1μF; 0805≥0.47μF; 1206≥2.2μF; 1210≥10μF	35V	≤5%	≤20%	0603≥1μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥10μF	25V	≤5%	≤10%	0201≥0.01μF; 0805≥1μF; 1210≥10μF	≤14%	0603≥0.33μF	≤15%	0201≥0.1μF; 0402≥0.056μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF	≤20%	0402≥0.47μF	16V	≤5%	≤10%	0603≥0.15μF; 0805≥0.68μF; 1206≥2.2μF; 1210≥4.7μF	≤15%	0201≥0.022μF; 0402≥0.033μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF	10V	≤7.5%	≤15%	0201≥0.012μF; 0402≥0.15μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥22μF	≤20%	0201≥0.1μF; 0402≥1μF	6.3V	≤15%	≤30%	0201≥0.1μF; 0402≥1μF; 0603≥10μF; 0805≥4.7μF; 1206≥47μF; 1210≥100μF	4V	≤20%	---	---	RATED VOLTAGE	INSULATION RESISTANCE	100V: All X7R; 1210≥3.3μF	1GΩ or RxC≥10Ω-F whichever is smaller	50V: 0402≥0.01μF; 0603≥1μF; 0805≥1μF; 1206≥4.7μF; 1210≥4.7μF	35V: 0603≥1μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥10μF	25V: 0201≥0.1μF; 0402≥0.22μF; 0603≥2.2μF; 0805≥2.2μF; 1206≥10μF; 1210≥10μF	16V: 0201≥0.1μF; 0402≥0.22μF; 0603≥1μF; 0805≥2.2μF; 1206≥10μF; 1210≥47μF	10V: 0201≥47nF; 0402≥0.47μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥47μF	6.3V: 4V; Size≥1812
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9. External Visual MIL-STD-883 Method 2009	* Visual Inspection	* No remarkable defect.																																																																
10. Physical Dimension JESD22 Method JB-100	* Using by calipers	* Within the specified dimensions																																																																

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11. Resistance to Solvents MIL-STD-202 Method 215	* Temperature.: 25±5°C * Time: 3+0.5/-0 min. * Solvent: Iso-propyl alcohol.	* No remarkable damage. * Cap.: within the specified tolerance. * Q/D.F. value: NPO: Cap≥30pF, Q≥1000; Cap<30pF, Q≥400+20C. X7R:																																																								
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RELIABILITY TEST CONDITIONS & REQUIREMENTS

ITEM	AEC-Q200 TEST CONDITION	REQUIREMENTS																																																								
12. Mechanical Shock MIL-STD-202 Method 213	* Peak value: 1500g's * Wave: 1/2 sine. * Velocity: 15.4 ft/sec * Three shocks in each direction should be applied along 3 mutually perpendicular axis of the test specimen (18 shocks)	* No remarkable damage. * Cap.: within the specified tolerance. * Q/D.F. value: NPO: Cap \geq 30pF, Q \geq 1000; Cap $<$ 30pF, Q \geq 400+20C. X7R:																																																								
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13. Vibration MIL-STD-202 Method 204	* Vibration frequency: 10-2000Hz/min. (5g's for 20min) * Total amplitude: 1.5mm. * 12 cycles each of 3 orientations (36 times)	* No remarkable damage. * Cap.: within the specified tolerance. * Q/D.F. value: NPO: Cap \geq 30pF, Q \geq 1000; Cap $<$ 30pF, Q \geq 400+20C. X7R:																																																								
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RELIABILITY TEST CONDITIONS & REQUIREMENTS

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RELIABILITY TEST CONDITIONS & REQUIREMENTS

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16. Solderability J-STD-002 JESD22-B102E	* Condition A Un-mounted chips 4hrs/155°C* dry then completely immersed for 5±.5 sec in solder bath at 235±5°C. * Condition B Un-mounted chips steam 8hrs then completely immersed for 10±1 sec in solder bath at 215±5/-0°C. * Condition C Un-mounted chips steam 8hrs then completely immersed for 10±1 sec in solder bath at 260±0/-5°C.	* All terminations shall exhibit a continuous solder coating free from defects from a minimum of 95% of the critical surface area of any individual termination.																																																							

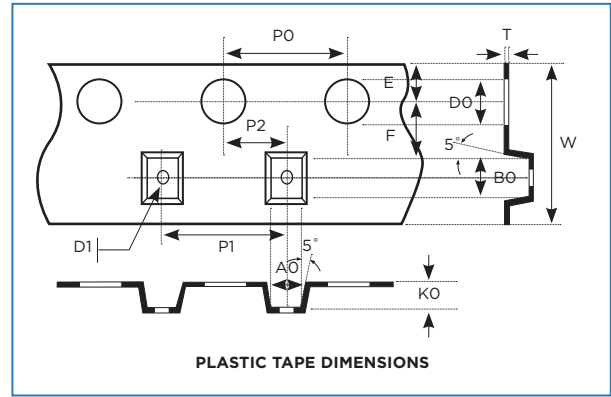
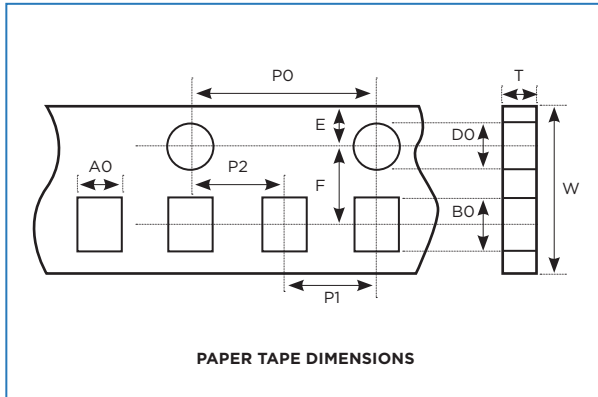
RELIABILITY TEST CONDITIONS & REQUIREMENTS

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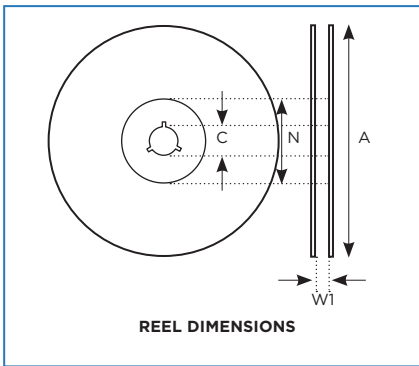
RELIABILITY TEST CONDITIONS & REQUIREMENTS

ITEM	AEC-Q200 TEST CONDITION	REQUIREMENTS																																																								
18. Terminal Strength AEC-Q200-006	* Pressurizing force: 2N (0201 & 0402), 10N(0603), 18N(≥0805). * Test time: 60±1 sec.	* No remarkable damage or removal of the terminations. * Capacitance within the specified tolerance. * Q/D.F. value: NPO: Cap≥30pF, Q≥1000; Cap<30pF, Q≥400+20C. X7R: <table border="1"> <thead> <tr> <th>RATED VOLTAGE</th> <th>D.F. ≤</th> <th colspan="2">EXCEPTION OF D.F. ≤</th> </tr> </thead> <tbody> <tr> <td rowspan="3">≥100V</td> <td rowspan="3">≤2.5%</td> <td>≤3%</td> <td>1206≥0.47μF</td> </tr> <tr> <td>≤5%</td> <td>0603≥0.068μF; 0805>0.1μF; 1206≥1μF; 1210≥2.2μF</td> </tr> <tr> <td>≤10%</td> <td>0805>0.22μF; 1210≥3.3μF</td> </tr> <tr> <td rowspan="3">50V</td> <td rowspan="3">≤2.5%</td> <td>≤3%</td> <td>0201(50V): 0603≥0.047μF; 0805≥0.18μF; 1206≥0.47μF</td> </tr> <tr> <td>≤5%</td> <td>0201≥0.01μF; 1210≥3.3μF</td> </tr> <tr> <td>≤10%</td> <td>0402≥0.012μF; 0603≥0.1μF; 0805≥0.47μF; 1206≥2.2μF; 1210≥10μF</td> </tr> <tr> <td>35V</td> <td>≤3.5%</td> <td>≤10%</td> <td>0603≥1μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥10μF</td> </tr> <tr> <td rowspan="4">25V</td> <td rowspan="4">≤3.5%</td> <td>≤5%</td> <td>0201≥0.01μF; 0805≥1μF; 1210≥10μF</td> </tr> <tr> <td>≤7%</td> <td>0603≥0.33μF</td> </tr> <tr> <td>≤10%</td> <td>0201≥0.1μF; 0402≥0.056μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF</td> </tr> <tr> <td>≤12.5%</td> <td>0402≥0.47μF</td> </tr> <tr> <td rowspan="2">16V</td> <td rowspan="2">≤3.5%</td> <td>≤5%</td> <td>0201≥0.01μF; 0402≥0.033μF; 0603≥0.15μF; 0805≥0.68μF; 1206≥2.2μF; 1210≥4.7μF</td> </tr> <tr> <td>≤10%</td> <td>0201≥0.022μF; 0402≥0.15μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF</td> </tr> <tr> <td rowspan="2">10V</td> <td rowspan="2">≤5%</td> <td>≤10%</td> <td>0201≥0.012μF; 0402≥0.15μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥22μF</td> </tr> <tr> <td>≤15%</td> <td>0201≥0.1μF; 0402≥1μF</td> </tr> <tr> <td rowspan="2">6.3V</td> <td rowspan="2">≤10%</td> <td>≤15%</td> <td>0201≥0.1μF; 0402≥1μF; 0603≥10μF; 0805≥4.7μF; 1206≥47μF; 1210≥100μF</td> </tr> <tr> <td>≤20%</td> <td>0402≥2.2μF</td> </tr> <tr> <td>4V</td> <td>≤15%</td> <td>---</td> <td>---</td> </tr> </tbody> </table>	RATED VOLTAGE	D.F. ≤	EXCEPTION OF D.F. ≤		≥100V	≤2.5%	≤3%	1206≥0.47μF	≤5%	0603≥0.068μF; 0805>0.1μF; 1206≥1μF; 1210≥2.2μF	≤10%	0805>0.22μF; 1210≥3.3μF	50V	≤2.5%	≤3%	0201(50V): 0603≥0.047μF; 0805≥0.18μF; 1206≥0.47μF	≤5%	0201≥0.01μF; 1210≥3.3μF	≤10%	0402≥0.012μF; 0603≥0.1μF; 0805≥0.47μF; 1206≥2.2μF; 1210≥10μF	35V	≤3.5%	≤10%	0603≥1μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥10μF	25V	≤3.5%	≤5%	0201≥0.01μF; 0805≥1μF; 1210≥10μF	≤7%	0603≥0.33μF	≤10%	0201≥0.1μF; 0402≥0.056μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF	≤12.5%	0402≥0.47μF	16V	≤3.5%	≤5%	0201≥0.01μF; 0402≥0.033μF; 0603≥0.15μF; 0805≥0.68μF; 1206≥2.2μF; 1210≥4.7μF	≤10%	0201≥0.022μF; 0402≥0.15μF; 0603≥0.47μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF	10V	≤5%	≤10%	0201≥0.012μF; 0402≥0.15μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥22μF	≤15%	0201≥0.1μF; 0402≥1μF	6.3V	≤10%	≤15%	0201≥0.1μF; 0402≥1μF; 0603≥10μF; 0805≥4.7μF; 1206≥47μF; 1210≥100μF	≤20%	0402≥2.2μF	4V	≤15%	---	---
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		≤20%	0402≥2.2μF																																																							
4V	≤15%	---	---																																																							
19. Board Flex AEC-Q200-005	* The middle part of substrate shall be pressurized by means of the pressurizing rod at a rate of about 1 mm per second until the deflection becomes 3mm (2mm for X7R) and then the pressure shall be maintained for 60±1 sec. * Measurement to be made after keeping at room temp. for 24±2 hrs.	* No remarkable damage * Cap change: NPO: within ±5% or ±0.5pF whichever is larger. X7R: within ±2.5% (This capacitance change means the change of capacitance under specified flexure of substrate from the capacitance measured before the test.)																																																								
20. Beam Load Test AEC-Q200-003	* Break strength test * Beam speed: 2.5±.25mm/sec	* The chip endures following force (1) Chip length ≤2.5mm: Thickness>0.5mm (20N), ≤0.5mm (8N) (2) Chip length ≥3.2mm: Thickness≥1.25mm (54.5N), <1.25mm (15N)																																																								
21. Destructive Physical Analysis EIA-469	* Per EIA-469	* No defects or abnormalities.																																																								

TAPE AND REEL SPECIFICATIONS



SIZE	0201	0402	0603	0805			1206			1210	
Thickness (mm)	0.30±0.03	0.50±0.05	0.80±0.07/ 0.80±0.15/-0.1	0.60±0.10	0.80±0.10	1.25±0.10/ 1.25±0.20	0.80±0.10	0.95±0.10/ 1.15±0.15/ 1.25±0.10	1.60±0.20/ 1.60±0.30/-0.1	0.95±0.10/ 1.25±0.10/ 1.60±0.20/ 2.00±0.20	2.50±0.30
A0	0.40±0.10	0.70±0.20	1.05±0.30	1.50±0.20	1.50±0.20	< 1.80	1.90±0.50	< 2.00	< 2.30	< 3.05	< 3.20
B0	0.70±0.10	1.20±0.20	1.80±0.30	2.30±0.20	2.30±0.20	< 2.70	3.50±0.50	< 3.70	< 4.00	< 3.80	< 4.00
T	≤0.55	≤0.80	≤1.20	≤1.15	≤1.20	0.23±0.1	≤1.20	0.23±0.1	0.23±0.1	0.23±0.1	0.23±0.1
K0	-	-	-	-	-	< 2.50	-	< 2.50	< 2.50	< 2.50	< 3.20
W	8.00±0.30	8.00±0.30	8.00±0.30	8.00±0.30	8.00±0.30	8.00±0.30	8.00±0.30	8.00±0.30	8.00±0.30	8.00±0.30	8.00±0.30
P0	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10
P1	2.00±0.05	2.00±0.05	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10
P2	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05
D0	1.50+0.1/-0	1.50+0.1/-0	1.50+0.1/-0	1.50+0.1/-0	1.50+0.1/-0	1.50+0.1/-0	1.50+0.1/-0	1.50+0.1/-0	1.50+0.1/-0	1.50+0.1/-0	1.50+0.1/-0
D1	-	-	-	-	-	1.00±0.10	-	1.00±0.10	1.00±0.10	1.00±0.10	1.00±0.10
E	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10
F	3.50±0.05	3.50±0.05	3.50±0.05	3.50±0.05	3.50±0.05	3.50±0.05	3.50±0.05	3.50±0.05	3.50±0.05	3.50±0.05	3.50±0.05



SIZE	0201, 0402, 0603, 0805, 1206, 1210	
Reel Size	7"	13"
C	13.0±0.5	13.0±0.5
W1	10.0±1.5	10.0±1.5
A	178.0±2.0	330.0±2.0
N	60.0+1.0/-0	50 min

SIZE	THICKNESS	PAPER TAPE		PLASTIC TAPE	
		7" REEL	13" REEL	7" REEL	13" REEL
0201	0.30±0.03	15K	70K	-	-
0402	0.50±0.05	10K	50K	-	-
0603	0.80±0.07	4K	15K	-	-
	0.80±0.15/-0.1	4K	15K	-	-
0805	0.60±0.10	4K	15K	-	-
	0.80±0.10	4K	15K	-	-
	1.25±0.10	-	-	3K	10K
1206	1.25±0.20	-	-	3K	10K
	0.80±0.10	4K	15K	-	-
	0.95±0.10	-	-	3K	10K
	1.15±0.15	-	-	3K	10K
	1.25±0.10	-	-	3K	10K
1210	1.60±0.20	-	-	2K	10K
	1.60±0.30/-0.1	-	-	2K	9K
	0.95±0.10	-	-	3K	10K
	1.25±0.10	-	-	3K	10K
	1.60±0.20	-	-	2K	8K
	2.00±0.20	-	-	1K	6K
2.50±0.30	-	-	1K	6K	