THE DATASHEET OF

C0402X7R160-104KNP-CT

FEATURES:

- Capacitance range: 0.1pF to 220uF
- Voltage range: 4V to 100V
- Terminations: 100% matte Tin (Sn), Palladium Silver (Pd-Ag), Gold (Au) and Lead (Pb)
- Very low ESR in X7R/X7S/X6S/X5R (<10mΩ typical)
- Ceramic monolithic structure provides excellent reliability

RoHS Compliant | REACH Compliant | HF Halogen FREE | Conflict Minerals FREE 3TG

PART NUMBER STRUCTURE

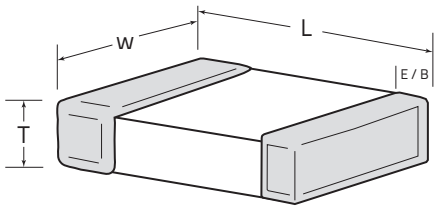
C	0805	C0G	500	-	101	J	N	P	☐☐
Series	**Size** 01005 0201 0402 0603 0805 1206 1210 1812 2220 2225	**Temperature Characteristic (Dielectric)** C0G X7R X7S X6S X5R Y5V Z5U	**Rated Voltage** 1st two digits are significant followed by number of zeroes. 4R0 = 4.0 VDCW 6R3 = 6.3 VDCW 100 = 10 VDCW 160 = 16 VDCW 250 = 25 VDCW 500 = 50 VDCW 630 = 63 VDCW 101 = 100 VDCW		**Capacitance** (picofarads) 1st two digits are significant, followed by number of zeroes. e.g: 101 = 100pF R denotes decimal 6R8 = 6.8pF	**Tolerance** * B = ± 0.1pF * C = ± 0.25pF * D = ± 0.5pF F = ± 1% G = ± 2% J = ± 5% K = ± 10% M = ± 20% N = ± 30% Z = +80 - 20% * For values below 10pF only.	**Termination** N = 100% matte Tin (Sn) over Nickel * P = Palladium Silver * G = Gold over Nickel Pb = 90% Tin (Sn) /10% Lead (Pb) * Pd/Ag & Gold terminations have limited values & sizes available.	**Packaging** E = Embossed Tape (7" Reel) P = Paper Tape (7" Reel) R = Paper Tape (13" Reel) U = Embossed Tape (13" Reel)	**Optional Thickness Identifier** Leave blank for standard thickness. Designate "-" for Min. "*" for Max. followed by Thickness Code **e.g:** - E (min. thickness of .026") * E (max. thickness of .026")

Example P/N: C0805C0G500-101JNP

Optional Thickness Identifier Codes:

CODE:	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	6
DIMENSION:	.015	.020	.026	.030	.035	.040	.045	.050	.055	.060	.065	.070	.075	.080	.085	.090	.095	.100	.105	.110	.023

DIMENSIONS

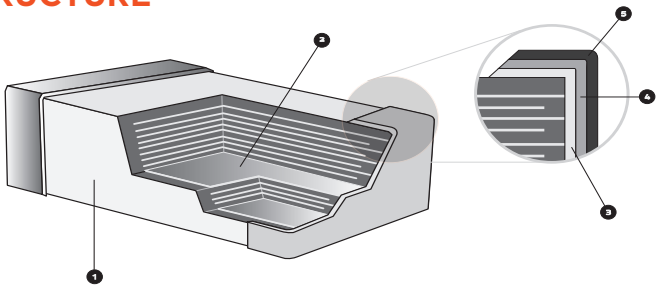


Unit: inches (mm)

SIZE	L	W	T	MIN. E/B
01005	0.016 ± 0.0008 (0.4 ± 0.02)	0.008 ± 0.0008 (0.2 ± 0.02)	See Specific Value	0.002 (0.05)
0201	0.024 ± 0.002 (0.6 ± 0.05)	0.012 ± 0.002 (0.3 ± 0.05)	See Specific Value	0.002 (0.05)
0402*	0.040 ± 0.002 (1.0 ± 0.05)	0.020 ± 0.002 (0.5 ± 0.05)	See Specific Value	0.004 (0.10)
0603	0.063 ± 0.006 (1.6 ± 0.15)	0.031 ± 0.0046 (0.8 ± 0.15)	See Specific Value	0.008 (0.20)
0805	0.08 ± 0.008 (2.0 ± 0.20)	0.050 ± 0.008 (1.25 ± 0.20)	See Specific Value	0.010 (0.25)
1206	0.126 ± 0.008 (3.2 ± 0.20)	0.063 ± 0.008 (1.6 ± 0.20)	See Specific Value	0.010 (0.25)
1210	0.126 ± 0.157 (3.2 ± 0.40)	0.098 ± 0.0118 (2.50 ± 0.30)	See Specific Value	0.010 (0.25)
1812	0.177 ± 0.012 (4.495 ± 0.30)	0.126 ± 0.012 (3.20 ± 0.30)	See Specific Value	0.010 (0.25)
2220	0.225 ± 0.016 (5.715 ± 0.41)	0.200 ± 0.006 (5.08 ± 0.41)	See Specific Value	0.010 (0.25)

* 0402 size in the X6S/X7S dielectric will have a dimensional tolerance of ±0.20mm

STRUCTURE

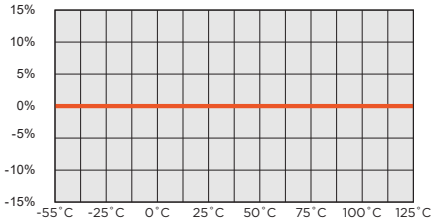


1	Ceramic Body (dielectric)	4	Nickel Plating
2	Inner Electrode	5	Outer Termination
3	Inner Termination		

ELECTRICAL SPECIFICATIONS

C0G(NP0)

Typical Capacitance Change vs. Temperature

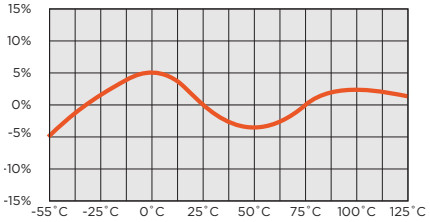


Operating Temperature Range:
-55°C to +125°C
Temperature Coefficient:
0 ±30PPM/°C
Temperature Voltage Coefficient:
0 ±30PPM/°C
Insulation Resistance:
>1000 Ω-F or 10 GΩ, for values ≤ 0.047uF (whichever is less at 25°C, WDCV).
For Capacitance values > 0.047uF, the 500 Ω-F rule applies. (The IR at 125°C is 10% of the value at 25°C)

Ageing:
None
Withstanding Voltage:
>2.5 times VDCW
Capacitance Tolerance:
B,C,D,F,G,J,K
Dissipation Factor:
0.1% max

X7R

Typical Capacitance Change vs. Temperature

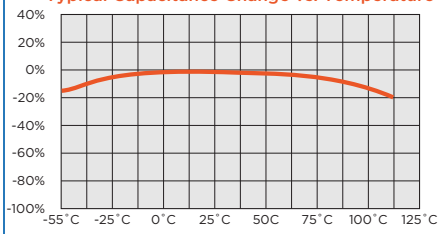


Operating Temperature Range:
-55°C to +125°C
Temperature Coefficient:
0 ±15%Δ°C MAX.
Temperature Voltage Coefficient:
X7R not applicable
Insulation Resistance:
>100 Ω-F or 10 GΩ, whichever is less at 25°C, VDCW. (The IR at 125°C is 10% of the value at 25°C)
Ageing:
2.5% per decade hour, typical
Withstanding Voltage:
>2.5 times VDCW
Capacitance Tolerance:
J,K,M

RATED VOLTAGE	D.F.	EXCEPTION OF D.F.	
≥50V	≤2.5%	≤3%	0201 (50V); 0603≥0.047uF 0805≥0.22uF; 1206≥0.47uF
		≤5%	0603≥1uF; 0805≥1uF; 1206≥4.7uF; 1210≥4.7uF
25V	≤2.5%	≤5%	0201≥0.01uF; 0805≥1uF; 1210≥4.7uF
		≤10%	0402≥0.10uF; 0603≥0.33uF; 0805≥2.2uF 1206≥4.7uF; 1210≥22uF
16V	≤3.5%	≤5%	0201≥0.01uF; 0402≥0.033uF; 0805≥0.68uF; 1206≥2.2uF; 1210≥4.7uF
		≤10%	0402≥0.47uF; 0603≥0.68uF; 0805≥2.2uF; 1206≥4.7uF; 1210≥22uF
10V	≤5%	≤10%	0402≥0.33uF; 0603≥0.33uF; 0805≥2.2uF; 1206≥2.2uF; 1210≥22uF
6.3V	≤10%		

X7S

Typical Capacitance Change vs. Temperature



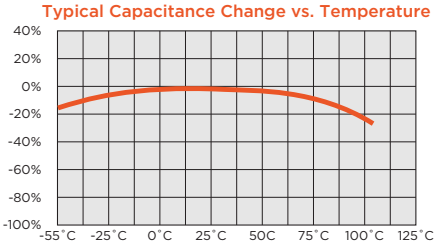
Operating Temperature Range:
-55°C to +125°C
Temperature Coefficient:
0 ±22%Δ°C MAX.
Insulation Resistance:
>1000 Ω-F or 100 GΩ, whichever is less at 25°C, VDCW. (The IR at 125°C is 10% of the value at 25°C)
Ageing:
2.5% per decade hour, typical
Withstanding Voltage:
>2.5 times VDCW
Capacitance Tolerance:
K,M

RATED VOLTAGE	D.F.	EXCEPTION OF D.F.	
≥50V	≤2.5%	≤3%	0201 (50V); 0603≥0.047uF 0805≥0.22uF; 1206≥0.47uF
		≤5%	0603≥1uF; 0805≥1uF; 1206≥4.7uF; 1210≥4.7uF
25V	≤2.5%	≤5%	0201≥0.01uF; 0805≥1uF; 1210≥4.7uF
		≤10%	0402≥0.10uF; 0603≥0.33uF; 0805≥2.2uF 1206≥4.7uF; 1210≥22uF
16V	≤3.5%	≤5%	0201≥0.01uF; 0402≥0.033uF; 0805≥0.68uF; 1206≥2.2uF; 1210≥4.7uF
		≤10%	0402≥0.47uF; 0603≥0.68uF; 0805≥2.2uF; 1206≥4.7uF; 1210≥22uF
≤10V	≤5%	≤10%	0402≥0.33uF; 0603≥0.33uF; 0805≥2.2uF; 1206≥2.2uF; 1210≥22uF
6.3V	≤10%		

ELECTRICAL SPECIFICATIONS

X6S

Typical Capacitance Change vs. Temperature

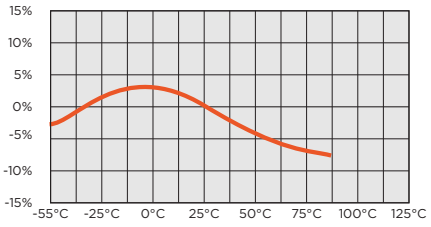


Operating Temperature Range:
-55°C to +105°C
Temperature Coefficient:
0 ±22%Δ°C MAX.
Insulation Resistance:
100,000 MΩ min., or 1000 MΩ (@ +25˚C, RVDC) per uF min. or 100GW, whichever is less
Ageing:
2.5% per decade hour, typical
Withstanding Voltage:
>2.5 times VDCW
Capacitance Tolerance:
K,M

RATED VOLTAGE	D.F.	EXCEPTION OF D.F.	
≥50V	≤2.5%	≤3%	0201 (50V); 0603≥0.047uF 0805≥0.22uF; 1206≥0.47uF
		≤5%	0603≥1uF; 0805≥1uF; 1206≥4.7uF; 1210≥4.7uF
25V	≤2.5%	≤5%	0201≥0.01uF; 0805≥1uF; 1210≥4.7uF
		≤10%	0402≥0.10uF; 0603≥0.33uF; 0805≥2.2uF 1206≥4.7uF; 1210≥22uF
16V	≤3.5%	≤5%	0201≥0.01uF; 0402≥0.033uF; 0805≥0.68uF; 1206≥2.2uF; 1210≥4.7uF
		≤10%	0402≥0.47uF; 0603≥0.68uF; 0805≥2.2uF; 1206≥4.7uF; 1210≥22uF
≤10V	≤5%	≤10%	0402≥0.33uF; 0603≥0.33uF; 0805≥2.2uF; 1206≥2.2uF; 1210≥22uF
4V/6.3V	≤10%		

X5R

Typical Capacitance Change vs. Temperature

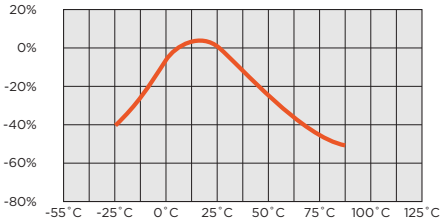


Operating Temperature Range:
-55°C to +85°C
Temperature Coefficient:
0 ±15%Δ°C MAX.
Insulation Resistance:
>100 Ω-F or 10 GΩ, whichever is less at 25°C, VDCW. (The IR at 125°C is 10% of the value at 25°C)
Ageing:
2.5% per decade hour, typical
Withstanding Voltage:
>2.5 times VDCW
Capacitance Tolerance:
K,M

RATED VOLTAGE	D.F.	EXCEPTION OF D.F.	
≥50V	≤2.5%	≤3%	0201 (50V); 0603≥0.047uF 0805≥0.22uF; 1206≥0.47uF
		≤5%	0603≥1uF; 0805≥1uF; 1206≥4.7uF; 1210≥4.7uF
25V	≤2.5%	≤5%	0201≥0.01uF; 0805≥1uF; 1210≥4.7uF
		≤10%	0402≥0.10uF; 0603≥0.33uF; 0805≥2.2uF 1206≥4.7uF; 1210≥22uF
16V	≤3.5%	≤5%	0201≥0.01uF; 0402≥0.033uF; 0805≥0.68uF; 1206≥2.2uF; 1210≥4.7uF
		≤10%	0402≥0.47uF; 0603≥0.68uF; 0805≥2.2uF; 1206≥4.7uF; 1210≥22uF
≤10V	≤5%	≤10%	0402≥0.33uF; 0603≥0.33uF; 0805≥2.2uF; 1206≥2.2uF; 1210≥22uF
6.3V	≤10%		

Z5U

Typical Capacitance Change vs. Temperature

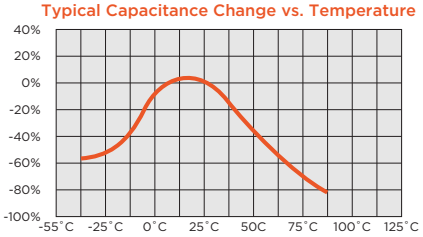


Operating Temperature Range:
+10°C to +85°C
Temperature Coefficient:
+22% - 56%Δ°C MAX.
Insulation Resistance:
>100 Ω-F or 10 GΩ, whichever is less at 25°C, WDCV. (The IR at 125°C is 10% of the value at 25°C)
Ageing:
5% per decade hour, typical
Withstanding Voltage:
>2.5 times VDCW
Capacitance Tolerance:
M,Z

RATED VOLTAGE	D.F.	EXCEPTION OF D.F.	
≥50V	≤5%	≤9%	0603≥0.1uF; 0805≥0.47uF; 1206≥4.7uF;
25V	≤5%	≤9%	0402≥0.047uF; 0603≥0.1uF; 0805≥0.33uF; 1206≥1uF; 1210≥4.7uF
16V	≤9%	≤12.5%	0603≥2.2uF; 0805≥3.3uF; 1206≥10uF; 1210≥22uF; 1812≥47uF
10V	≤12.5%	≤16%	0603≥2.2uF; 0805≥3.3uF; 1206≥4.7uF; 1210≥10uF; 1812≥47uF
6.3V	≤16%		

Y5V

Typical Capacitance Change vs. Temperature



Operating Temperature Range:
-30°C to +85°C
Temperature Coefficient:
+22% - 82%Δ°C MAX.
Insulation Resistance:
>100 Ω-F or 10 GΩ, whichever is less at 25°C, VDCW. (The IR at 125°C is 10% of the value at 25°C)
Ageing:
7% per decade hour, typical
Withstanding Voltage:
>2.5 times VDCW
Capacitance Tolerance:
M,Z

RATED VOLTAGE	D.F.	EXCEPTION OF D.F.	
≥50V	≤5%	≤9%	0603≥0.1uF; 0805≥0.47uF; 1206≥4.7uF;
25V	≤5%	≤9%	0402≥0.047uF; 0603≥0.1uF; 0805≥0.33uF; ≥1206≥1uF; 1210≥4.7uF
16V	≤9%	≤12.5%	0603≥2.2uF; 0805≥3.3uF; 1206≥10uF; 1210≥22uF; 1812≥47uF
10V	≤12.5%	≤16%	0603≥2.2uF; 0805≥3.3uF; 1206≥4.7uF; 1210≥10uF; 1812≥47uF
6.3V	≤16%		

VOLTAGE AND CAPACITANCE RANGE

C0G(NP0) DIELECTRIC

Unit: mm

Values that are typically available.

SIZE		01005	0201		0402				
VDCW (MAX)		16V	25V	50V	10V	16V	25V	50V	100V
0R1	0.1		0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
0R2	0.2		0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
0R3	0.3		0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
0R4	0.4		0.30±0.03	0.30±0.03	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
0R5	0.5	0.20±0.02	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
0R6	0.6	0.20±0.02	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
0R7	0.7		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
0R8	0.8		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
0R9	0.9		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	**1pF**	0.20±0.02	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	1.2	0.20±0.02	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	1.5	0.20±0.02	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	1.8	0.20±0.02	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
2R0	2.0		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	2.2	0.20±0.02	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	2.7	0.20±0.02	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
3R0	3.0	0.20±0.02	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	3.3	0.20±0.02	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	3.9	0.20±0.02	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
4R0	4.0		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	4.7	0.20±0.02	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
5R0	5.0		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	5.6	0.20±0.02	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
6R0	6.0		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	6.8	0.20±0.02	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
7R0	7.0		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
8R0	8.0		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	8.2	0.20±0.02	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
9R0	9.0		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**	0.20±0.02	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	12	0.20±0.02	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	15	0.20±0.02	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	18	0.20±0.02	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	22	0.20±0.02	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	27	0.20±0.02	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	33	0.20±0.02	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	39	0.20±0.02	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	47	0.20±0.02	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	56		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	68		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	82		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	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
121	120		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	150				0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
181	180				0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
221	220				0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05
271	270				0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
331	330				0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
391	390				0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
471	470				0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
561	560				0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
681	680				0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
821	820				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	1200								
152	1500								
182	1800								
222	2200								
272	2700								
332	3300								
392	3900								
472	4700								
562	5600								
682	6800								
822	8200								
103	**0.01uF**								
123	0.012								
153	0.015								
183	0.018								
223	0.022								
273	0.027								
333	0.033								
393	0.039								
473	0.047								
563	0.056								
683	0.068								
823	0.082								
104	**0.1uF**								

CAPACITANCE CODE

CAPACITANCE VALUE

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

C0G(NP0) DIELECTRIC

Unit: mm

Values that are typically available.

SIZE		0603					0805				
VDCW (MAX)		10V	16V	25V	50V	100V	10V	16V	25V	50V	100V
CAPACITANCE CODE	CAPACITANCE VALUE										
0R1	0.1										
0R2	0.2										
0R3	0.3	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07						
0R4	0.4	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07						
0R5	0.5	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
0R6	0.6	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
0R7	0.7	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
0R8	0.8	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
0R9	0.9	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
1R0	**1pF**	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
1R2	1.2	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
1R5	1.5	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
1R8	1.8	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
2R0	2.0	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
2R2	2.2	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
2R7	2.7	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
3R0	3.0	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
3R3	3.3	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
3R9	3.9	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
4R0	4.0	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
4R7	4.7	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
5R0	5.0	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
5R6	5.6	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
6R0	6.0	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
6R8	6.8	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
7R0	7.0	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
8R0	8.0	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
8R2	8.2	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
9R0	9.0	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
100	**10pF**	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
120	12	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
150	15	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
180	18	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
220	22	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
270	27	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
330	33	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
390	39	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
470	47	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
560	56	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
680	68	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
820	82	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
101	**100pF**	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
121	120	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
151	150	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
181	180	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
221	220	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
271	270	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
331	330	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10	0.60±0.10
391	390	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
471	470	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
561	560	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
681	680	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
821	820	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
102	**1000pF**	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
122	1200	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
152	1500	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
182	1800	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
222	2200	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
272	2700	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
332	3300	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
392	3900	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
472	4700	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
562	5600	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
682	6800	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
822	8200	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	
103	**0.01uF**	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
123	0.012						0.85±0.10	0.85±0.10	0.85±0.10	0.85±0.10	
153	0.015						0.85±0.10	0.85±0.10	0.85±0.10	0.85±0.10	
183	0.018						1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	
223	0.022						1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	
273	0.027										
333	0.033						1.35±0.10	1.35±0.10	1.35±0.10	1.35±0.10	
393	0.039										
473	0.047										
563	0.056										
683	0.068										
823	0.082										
104	**0.1uF**										

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(NP0) DIELECTRIC

Unit: mm

Values that are typically available.

SIZE		1206					1210				
VDCW (MAX)		10V	16V	25V	50V	100V	10V	16V	25V	50V	100V
0R1	0.1										
0R2	0.2										
0R3	0.3										
0R4	0.4										
0R5	0.5										
0R6	0.6										
0R7	0.7										
0R8	0.8										
0R9	0.9										
1R0	**1pF**	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
1R2	1.2	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
1R5	1.5	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
1R8	1.8	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
2R0	2.0	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
2R2	2.2	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
2R7	2.7	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
3R0	3.0	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
3R3	3.3	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
3R9	3.9	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
4R0	4.0	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
4R7	4.7	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
5R0	5.0	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
5R6	5.6	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
6R0	6.0	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
6R8	6.8	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
7R0	7.0	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
8R0	8.0	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
8R2	8.2	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10					
9R0	9.0	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	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
120	12	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	0.95±0.10
150	15	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	0.95±0.10
180	18	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	0.95±0.10
220	22	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	0.95±0.10
270	27	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	0.95±0.10
330	33	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	0.95±0.10
390	39	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	0.95±0.10
470	47	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	0.95±0.10
560	56	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	0.95±0.10
680	68	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	0.95±0.10
820	82	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	0.95±0.10
101	**100pF**	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
121	120	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	0.95±0.10
151	150	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	0.95±0.10
181	180	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	0.95±0.10
221	220	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	0.95±0.10
271	270	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	0.95±0.10
331	330	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	0.95±0.10
391	390	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	0.95±0.10
471	470	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	0.95±0.10
561	560	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	0.95±0.10
681	680	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	0.95±0.10
821	820	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	0.95±0.10
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	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
122	1200	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	0.95±0.10
152	1500	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	0.95±0.10
182	1800	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	0.95±0.10
222	2200	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	0.95±0.10
272	2700	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	0.95±0.10
332	3300	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	0.95±0.10
392	3900	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	0.95±0.10
472	4700	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	0.95±0.10
562	5600	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	0.95±0.10
682	6800	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
822	8200	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
103	**0.01uF**	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
123	0.012	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
153	0.015	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
183	0.018	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
223	0.022	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
273	0.027	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30		2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
333	0.033	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30		2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
393	0.039	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30		2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
473	0.047	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30		2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
563	0.056	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30						
683	0.068	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30						
823	0.082	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30						
104	**0.1uF**	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30						

CAPACITANCE CODE

CAPACITANCE VALUE

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(NP0) DIELECTRIC

Unit: mm

Values that are typically available.

SIZE		1812				1825			2220			2225		
CAPACITANCE CODE	CAPACITANCE VALUE	16V	25V	50V	100V	25V	50V	100V	25V	50V	100V	25V	50V	100V
0R1	0.1													
0R2	0.2													
0R3	0.3													
0R4	0.4													
0R5	0.5													
0R6	0.6													
0R7	0.7													
0R8	0.8													
0R9	0.9													
1R0	**1pF**													
1R2	1.2													
1R5	1.5													
1R8	1.8													
2R0	2.0													
2R2	2.2													
2R7	2.7													
3R0	3.0													
3R3	3.3													
3R9	3.9													
4R0	4.0													
4R7	4.7													
5R0	5.0													
5R6	5.6													
6R0	6.0													
6R8	6.8													
7R0	7.0													
8R0	8.0													
8R2	8.2													
9R0	9.0													
100	**10pF**	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
120	12	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
150	15	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
180	18	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
220	22	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
270	27	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
330	33	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
390	39	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
470	47	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
560	56	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
680	68	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
820	82	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
101	**100pF**	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
121	120	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
151	150	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
181	180	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
221	220	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
271	270	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
331	330	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
391	390	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
471	470	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
561	560	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
681	680	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
821	820	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
102	**1000pF**	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
122	1200	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
152	1500	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
182	1800	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
222	2200	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
272	2700	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
332	3300	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
392	3900	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
472	4700	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
562	5600	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
682	6800	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
822	8200	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
103	**0.01uF**	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
123	0.012	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
153	0.015	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
183	0.018	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
223	0.022	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
273	0.027	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
333	0.033	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
393	0.039	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
473	0.047	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
563	0.056	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
683	0.068	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
823	0.082	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.00±0.20	2.00±0.20	2.50±0.30	2.50±0.30	2.50±0.30	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
104	**0.1uF**	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.00±0.20	2.00±0.20	2.50±0.30

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

Unit: mm

Values that are typically available.

SIZE		01005	0201					0402					
VDCW (MAX)		10V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	100V
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	120			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	150			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
181	180			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
221	220	0.20±0.02		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
271	270			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
331	330			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
391	390			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
471	470			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
561	560			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
681	680			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
821	820			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
102	**1000pF**	0.20±0.02	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	0.50±0.05
122	1200		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
152	1500		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
182	1800		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
222	2200		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
272	2700		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
332	3300		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
392	3900		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
472	4700		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
562	5600		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	
682	6800		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	
822	8200		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	
103	**.01uF**		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	
123	.012								0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
153	.015								0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
183	.018								0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
223	.022			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	
273	.027								0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
333	.033								0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
393	.039								0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
473	.047								0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	
563	.056								0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.20	
683	.068								0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.20	
823	.082								0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.20	
104	**0.1uF**		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±0.20	
124	0.12												
154	0.15									0.50±0.05			
184	0.18												
224	0.22		0.30±0.09					0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05		
274	0.27												
334	0.33												
394	0.39												
474	0.47							0.50±0.05	0.50±0.05				
564	0.56												
684	0.68												
824	0.82												
105	**1.00uF**							0.50±0.05	0.50±0.20				
125	1.25												
155	1.55												
185	1.85												
225	2.20												
335	3.30												
475	4.70												
685	6.80												
106	**10uF**												

CAPACITANCE CODE

CAPACITANCE VALUE

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

Unit: mm

Values that are typically available.

SIZE		0603						0805					
VDCW (MAX)		6.3V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V
101	**100pF**		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
121	120		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
151	150		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
181	180		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
221	220		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
271	270		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
331	330		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
391	390		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
471	470		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
561	560		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
681	680		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
821	820		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
102	**1000pF**		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
122	1200		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
152	1500		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
182	1800		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
222	2200		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
272	2700		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
332	3300		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
392	3900		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
472	4700		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
562	5600		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
682	6800		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
822	8200		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
103	**.01uF**		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
123	.012		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
153	.015		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
183	.018		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
223	.022		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
273	.027		0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
333	.033		0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
393	.039		0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
473	.047		0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
563	.056		0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
683	.068		0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
823	.082		0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
104	**0.1uF**		0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
124	0.12		0.80±0.07	0.80±0.07	0.80±0.15				0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.20
154	0.15		0.80±0.07	0.80±0.07	0.80±0.15	0.80±0.15			1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20
184	0.18		0.80±0.15	0.80±0.15	0.80±0.15				1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20
224	0.22	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.85±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20
274	0.27	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15				1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	1.25±0.20
334	0.33	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15			1.25±0.20	1.25±0.20	1.25±0.20	1.25±0.20	1.25±0.20
394	0.39	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15				1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	1.25±0.20
474	0.47	0.85±0.15	0.85±0.15	0.85±0.15	0.85±0.15	0.85±0.15			1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	1.25±0.20
564	0.56	0.80±0.15	0.80±0.15	0.80±0.15					1.25±0.10	1.25±0.10	1.25±0.10		
684	0.68	0.80±0.15	0.80±0.15	0.80±0.15					1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	
824	0.82	0.80±0.15	0.80±0.15	0.80±0.15					1.25±0.10	1.25±0.10	1.25±0.10		
105	**1.00uF**	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	1.25±0.20
125	1.25								1.25±0.20	1.25±0.20			
155	1.55								1.25±0.20	1.25±0.20	1.25±0.20		
185	1.85												
225	2.20	0.80±0.10	0.80±0.10	0.80±0.15				1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	
335	3.30							1.25±0.20	1.25±0.20	1.25±0.20			
475	4.70	0.80±0.15	0.85±0.15					1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	1.25±0.20	
685	6.80												
106	**10uF**	0.85±0.15	0.80±0.20					1.25±0.15	1.25±0.15	1.25±0.15	1.25±0.20		

CAPACITANCE CODE

CAPACITANCE VALUE

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 Unit: mm

Values that are typically available.

SIZE			1206						1210					
VDCW (MAX)			6.3V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V
CAPACITANCE CODE		CAPACITANCE VALUE												
101		**100pF**												
121		120												
151		150		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10						
181		180		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10						
221		220		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10						
271		270		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10						
331		330		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10						
391		390		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10						
471		470		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10						
561		560		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10						
681		680		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10						
821		820		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10						
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	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
122		1200		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	0.95±0.10
152		1500		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	0.95±0.10
182		1800		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	0.95±0.10
222		2200		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	0.95±0.10
272		2700		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	0.95±0.10
332		3300		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	0.95±0.10
392		3900		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	0.95±0.10
472		4700		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	0.95±0.10
562		5600		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	0.95±0.10
682		6800		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	0.95±0.10
822		8200		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	0.95±0.10
103		**.01uF**		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.85±0.15		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
123		.012		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	0.95±0.10
153		.015		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	0.95±0.10
183		.018		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	0.95±0.10
223		.022		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	0.95±0.10
273		.027		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	0.95±0.10
333		.033		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	0.95±0.10
473		.047		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	0.95±0.10
563		.056		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	0.95±0.10
683		.068		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	0.95±0.10
823		.082		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
104		**0.1uF**		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	0.95±0.10	0.95±0.10
124		0.12		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
154		0.15		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10
184		0.18		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10
224		0.22		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10
274		0.27		0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10	1.60±0.20		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20
334		0.33		0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10	1.60±0.20		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.60±0.20
394		0.39		0.95±0.10	0.95±0.10	1.60±0.30	1.60±0.30	1.60±0.20		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.50±0.30
474		0.47		1.15±0.15	1.15±0.15	1.60±0.30	1.60±0.30	1.60±0.20		1.25±0.20	1.25±0.20	1.25±0.20	1.25±0.20	1.25±0.20
564		0.56		1.15±0.15	1.15±0.15	1.15±0.15	1.60±0.30	1.60±0.30		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.50±0.30
684		0.68		1.15±0.15	1.15±0.15	1.15±0.15	1.60±0.30	1.60±0.30		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20
824		0.82		1.15±0.15	1.15±0.15	1.15±0.15	1.60±0.30	1.60±0.30		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20
105		**1.00uF**	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20
125		1.25												
155		1.55	1.15±0.15	1.15±0.15	1.15±0.15	1.60±0.30	1.60±0.30			2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30
185		1.85												
225		2.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20		1.60±0.20	1.60±0.20	2.50±0.30	2.50±0.30	2.50±0.30
335		3.30	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.30			2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30
475		4.70	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20			2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.00±0.20
685		6.80												
106		**10uF**	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20		2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.50±0.30
156		15												
226		22	1.60±0.20	1.60±0.20	1.60±0.30-M				2.50±0.20	2.50±0.20	2.50±0.20	2.50±0.20		
476		47							2.50±0.20	2.50±0.20				
107		**100uF**												

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

Unit: mm

Values that are typically available.

SIZE		1812					1825		2220/2225			
VDCW (MAX)		10V	16V	25V	50V	100V	50V	100V	16V	25V	50V	100V
101	**100pF**											
121	120											
151	150											
181	180											
221	220											
271	270											
331	330											
391	390											
471	470											
561	560											
681	680											
821	820											
102	**1000pF**	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		2.00±0.20	2.00±0.20	2.00±0.20
122	1200	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		2.00±0.20	2.00±0.20	2.00±0.20
152	1500	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		2.00±0.20	2.00±0.20	2.00±0.20
182	1800	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		2.00±0.20	2.00±0.20	2.00±0.20
222	2200	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		2.00±0.20	2.00±0.20	2.00±0.20
272	2700	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		2.00±0.20	2.00±0.20	2.00±0.20
332	3300	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		2.00±0.20	2.00±0.20	2.00±0.20
392	3900	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		2.00±0.20	2.00±0.20	2.00±0.20
472	4700	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		2.00±0.20	2.00±0.20	2.00±0.20
562	5600	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		2.00±0.20	2.00±0.20	2.00±0.20
682	6800	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		2.00±0.20	2.00±0.20	2.00±0.20
822	8200	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		2.00±0.20	2.00±0.20	2.00±0.20
103	**.01uF**	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		2.00±0.20	2.00±0.20	2.00±0.20
123	.012	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		2.00±0.20	2.00±0.20	2.00±0.20
153	.015	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		2.00±0.20	2.00±0.20	2.00±0.20
183	.018	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		2.00±0.20	2.00±0.20	2.00±0.20
223	.022	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		2.00±0.20	2.00±0.20	2.00±0.20
273	.027	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		2.00±0.20	2.00±0.20	2.00±0.20
333	.033	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		2.00±0.20	2.00±0.20	2.00±0.20
473	.047	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		2.00±0.20	2.00±0.20	2.00±0.20
563	.056	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		2.00±0.20	2.00±0.20	2.00±0.20
683	.068	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		2.00±0.20	2.00±0.20	2.00±0.20
823	.082	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		2.00±0.20	2.00±0.20	2.00±0.20
104	**0.1uF**	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		2.00±0.20	2.00±0.20	2.00±0.20
124	0.12	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		2.00±0.20	2.00±0.20	2.00±0.20
154	0.15	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		2.00±0.20	2.00±0.20	2.00±0.20
184	0.18	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		2.00±0.20	2.00±0.20	2.00±0.20
224	0.22	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		2.00±0.20	2.00±0.20	2.00±0.20
274	0.27	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		2.00±0.20	2.00±0.20	2.00±0.20
334	0.33	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		2.00±0.20	2.00±0.20	2.00±0.20
394	0.39	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		2.00±0.20	2.00±0.20	2.00±0.20
474	0.47	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20		2.00±0.20	2.00±0.20	2.00±0.20
564	0.56	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20		2.00±0.20	2.00±0.20	2.00±0.20
684	0.68	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20		2.00±0.20	2.00±0.20	2.00±0.20
824	0.82	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20		2.00±0.20	2.00±0.20	2.00±0.20
105	**1.00uF**	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20			2.00±0.20	1.60±0.20
125	1.25		2.00±0.20	2.00±0.20	2.00±0.20							
155	1.55					2.00±0.20	2.00±0.20				2.00±0.20	2.00±0.20
185	1.85											
225	2.20		2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.00±0.20				2.00±0.20	2.00±0.20
335	3.30		2.50±0.30	2.50±0.30	2.50±0.30						2.00±0.20	2.00±0.20
475	4.70		2.00±0.20	2.00±0.20	2.00±0.20	2.40±0.20					2.00±0.20	2.00±0.20
685	6.80				2.50±0.30						2.50±0.30	
106	**10uF**	2.30±0.20	2.30±0.20	2.00±0.20	2.00±0.20		2.50±0.30	2.50±0.30		2.50±0.30	2.50±0.30	2.50±0.30
156	15										2.50±0.30	2.50±0.30
226	22	2.50±0.30	2.50±0.30	2.50±0.30	3.10±0.30				2.40±0.20	2.80±0.30	2.40±0.20	
476	47											
107	**100uF**											

CAPACITANCE CODE

CAPACITANCE VALUE

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

X7S DIELECTRIC

Unit: mm

Values that are typically available

SIZE			0201				0402				
VDCW (MAX)			4V	6.3V	10V	16V	6.3V	10V	16V	25V	50V
CAPACITANCE CODE	104	**0.10uF**	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
	224	0.22	0.30±0.09	0.30±0.09			0.50±0.05	0.50±0.05	0.50±0.05		
	474	0.47									
	105	**1.00uF**					0.50±0.05	0.50±0.20			
	225	2.2					0.50±0.20	0.50±0.20			
	475	4.7									
	106	**10.0uF**									
	226	22.0uF									
	476	47.0uF									
	107	**100.0uF**									

SIZE			0603						0805					
VDCW (MAX)			6.3V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V
CAPACITANCE CODE	104	**0.10uF**	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	1.25±0.10
	224	0.22	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20
	474	0.47	0.85±0.15	0.85±0.15	0.85±0.15	0.85±0.15	0.85±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	1.25±0.20
	105	**1.00uF**	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20
	225	2.2	0.80±0.10	0.80±0.10	0.85±0.15				1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	
	475	4.7	0.80±0.15						1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20		
	106	**10.0uF**	0.85±0.15-M						1.25±0.15	1.25±0.15	1.25±0.15	1.25±0.20		
	226	22.0uF												
	476	47.0uF												
	107	**100.0uF**												

SIZE			1206						1210					
VDCW (MAX)			6.3V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V
CAPACITANCE CODE	104	**0.10uF**	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	0.95±0.10	0.95±0.10	0.95±0.10
	224	0.22	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.60±0.20	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10	1.25±0.10
	474	0.47	1.15±0.15	1.15±0.15	1.15±0.15	1.60±0.30	1.60±0.30	1.60±0.20	1.25±0.20	1.25±0.20	1.25±0.20	1.25±0.20	1.25±0.20	1.25±0.20
	105	**1.00uF**	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20
	225	2.2	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	2.50±0.30	2.50±0.30	2.50±0.30
	335	3.3							2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30
	475	4.7	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.00±0.20
	106	**10.0uF**	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20		2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.50±0.30
	156	15.0uF												
	226	22.0uF	1.60±0.20	1.60±0.20					2.50±0.20	2.50±0.20	2.50±0.20	2.50±0.20		
	476	47.0uF							2.50±0.20	2.50±0.20				
	107	**100.0uF**							2.50±0.30					

SIZE			1812				2220			
VDCW (MAX)			16V	25V	50V	100V	16V	25V	50V	100V
CAPACITANCE CODE	104	**0.10uF**	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10		2.00±0.20	2.00±0.20	2.00±0.20
	224	0.22	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10		2.00±0.20	2.00±0.20	2.00±0.20
	474	0.47	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20		2.00±0.20	2.00±0.20	2.00±0.20
	105	**1.00uF**	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20			2.00±0.20	1.60±0.20
	225	2.2	2.50±0.30						2.00±0.20	2.00±0.20
	335	3.3								
	475	4.7	2.00±0.20	2.00±0.20	2.00±0.20				2.00±0.20	2.00±0.20
	106	**10.0uF**	2.30±0.20	2.00±0.20	2.00±0.20			2.50±0.30	2.50±0.30	2.50±0.30
	156	15.0uF							2.80±0.30	2.50±0.30-M
	226	22.0uF	2.40±0.20	2.40±0.20			2.40±0.20	2.80±0.30	2.40±0.20	
	476	47.0uF								
	107	**100.0uF**								

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

X6S DIELECTRIC

Unit: mm

Values that are typically available.

SIZE			0201				0402					
VDCW (MAX)			4V	6.3V	10V	16V	4V	6.3V	10V	16V	25V	50V
CAPACITANCE CODE	104	**0.10uF**	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	0.50±0.05
	224	0.22	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	
	474	0.47					0.50±0.05	0.50±0.05	0.50±0.05			
	105	**1.00uF**	0.30±0.09-M	0.30±0.09-M			0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.10	
	225	2.2	0.30±0.09-M	0.50±0.05-M			0.50±0.20	0.50±0.20	0.50±0.20			
	475	4.7						0.50±0.15-M				
	106	**10.0uF**						0.50±0.20-M				
	226	22.0uF					0.60±0.20-M					
	476	47.0uF										
	107	**100.0uF**										

SIZE			0603						0805					
VDCW (MAX)			4V	6.3V	10V	16V	25V	50V	4V	6.3V	10V	16V	25V	50V
CAPACITANCE CODE	104	**0.10uF**	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10
	224	0.22	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
	474	0.47	0.85±0.15	0.85±0.15	0.85±0.15	0.85±0.15	0.85±0.15	0.85±0.15	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20
	105	**1.00uF**	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.15	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20
	225	2.2	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	1.25±0.10	1.25±0.20
	475	4.7	0.80±0.10	0.80±0.10	0.80±0.15	0.80±0.15			1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.15	1.25±0.25
	106	**10.0uF**	0.80±0.20-M	0.80±0.20-M	0.80±0.20-M	0.80±0.20-M			1.25±0.15	1.25±0.15	1.25±0.15	1.25±0.15	1.25±0.20	
	226	22.0uF	0.80±0.15-M	0.85±0.20-M					1.25±0.15-M	1.25±0.15-M	1.25±0.20-M	1.25±0.20-M	1.25±0.20-M	
	476	47.0uF	0.80±0.20-M						1.25±0.20-M	1.25±0.20-M				
	107	**100uF**							1.25±0.20-M					

SIZE			1206						1210				
VDCW (MAX)			4V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V
CAPACITANCE CODE	104	**0.10uF**	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	0.95±0.10	0.95±0.10
	224	0.22	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	0.95±0.10
	474	0.47	1.15±0.15	1.15±0.15	1.15±0.15	1.15±0.15	1.60±0.30	1.60±0.30	1.25±0.20	1.25±0.20	1.25±0.20	1.25±0.20	1.25±0.20
	105	**1.00uF**	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10
	225	2.2	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	2.50±0.30	2.50±0.30
	335	3.3							2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30
	475	4.7	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30
	106	**10.0uF**	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
	156	15.0uF											
	226	22.0uF	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20		2.50±0.20-M	2.50±0.20-M	2.50±0.20-M	2.50±0.20-M	
	476	47.0uF	1.60±0.20	1.60±0.20					2.50±0.20-M	2.50±0.20-M	2.50±0.20-M		
	107	**100.0uF**	1.60±0.30-M						2.50±0.30-M				

SIZE			1812				2220			
VDCW (MAX)			16V	25V	50V	100V	16V	25V	50V	100V
CAPACITANCE CODE	104	**0.10uF**	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
	224	0.22	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
	474	0.47	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
	105	**1.00uF**	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20	1.60±0.20
	225	2.2	2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
	335	3.3								
	475	4.7	2.00±0.20	2.00±0.20	2.00±0.20		2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20
	106	**10.0uF**	2.30±0.20	2.00±0.20	2.00±0.20		2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30
	156	15.0uF					2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30
	226	22.0uF	2.40±0.20	2.40±0.20			2.40±0.20	2.80±0.30	2.40±0.20	
	476	47.0uF								
	107	**100.0uF**								

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

X5R DIELECTRIC

Unit: mm

Values that are typically available.

SIZE		01005	0201						0402						
CAPACITANCE CODE	CAPACITANCE VALUE	VDCW (MAX) 6.3V	4V	6.3V	10V	16V	25V	50V	4V	6.3V	10V	16V	25V	35V	50V
102	**1000pF**	0.20±0.02	0.30±0.03	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
122	1200		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
152	1500		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
182	1800		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
222	2200		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
272	2700		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
332	3300		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
392	3900		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
472	4700		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
562	5600		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
682	6800		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
822	8200		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
103	**0.01uF**	0.20±0.02	0.30±0.03	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
153	.015		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
223	.022		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
273	.027		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
333	.033		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
393	.039		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
473	.047		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
563	.056		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±0.20
683	.068		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±0.20
823	.082		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±0.20
104	**0.1uF**	0.20±0.02	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±0.20
154	.150									0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05		
224	.220	0.20±0.02-M	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
274	.270														
334	.330		0.30±0.03	0.30±0.03						0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05		
394	.390														
474	.470		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±0.20
684	.680														
824	.820														
105	**1uF**	0.20±0.02-M	0.30±0.05	0.30±0.05	0.30±0.05	0.30±0.09				0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.10	0.50±0.15	
125	1.20														
155	1.50														
185	1.80														
225	2.20		0.30±0.09	0.30±0.09	0.30±0.09				0.50±0.05	0.50±0.05	0.50±0.07	0.50±0.10	0.50±0.05	0.50±0.15	
335	3.30														
395	3.90														
475	4.70		0.50±0.05	0.50±0.05					0.50±0.15	0.50±0.15	0.50±0.15	0.50±0.20 M			
685	6.80														
106	**10uF**								0.50±0.20 M	0.50±0.20 M	0.50±0.20 M				
156	15														
226	22								0.50±0.20 M	0.50±0.20 M					
476	47														
107	**100uF**														
157	150														
227	220														

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

Values that are typically available.

X5R DIELECTRIC

Unit: mm

SIZE			0603							0805						
VDCW (MAX)			4V	6.3V	10V	16V	25V	35V	50V	4V	6.3V	10V	16V	25V	35V	50V
CAPACITANCE CODE	CAPACITANCE VALUE															
104	**0.1uF**				0.80±0.15	0.80±0.15	0.80±0.15		0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10		0.80±0.10
154	.150					0.80±0.15	0.80±0.15									
224	.220			0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15						1.25±0.10	1.25±0.10		
274	.270			0.80±0.15	0.80±0.15	0.80±0.15										
334	.330			0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15						1.25±0.20			
394	.390															
474	.470			0.85±0.15	0.85±0.15	0.85±0.15	0.80±0.15		0.85±0.15			1.25±0.10	1.25±0.10	1.25±0.10		1.25±0.20
684	.680			0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15						1.25±0.10			
824	.820			0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15									
105	**1uF**			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	1.25±0.10	1.25±0.10	1.25±0.10		1.25±0.20
125	1.20															
155	1.50			0.80±0.15	0.80±0.15											
185	1.80															
225	2.20			0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.15	0.80±0.15	0.80±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10		1.25±0.10
335	3.30			0.80±0.15	0.80±0.15						1.25±0.20	1.25±0.20	1.25±0.20	1.25±0.20		
395	3.90															
475	4.70			0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.15	0.80±0.20			1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.15		1.25±0.15
685	6.80															
106	**10uF**		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.15	0.80±0.20 M	0.80±0.20 M			1.25±0.10	1.25±0.10	1.25±0.15	1.25±0.20	1.25±0.20	1.25±0.20
156	15															
226	22		0.85±0.15	0.85±0.15	0.80±0.25 M						1.25±0.15	1.25±0.20	1.25±0.20	1.25±0.20 M	1.25±0.20 M	
476	47		0.85±0.15 M	0.85±0.15 M						1.25±0.20 M	1.25±0.20 M	1.25±0.20 M				
107	**100uF**									1.25±0.20 M	1.25±0.20 M					
157	150															
227	220															

SIZE			1206						1210						
VDCW (MAX)			4V	6.3V	10V	16V	25V	50V	4V	6.3V	10V	16V	25V	35V	50V
CAPACITANCE CODE	CAPACITANCE VALUE														
105	**1uF**			1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20							1.25±0.10
125	1.20														
155	1.50				1.15±0.15	1.15±0.15					2.00±0.20	2.00±0.20			
185	1.80														
225	2.20			1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20			1.60±0.20	1.60±0.20	1.60±0.20		2.50±0.30
335	3.30			1.60±0.30	1.60±0.30	1.60±0.30	1.60±0.20								
395	3.90														
475	4.70			1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20		2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30	1.80±0.20	2.50±0.30
685	6.80			1.60±0.30	1.60±0.30										
106	**10uF**			1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20		2.50±0.20	2.50±0.20	2.50±0.20	2.50±0.20	2.50±0.30	2.00±0.20
156	15														
226	22			1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20			2.50±0.20	2.50±0.20	2.50±0.20	2.50±0.20		
476	47			1.60±0.20	1.60±0.20	1.60±0.20 M	1.60±0.30 M			2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30 M		
107	**100uF**			1.60±0.20 M	1.60±0.20 M					2.50±0.30 M	2.50±0.30 M	2.50±0.30 M			
157	150									2.50±0.30 M					
227	220		1.60±0.20 M	1.60±0.20 M						2.50±0.30 M					

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

X5R DIELECTRIC

Unit: mm

SIZE			1812						2220					
VDCW (MAX)			4V	6.3V	10V	16V	25V	50V	4V	6.3V	10V	16V	25V	50V
CAPACITANCE CODE	475	4.70			2.00±0.20	2.00±0.20	2.00±0.20							
	685	6.80												
	106	**10uF**		2.00±0.20	2.00±0.20	2.00±0.20	2.00±0.20						2.50±0.30	2.50±0.30
	156	15											2.50±0.30	
	226	22		2.50±0.30	2.50±0.30	2.50±0.30	2.50±0.30							
	476	47		2.80±0.30-M	2.80±0.30-M					2.80±0.20-M	2.80±0.20-M	2.80±0.20-M		
	107	**100uF**		2.80±0.30-M						2.80±0.30-M				
	157	150												
	227	220												

CAPACITANCE VALUE

VOLTAGE AND CAPACITANCE RANGE

Z5U DIELECTRIC

Unit: mm

Values that are typically available.

SIZE			0402		0603		0805		1206		1210		1812		2220	
VDCW (MAX)			25V	50V	25V	50V	25V	50V	25V	50V	25V	50V	25V	50V	25V	50V
CAPACITANCE CODE	**103**	**.01uF**	0.50±0.05	0.50±0.05	0.80±0.07	0.80±0.07	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10				
	123	.012	0.50±0.05	0.50±0.05	0.80±0.07	0.80±0.07	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10				
	153	.015	0.50±0.05	0.50±0.05	0.80±0.07	0.80±0.07	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10				
	183	.018	0.50±0.05	0.50±0.05	0.80±0.07	0.80±0.07	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10				
	223	.022	0.50±0.05	0.50±0.05	0.80±0.07	0.80±0.07	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10				
	273	.027	0.50±0.05	0.50±0.05	0.80±0.07	0.80±0.07	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10				
	333	.033	0.50±0.05	0.50±0.05	0.80±0.15	0.80±0.15	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10				
	393	.039	0.50±0.05	0.50±0.05	0.80±0.15	0.80±0.15	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10				
	473	.047	0.50±0.05	0.50±0.05	0.80±0.15	0.80±0.15	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10				
	563	.056	0.50±0.05		0.80±0.15	0.80±0.15	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10				
	683	.068	0.50±0.05		0.80±0.15	0.80±0.15	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10				
	823	.082	0.50±0.05		0.80±0.15	0.80±0.15	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10				
	104	**0.10uF**	0.50±0.05		0.80±0.15	0.80±0.15	0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10		
	124	.120			0.80±0.15		0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10		
	154	.150			0.80±0.15		1.25±0.10	1.25±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	2.00±0.20	2.00±0.20
	184	.180			0.80±0.15		1.25±0.10	1.25±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	2.00±0.20	2.00±0.20
	224	.220			0.80±0.15		1.25±0.10	1.25±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	2.00±0.20	2.00±0.20
	274	.270					1.25±0.10	1.25±0.20	1.25±0.10	1.25±0.10	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20
	334	.330					1.25±0.20		1.25±0.10	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
	394	.390					1.25±0.10		1.60±0.30	1.60±0.30	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20
	474	.470					1.25±0.10		1.60±0.30	1.60±0.30	1.25±0.20	1.25±0.20	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20
	564	.560					1.25±0.10		1.15±0.15		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20
	684	.680							1.15±0.15		1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20
	824	.820							1.15±0.15		1.25±0.10	1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20	2.00±0.20
	105	**1.00uF**							1.60±0.20		1.25±0.10	1.25±0.10	2.00±0.20	2.00±0.20		2.00±0.20
	125	1.20											2.00±0.20	2.00±0.20		
	155	1.50									2.50±0.30	2.50±0.30				2.00±0.20
	185	1.80														
	225	2.20									2.50±0.30		2.50±0.30	2.50±0.30		2.00±0.20
	335	3.30									2.50±0.30		2.50±0.30			2.00±0.20
	475	4.70									2.50±0.30					
	685	6.80														
	106	**10.0uF**														2.50±0.30
	156	15.0uF														
	226	22.0uF														
	476	47.0uF														
	107	100.0uF														

CAPACITANCE VALUE

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

Y5V DIELECTRIC

Unit: mm

Values that are typically available.

SIZE		0201	0402					0603				
VDCW (MAX)		10V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V
103	**.01uF**	0.30±0.03			0.50±0.05	0.50±0.05	0.50±0.05			0.80±0.07	0.80±0.07	0.80±0.07
123	.012				0.50±0.05	0.50±0.05				0.80±0.07	0.80±0.07	0.80±0.07
153	.015				0.50±0.05	0.50±0.05				0.80±0.07	0.80±0.07	0.80±0.07
183	.018				0.50±0.05	0.50±0.05				0.80±0.07	0.80±0.07	0.80±0.07
223	.022				0.50±0.05	0.50±0.05				0.80±0.07	0.80±0.07	0.80±0.07
273	.027				0.50±0.05	0.50±0.05				0.80±0.07	0.80±0.07	0.80±0.07
333	.033				0.50±0.05	0.50±0.05				0.80±0.15	0.80±0.15	0.80±0.15
393	.039				0.50±0.05	0.50±0.05				0.80±0.15	0.80±0.15	0.80±0.15
473	.047				0.50±0.05	0.50±0.05				0.80±0.15	0.80±0.15	0.80±0.15
563	.056				0.50±0.05	0.50±0.05				0.80±0.15	0.80±0.15	0.80±0.15
683	.068				0.50±0.05	0.50±0.05				0.80±0.15	0.80±0.15	0.80±0.15
823	.082				0.50±0.05	0.50±0.05				0.80±0.15	0.80±0.15	0.80±0.15
104	**.100uF**		0.50±0.05	0.50±0.05	0.50±0.05	0.50±0.05		0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15
124	.120							0.80±0.07	0.80±0.07	0.80±0.07	0.80±0.15	
154	.150							0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	
184	.180							0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	
224	.220		0.50±0.05	0.50±0.05	0.50±0.05			0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15	0.80±0.15
274	.270									0.80±0.15	0.80±0.15	
334	.330		0.50±0.05	0.50±0.05						0.80±0.15	0.80±0.15	
394	.390											
474	.470		0.50±0.05	0.50±0.05				0.85±0.15	0.85±0.15	0.85±0.15	0.85±0.15	0.85±0.15
564	.560											
684	.680											
824	.820											
105	**1.00uF**		0.50±0.05					0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10	
125	1.20											
155	1.50											
185	1.80											
225	2.20							0.80±0.10	0.80±0.10	0.80±0.10		
335	3.30											
395	3.90											
475	4.70							0.80±0.10	0.80±0.10			
685	6.80											
106	**10.0uF**											
156	15.0uF											
226	22.0uF											
476	47.0uF											
107	100uF											

CAPACITANCE CODE

CAPACITANCE VALUE

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

Y5V DIELECTRIC

Unit: mm

Values that are typically available.

SIZE			0805					1206			
VDCW (MAX)			6.3V	10V	16V	25V	50V	10V	16V	25V	50V
CAPACITANCE CODE	CAPACITANCE VALUE										
103	**.01uF**			0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
123	.012			0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
153	.015			0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
183	.018			0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
223	.022			0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
273	.027			0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
333	.033			0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
393	.039			0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
473	.047			0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
563	.056			0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
683	.068			0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
823	.082			0.80±0.10	0.80±0.10	0.80±0.10	0.80±0.10				
104	**.100uF**			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
124	.120			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
154	.150			1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
184	.180			1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
224	.220			1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10
274	.270			1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10
334	.330			1.25±0.20	1.25±0.20	1.25±0.20	1.25±0.20	0.95±0.10	0.95±0.10	1.25±0.10	1.25±0.10
394	.390			1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	0.95±0.10	0.95±0.10	1.60±0.30	1.60±0.30
474	.470			1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	1.15±0.15	1.15±0.15	1.60±0.30	1.60±0.30
564	.560			1.25±0.10	1.25±0.10	1.25±0.10					
684	.680			1.25±0.10	1.25±0.10	1.25±0.10		1.15±0.15	1.15±0.15	1.15±0.15	1.60±0.30
824	.820			1.25±0.10	1.25±0.10	1.25±0.10		1.15±0.15	1.15±0.15	1.15±0.15	1.60±0.30
105	**1.00uF**		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20	1.60±0.20	1.60±0.20	1.60±0.20	
125	1.20										
155	1.50			1.25±0.20	1.25±0.20				1.15±0.15	1.60±0.30	
185	1.80										
225	2.20		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10		1.60±0.20	1.60±0.20	1.60±0.20	
335	3.30		1.25±0.20	1.25±0.20	1.25±0.20				1.60±0.30	1.60±0.30	
395	3.90										
475	4.70		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.20		1.60±0.20	1.60±0.20	1.60±0.20	1.60±0.20
685	6.80										
106	**10.0uF**		1.25±0.15	1.25±0.15	1.25±0.15			1.60±0.20	1.60±0.20	1.60±0.20	
156	15.0uF										
226	22.0uF							1.60±0.20			
476	47.0uF										
107	100uF										

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

Y5V DIELECTRIC Unit: mm

Values that are typically available.

SIZE			1210					1812		
VDCW (MAX)			6.3V	10V	16V	25V	50V	6.3V	10V	25V
CAPACITANCE CODE		CAPACITANCE VALUE								
104		**.100uF**		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10			
124		.120		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10			
154		.150		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10			
184		.180		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10			
224		.220		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10			
274		.270		0.95±0.10	0.95±0.10	0.95±0.10	0.95±0.10			
334		.330		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10			
394		.390		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10			
474		.470		1.25±0.20	1.25±0.20	1.25±0.20	1.25±0.20			
564		.560		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10			
684		.680		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10			
824		.820		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10			
105		**1.00uF**		1.25±0.10	1.25±0.10	1.25±0.10	1.25±0.10		2.00±0.20	2.00±0.20
125		1.20							2.00±0.20	2.00±0.20
155		1.50			2.50±0.30	2.50±0.30				
185		1.80								
225		2.20			1.60±0.20	2.50±0.30			2.50±0.30	2.50±0.30
335		3.30			2.50±0.30	2.50±0.30			2.50±0.30	2.50±0.30
395		3.90								
475		4.70			2.50±0.30	2.50±0.30			2.00±0.20	2.00±0.20
685		6.80								
106		**10.0uF**			2.00±0.20	2.00±0.20	2.00±0.20		2.50±0.30	2.50±0.30
156		15.0uF								
226		22.0uF		2.50±0.20	2.50±0.20			2.00±0.20	2.00±0.20	
476		47.0uF	2.50±0.20	2.50±0.20				2.80±0.30-M	2.80±0.30-M	
107		100uF	2.50±0.30-M					2.80±0.30-M		

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.

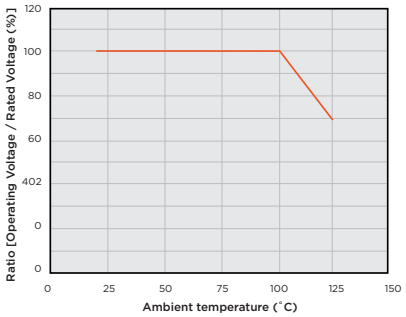
TEST PARAMETERS

Test parameters for Multilayer Ceramic Capacitors - X7R, X7S, X6S, X5R and Y5V:	1KHz ± 100Hz at 1.0 ± 0.2 Vrms < 10uF (10 V min.) 1KHz ± 100Hz at 1.0 ± 0.1 Vrms < 10uF (6.3V max.) 120Hz ± 24Hz at 1.0 ± 0.1 Vrms ≥ 10uF
Test parameters for Multilayer Ceramic Capacitors - C0G:	1MHz ± 100KHz at 1.0 ± 0.2 Vrms ≤ 1000pF, 25°C 1KHz ± 100Hz at 1.0 ± 0.2 Vrms > 1000pF, 25°C

NOTE: To ensure proper capacitance readings, the voltage level must be held constant. The HP4284 and Agilent E4980 has a "ALC" (Automatic Level Control) function and should be switched to the "ON" position for accurate capacitance readings.

NOTE: 0201, X7R, 0.1uF; When the operating temperature range is between 100˚C and 125˚C, it is recommended to apply the following voltage derating as shown in the diagram below.

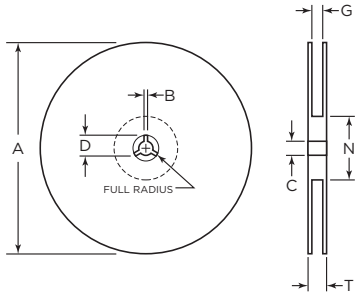
DERATING CURVE FOR 0201, 0.1UF, X7R ONLY



TAPE & REEL SPECIFICATIONS

All tape and reel specifications must be adhered to per EIA-481-1-A.

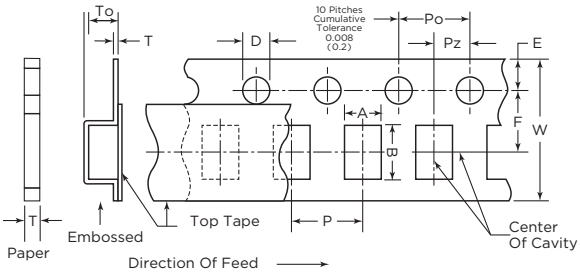
REEL



Unit: mm (inch)

Tape	B min	C	A (7")	A (13")	D min	N min	G	T max
4mm	2.0 (0.079)	13 ± 0.05 (0.512 ± 0.02)	178 ±2.0 (7 ± 0.079)	-	21 ± 0.8 (0.82 ± 0.03)	50 (1.97)	5.0 ± 1.5 (0.196 ± 0.05)	8.0 max (0.315 max)
8mm	2.0 (0.07)	13 ± 0.05 (0.512 ± 0.02)	178 ±2.0 (7 ± 0.079)	330 ± 2.0 (13± 0.08)	20.2 (0.795)	50 (1.97)	10 ± 1.5 (0.394 ± 0.059)	14.9 (0.587)
12mm	2.0 (0.07)	13 ± 0.05 (0.512 ± 0.02)	178 ±2.0 (7 ± 0.079)	330 ± 2.0 (13± 0.08)	20.2 (0.795)	50 (1.97)	10 ± 1.5 (0.394 ± 0.059)	14.9 (0.587)

TAPE



7" Reel Quantities **

SIZE	01005 (E)	01005 (P)	0201	0402	0603	0805	1206	1210	1812	2220
Tape Size	4mm	8mm	8mm	8mm	8mm	8mm	8mm	8mm	12mm	12mm
Min Qty Per Reel	40,000*	20000*	15,000	5,000	3,000	2,000	2,000	1,000	1,000	1,000
Max Qty Per Reel	40,000*	20000*	15,000	10,000	4,000	5,000	5,000	5,000	3,000	1,000

NOTE: ** Quantity dependent on thickness
*Smaller quantities may be available. Please contact us.

Unit: mm (inch)

Paper Tape Carrier Dimensions (8mm)

Size (inches)	A	B	W	F	E	Po	Pz	D	t	P
01005	0.25 ± 0.05 (0.010 ± 0.002)	0.45 ± 0.05 (0.018 ± 0.002)	8.0 ± 0.2 (0.315 ± 0.008)	3.5 ± 0.1 (0.138 ± 0.004)	1.75 ± 0.1 (0.069 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	2.0 ± 0.05 - 0.0 (0.039 ± 0.002) - 0.000	1.5 + 0.1 (0.064 + .004)	1.15 max (0.045 max)	2.0 ± 0.05 (0.079 ± 0.002)
0201	0.37 ± 0.05 (0.014 ± 0.002)	0.67 ± 0.05 (0.026 ± 0.002)	8.0 ± 0.2 (0.315 ± 0.008)	3.5 ± 0.1 (0.138 ± 0.004)	1.75 ± 0.1 (0.069 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	2.0 ± 0.05 - 0.0 (0.039 ± 0.002) - 0.000	1.5 + 0.1 (0.064 + .004)	1.15 max (0.045 max)	2.0 ± 0.05 (0.079 ± 0.002)
0402	0.65 ± 0.1 (0.026 ± 0.004)	1.10 ± 0.2 (0.043 ± 0.008)	8.0 ± 0.2 (0.315 ± 0.008)	3.5 ± 0.1 (0.138 ± 0.004)	1.75 ± 0.1 (0.069 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	2.0 ± 0.05 - 0.0 (0.039 ± 0.002) - 0.000	1.5 + 0.1 (0.064 + .004)	1.15 max (0.045 max)	2.0 ± 0.05 (0.079 ± 0.002)
0603	1.10 ± 0.2 (0.043 ± 0.008)	1.90 ± 0.2 (0.075 ± 0.008)	8.0 ± 0.2 (0.315 ± 0.008)	3.5 ± 0.1 (0.138 ± 0.004)	1.75 ± 0.1 (0.069 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	2.0 ± 0.05 - 0.0 (0.039 ± 0.002) - 0.000	1.5 + 0.1 (0.064 + .004)	1.15 max (0.045 max)	4.0 ± 0.1 (0.157 ± 0.004)
0805	1.16 ± 0.2 (0.046 ± 0.008)	2.4 ± 0.2 (0.095 ± 0.008)	8.0 ± 0.2 (0.315 ± 0.008)	3.5 ± 0.1 (0.138 ± 0.004)	1.75 ± 0.1 (0.069 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	2.0 ± 0.05 - 0.0 (0.039 ± 0.002) - 0.000	1.5 + 0.1 (0.064 + .004)	1.15 max (0.045 max)	4.0 ± 0.1 (0.157 ± 0.004)
1206	2.0 ± 0.2 (0.079 ± 0.008)	3.6 ± 0.2 (0.142 ± 0.008)	8.0 ± 0.2 (0.315 ± 0.008)	3.5 ± 0.1 (0.138 ± 0.004)	1.75 ± 0.1 (0.069 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	2.0 ± 0.05 - 0.0 (0.039 ± 0.002) - 0.000	1.5 + 0.1 (0.064 + .004)	1.15 max (0.045 max)	4.0 ± 0.1 (0.157 ± 0.004)

Embossed Carrier Dimensions (4mm, 8mm & 12mm)

Size (inches)	A	B	W	F	E	Po	Pz	D	To	T	P
01005	0.23 (0.009)	0.43 (0.016)	4.0 ± 0.05 (0.157 ± 0.002)	1.8 ± 0.02 (0.070 ± 0.001)	0.9 ± 0.05 (0.035 ± 0.002)	2.0 ± 0.04 (0.079 ± 0.001)	2.00 (0.079)	0.8 ± 0.04 (0.031 ± 0.001)	0.5 max (0.019 max)	0.15 -0.4 (0.005 -0.015)	1.00 (0.039)
0603	1.05 ± 0.15 (0.042 ± .006)	1.90 ± 0.15 (0.075 ± 0.006)	8.0 ± 0.3 (0.315 ± 0.012)	3.5 ± .01 (0.138 ± .004)	1.75 ± 0.1 (0.069 ± .004)	4.0 ± 0.1 (0.157 ± .004)	2.0 ± 0.05 (0.079 ± .002)	1.5 + 0.1 - 0.0 (0.06 + .004) - 0.000	0.75 max (0.03 max)	0.6 max (0.024 max)	4.0 ± 0.1 (0.157 ± 0.004)
0805	1.48 ± 0.2 (0.058 ± 0.008)	2.3 ± 0.3 (0.091 ± .008)	8.0 ± 0.3 (0.315 ± 0.008)	3.5 ± .01 (0.138 ± 0.004)	1.75 ± 0.1 (0.069 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	2.0 ± 0.05 (0.079 ± 0.002)	1.5 + 0.1 - 0.0 (0.06 + 0.004) - 0.000	2.5 max (0.098 max)	0.6 max (0.024 max)	4.0 ± 0.1 (0.157 ± 0.004)
1206	2.0 ± 0.2 (0.079 ± 0.008)	3.6 ± 0.3 (0.142 ± 0.008)	8.0 ± 0.3 (0.315 ± 0.008)	3.5 ± .01 (0.138 ± 0.004)	1.75 ± 0.1 (0.069 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	2.0 ± 0.05 (0.079 ± 0.002)	1.5 + 0.1 - 0.0 (0.06 + 0.004) - 0.000	2.5 max (0.098 max)	0.6 max (0.024 max)	4.0 ± 0.1 (0.157 ±0.004)
1210	2.9 ± 0.2 (0.114 ± 0.008)	3.6 ± 0.3 (0.142 ± 0.008)	8.0 ± 0.3 (0.315 ± 0.008)	3.5 ± .01 (0.138 ±0.004)	1.75 ± 0.1 (0.069 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	2.0 ± 0.05 (0.079 ± 0.002)	1.5 + 0.1 - 0.0 (0.06 + 0.004) - 0.000	2.5 max (0.098 max)	0.6 max (0.024 max)	4.0 ± 0.1 (0.157 ± 0.004)
1812	3.6 ± 0.2 (0.142 ± 0.008)	4.9 ± 0.3 (0.193 ± 0.008)	12.0 ± 0.3 (0.472 ± 0.012)	5.6 ± .01 (0.221 ± 0.004)	1.75 ± 0.1 (0.069 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	2.0 ± 0.05 (0.079 ± 0.002)	1.5 + 0.1 - 0.0 (0.06 + 0.004) - 0.000	3.8 max (0.150 max)	0.6 max (0.024 max)	8.0 ± 0.1 (0.315 ± 0.004)
2220	5.8 ± 0.2 (0.228 ± 0.008)	6.5 ± 0.2 (0.256 ± 0.008)	12.0 ± 0.3 (0.472 ± 0.012)	5.6 ± .01 (0.221 ± 0.004)	1.75 ± 0.1 (0.069 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	2.0 ± 0.05 (0.079 ± 0.002)	1.5 + 0.1 - 0.0 (0.06 + 0.004) - 0.000	4.2 max (0.165 max)	0.6 max (0.024 max)	8.0 ± 0.1 (0.315 ± 0.004)
2225	6.8 ± 0.2 (0.268 ± 0.008)	6.5 ± 0.2 (0.256 ± 0.008)	12.0 ± 0.3 (0.472 ± 0.012)	5.6 ± .01 (0.221 ± 0.004)	1.75 ± 0.1 (0.069 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	2.0 ± 0.05 (0.079 ± 0.002)	1.5 + 0.1 - 0.0 (0.06 + 0.004) - 0.000	3.5 max (0.138 max)	0.6 max (0.024 max)	8.0 ± 0.1 (0.315 ± 0.004)

ENVIRONMENTAL CHARACTERISTICS

<table>
<tr><th>NO</th><th colspan="2">ITEM</th><th>PERFORMANCE</th><th colspan="3">TEST CONDITION</th></tr>
<tr><td>1</td><td colspan="2">APPEARANCE</td><td>NO ABNORMAL EXTERIOR APPEARANCE</td><td colspan="3">THROUGH MICROSCOPE (X10)</td></tr>
<tr><td>2</td><td colspan="2">INSULATION RESISTANCE</td><td>10,000M OR 500M μF PRODUCT WHICHEVER IS SMALLER (RATED VOLTAGE IS BELOW 16V: 10,000M OR 100M μF)</td><td colspan="3">RATED VOLTAGE SHALL BE APPLIED. MEASUREMENT TIME IS 60 - 120 RATED VOLTAGE TIME 60 SEC .</td></tr>
<tr><td>3</td><td colspan="2">WITHSTANDING VOLTAGE</td><td>NO DIELECTRIC BREAKDOWN OR MECHANICAL BREAKDOWN</td><td colspan="3">CLASS I : 300% OF THE RATED VOLTAGE FOR 1-5 SEC, CLASS II: 250% OF THE RATED VOLTAGE FOR 1-5 SEC IS APPLIED WITH LESS THAN 50mA CURRENT</td></tr>
<tr><td rowspan="5">4</td><td rowspan="5">CAPACITANCE</td><td rowspan="3">CLASS I</td><td rowspan="3">WITHIN THE SPECIFIED TOLERANCE</td><td>CAPACITANCE</td><td>FREQUENCY</td><td>VOLTAGE</td></tr>
<tr><td>1,000pF AND BELOW</td><td>1MHz ±10%</td><td rowspan="2">0.5 ~ 5 Vrms</td></tr>
<tr><td>MORE THAN 1,000 pF</td><td>1kHz ± 10%</td></tr>
<tr><td rowspan="2">CLASS II</td><td rowspan="2">WITHIN THE SPECIFIED TOLERANCE</td><td>CAPACITANCE</td><td>FREQUENCY</td><td>VOLTAGE</td></tr>
<tr><td>4.7μF AND BELOW</td><td>1kHz ± 10%</td><td>1.0 ± 0.2Vrms</td></tr>
<tr><td></td><td></td><td></td><td>MORE THAN 4.7μF</td><td>120Hz ± 20%</td><td>1.0 ± 0.2Vrms</td></tr>
<tr><td rowspan="3">5</td><td rowspan="3">Q</td><td rowspan="3">CLASS I</td><td rowspan="3">OVER 30pF : Q 1,000
LESS THAN 30pF: Q 400
+20C
(C: CAPACITANCE)</td><td>CAPACITANCE</td><td>FREQUENCY</td><td>VOLTAGE</td></tr>
<tr><td>1,000pF AND BELOW</td><td>1MHz ±10%</td><td rowspan="2">0.5 ~ 5 Vrms</td></tr>
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<tr><td>6</td><td>DISSIPATION FACTOR (TanΘ CLASS II)</td><td>CLASS II</td><td colspan="4">
X7R, X6S, X5R
<table>
<tr><th>Rated Voltage</th><th>D.F.</th><th colspan="2">Exception of D.F.</th></tr>
<tr><td rowspan="2">≥50V</td><td rowspan="2">≤2.5%</td><td>≤3%</td><td>0201 (50V); 0603≥0.047uF
0805≥0.22uF; 1206≥0.47uF</td></tr>
<tr><td>≤5%</td><td>0603≥1uF; 0805≥1uF; 1206≥4.7uF;
1210≥4.7uF</td></tr>
<tr><td rowspan="2">25V</td><td rowspan="2">≤2.5%</td><td>≤5%</td><td>0201≥0.01uF; 0805≥1uF; 1210≥4.7uF</td></tr>
<tr><td>≤10%</td><td>0402≥0.10uF; 0603≥0.33uF;
0805≥2.2uF 1206≥4.7uF; 1210≥22uF</td></tr>
<tr><td rowspan="2">16V</td><td rowspan="2">≤3.5%</td><td>≤5%</td><td>0201≥0.01uF; 0402≥0.033uF;
0805≥0.68uF; 1206≥2.2uF; 1210≥4.7uF</td></tr>
<tr><td>≤10%</td><td>0402≥0.47uF; 0603≥0.68uF;
0805≥2.2uF;
1206≥4.7uF; 1210≥22uF</td></tr>
<tr><td>10V</td><td>≤5%</td><td>≤10%</td><td>0402≥0.33uF; 0603≥0.33uF;
0805≥2.2uF;
1206≥2.2uF; 1210≥22uF</td></tr>
<tr><td>6.3V</td><td>≤10%</td><td></td><td></td></tr>
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Y5V, Z5U
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<tr><th>Rated Voltage</th><th>D.F.</th><th colspan="2">Exception of D.F.</th></tr>
<tr><td>≥50V</td><td>≤5%</td><td>≤9%</td><td>0603≥0.1uF; 0805≥0.47uF; 1206≥4.7uF;</td></tr>
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1210≥10uF; 1812≥47uF</td></tr>
<tr><td>6.3V</td><td>≤16%</td><td colspan="2"></td></tr>
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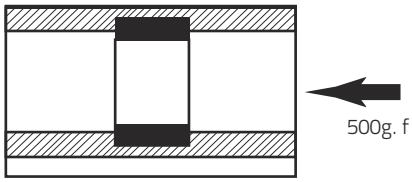
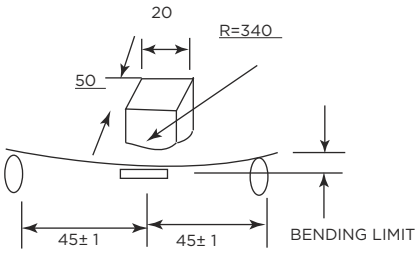
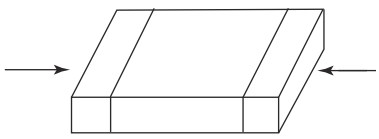
ENVIRONMENTAL CHARACTERISTICS

NO	ITEM		PERFORMANCE		TEST CONDITION	
7	CAPACITANCE TEMPERATURE COEFFICIENT	CLASS I	CHARACTERISTIC	TEMP. COEFFICIENT (PPM/°C)	THESE SYMMETRICAL TOLERANCE APPLY TO 2 POINT MEASUREMENT OF TEMPERATURE COEFFICIENT: ONE AT -25°C AND AT 85°C	
			COG/C0G	0 ± 60 (±30)	STEP	TEMPERATURE (°C)
				-150 ± 60	1	25 ± 2
				-220 ± 60	2	MIN RATED TEMP ± 2
				-330 ± 60	3	25 ± 2
				-470 ± 60	4	MAX RATED TEMP ± 2
				-750 ± 120	5	25 ± 2
				+350 ~ -1000		

NO	ITEM		PERFORMANCE			TEST CONDITION		
8	TEMPERATURE CHARACTERISTICS	CLASS II	CAPACITANCE CHANGE			STEP	TEMP. (°C) B	TEMP. (°C) F
			CHAR.		CAP. CHANGE (%)	1	25 ± 2	25 ± 2
			X	X7R	±15%	2	-55 ± 2	-25 ± 2
				X6S	±22%	3	25 ± 2	25 ± 2
				X5R	±15%	4	125 ± 2	85 ± 2
			Y	Y5V	-82% ~ +22%	5	25 ± 2	25 ± 2
				Z5U	-56% ~ +22%	$\frac{C2 - C1}{C1}$ X 100%		
						C1: CAPACITANCE AT STANDARD TEMPERATURE (25°C) C2: CAPACITANCE AT EACH TEMPERATURE		
9	ADHESIVE STRENGTH OF TERMINATION		NO INDICATION OF PEELING SHALL OCCUR ON THE TERMINAL ELECTRODE			A 500g.f PRESSURE SHALL BE APPLIED FOR 10±1 SECOND 		
10	BENDING STRENGTH	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCURE			BENDING SHALL BE APPLIED TO THE LIMIT (1mm) WITH 0.3mm/SEC 		
		CAPACITANCE	CHARACTER	CHANGE OF CAPACITANCE				
			CLASS I		WITHIN ±5% OR ±0.5pF WHICHEVER IS LARGER			
			CLASS II	X (X7R, X6S, X5R)	WITHIN ±12.5%			
				Y (Y5V,Z5U)	WITHIN ±30%			
11	SOLDERABILITY		MORE THAN 75% OF THE TERMINAL SURFACE IS TO BE SOLDERED NEWLY, SO METAL PART (A) DOES NOT COME OUT OR DISSOLVE 			SOLDER TEMPERATURE: 245 ± 5 °C SOLDER: Sn_Ag3_0.5Cu FLUX: RMA Type PRE-HEATING: AT 80 ~ 120 °C FOR 10 ~ 30 SEC.		

ENVIRONMENTAL CHARACTERISTICS

NO	ITEM		PERFORMANCE			TEST CONDITION
12	RESISTANCE TO SOLDERING HEAT	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR			DIP : SOLDER TEMPERATURE OF 270± 5 ˚C DIP TIME :10±1 SEC. EACH TERMINATION SHALL BE FULLY IMMERSED AND PREHEATED AS FOLLOWING: STEP / TEMP. (˚C) / TIME (SEC.) 1 / 80-100 / 60 2 / 150-180 / 60 MEASURE AT ROOM TEMP. AFTER COOLING FOR CLASS I : 24 ± 2 HOURS CLASS II : 48 ± 4 HOURS
		CAPACITANCE	CHARACTERISTIC		CAP. CHANGE	
			CLASSS I		WITHIN ±2.5% OR ±0.25 pF WHICHEVER IS LARGER	
			CLASS II	X	WITHIN ±7.5%	
				Y	WITHIN ±20%	
		QCLASS I	30 pF AND OVER: Q 1000 LESS THAN 30 pF: Q 400 + 20xC			
		Tan CLASS II	TO SATISFY THE SPECIFIED INITIAL VALUE			
		INSULATION RESISTANCE	TO SATISFY THE SPECIFIED INITIAL VALUE			
		WITHSTANDING VOLTAGE	TO SATISFY THE SPECIFIED INITIAL VALUE			
13	VIBRATION TEST	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR			THE CAPACITOR SHALL BE SUBJECTED TO A HARMONIC MOTION HAVING A TOTAL AMPLITUDE of 1.5mm THE ENTIRE FREQUENCY RANGE, FROM 10 TO 55Hz AND RETURN TO 10Hz SHALL BE TRAVERSED IN 1 MINUTE. THIS CYCLE SHALL BE PERFORMED 2 HOURS IN EACH THREE MUTUALLY PERPENDICULAR DIRECTION, FOR TOTAL PERIOD of 6 HOURS.
		CAPACITANCE	CHARACTERISTIC		CAP. CHANGE	
			CLASSS I		WITHIN ±2.5% OR ±0.25 pF WHICHEVER IS LARGER	
			CLASS II	X	WITHIN ±5%	
				Y	WITHIN ±20%	
		QCLASS I	30 pF AND OVER: Q 1000 LESS THAN 30 pF: Q 400 + 20xC			
		Tan CLASS II	TO SATISFY THE SPECIFIED INITIAL VALUE			
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ENVIRONMENTAL CHARACTERISTICS

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<tr><th>NO</th><th colspan="2">ITEM</th><th colspan="4">PERFORMANCE</th><th>TEST CONDITION</th></tr>
<tr><td rowspan="11">14</td><td rowspan="11">HUMIDITY (STEADY STATE)</td><td>APPEARANCE</td><td colspan="4">NO MECHANICAL DAMAGE SHALL OCCUR</td><td rowspan="11">TEMPERATURE : 40±2 °C
RELATIVE HUMIDITY: 90-95 %RH
TEST TIME : 500 +12/-0 Hr.

MEASURE AT ROOM TEMPERATURE
AFTER COOLING FOR
CLASS I : 24±2 Hr.
CLASS II : 48±4 Hr.

SEE (FIG.3)</td></tr>
<tr><td rowspan="3">CAPACITANCE</td><td colspan="2">CHARACTERISTIC</td><td colspan="2">CAPACITANCE CHANGE</td></tr>
<tr><td colspan="2">CLASS I</td><td colspan="2">WITHIN ±5% OR±0.5pF WHICHEVER IS LARGER</td></tr>
<tr><td rowspan="2">CLASS II</td><td>X</td><td colspan="2">WITHIN ±12.5%</td></tr>
<tr><td>Y</td><td colspan="2">WITHIN ±30%</td></tr>
<tr><td>QCLASS I</td><td colspan="4">30pF AND OVER : Q 350
10 - 30pF : Q 275 + 2.5xC
LESS THAN 10pF : Q 200 + 10xC</td></tr>
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1,000M OR 50M μF PRODUCT WHICHEVER IS SMALLER</td></tr>
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ENVIRONMENTAL CHARACTERISTICS

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<tr><th>NO</th><th colspan="2">ITEM</th><th colspan="4">PERFORMANCE</th><th>TEST CONDITION</th></tr>
<tr><td rowspan="11">15</td><td rowspan="11">MOISTURE RESISTANCE</td><td>APPEARANCE</td><td colspan="4">NO MECHANICAL DAMAGE SHALL OCCUR</td><td rowspan="11">APPLIED VOLTAGE:
RATED VOLTAGE
TEMPERATURE : 40±2 ˚C
RELATIVE HUMIDITY: 90-95%RH
TEST TIME : 500 +12/-0 Hr.
CURRENT APPLIED: 50mA MAX.

MEASURING AT ROOM TEMPERATURE
AFTER COOLING FOR
CLASS I : 24±2 Hr.
CLASS II : 48±4 Hr.

SEE (FIG.3)</td></tr>
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<tr><td colspan="2">CLASS I</td><td colspan="2">WITHIN ±7.5% OR±0.75pF WHICHEVER IS LARGER</td></tr>
<tr><td rowspan="2">CLASS II</td><td>X</td><td colspan="2">WITHIN ±12.5%</td></tr>
<tr><td>Y</td><td colspan="2">WITHIN ±30%</td></tr>
<tr><td>QCLASS I</td><td colspan="4">30pF AND OVER : Q 200
30pF AND BELOW : Q 100 + 10/3xC</td></tr>
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ENVIRONMENTAL CHARACTERISTICS

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<tr><td rowspan="11">16</td><td rowspan="11">HIGH TEMERATURE RESISTANCE</td><td>APPEARANCE</td><td colspan="4">NO MECHANICAL DAMAGE SHALL OCCUR</td><td colspan="3" rowspan="3">APPLIED VOLTAGE:
200% OF RATED VOLTAGE
TEST TIME : 1000 +48/-0 Hr.
CURRENT APPLIED: 5OmA MAX.</td></tr>
<tr><td rowspan="3">CAPACITANCE</td><td colspan="2">CHARACTERISTIC</td><td colspan="2">CAP. CHANGE</td></tr>
<tr><td colspan="2">CLASS I</td><td colspan="2">WITHIN ±3% OR
±0.3pF, WHICHEVER IS
LARGER</td></tr>
<tr><td rowspan="2">CLASS II</td><td>X</td><td colspan="2">WITHIN ±12.5%</td><td>CHAR.</td><td>TEMP.</td></tr>
<tr><td>Y</td><td colspan="2">WITHIN ±30%</td><td>CLASS I</td><td>125 ±3 °C</td></tr>
<tr><td>QCLASS I</td><td colspan="4">30pF AND OVER : Q 350
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<tr><td colspan="4"></td><td>Y</td><td>85 ±3 °C</td></tr>
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</td><td colspan="3" rowspan="2">(INITIAL VALUE MEASUREMENT)
FOR CLASS II CAPACITORS, 200 %
OF RATED VOLTAGE SHALL BE
APPLIED FOR 1 HOUR AT THE
MAXIMUM OPERATING TEMPERATURE,
THEN KEEP IT AT ROOM
TEMPERATURE FOR 48 ±4 HRS.

SEE (FIG.3)</td></tr>
<tr><td>INSULATION RESISTANCE</td><td colspan="4">MINIMUM INSULATION RESISTANCE:
1,000M OR 50M μF PRODUCT WHICHEVER IS SMALLER</td></tr>
</table>

ENVIRONMENTAL CHARACTERISTICS

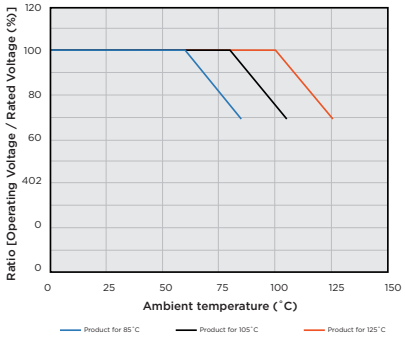
<table>
<tr><th>NO</th><th colspan="2">ITEM</th><th colspan="4">PERFORMANCE</th><th>TEST CONDITION</th></tr>
<tr><td rowspan="11">17</td><td rowspan="11">TEMPERATURE CYCLE</td><td>APPEARANCE</td><td colspan="4">NO MECHANICAL DAMAGE SHALL OCCUR</td><td rowspan="3">CAPACITORS SHALL BE SUBJECTED TO FIVE CYCLES OF THE TEMPERATURE CYCLE AS FOLLOWING
STEP | TEMP.(˚C) | TIME (MIN)
1 | MIN. RATED TEMP. +0/-3 | 30
2 | 25 | 2 - 3
3 | MAX. RATED TEMP. +3/-0 | 30
4 | 25 | 2 - 3</td></tr>
<tr><td rowspan="3">CAPACITANCE</td><td colspan="2">CHARACTERISTIC</td><td colspan="2">CAP. CHANGE</td></tr>
<tr><td colspan="2">CLASS I</td><td colspan="2">WITHIN ±2.5% OR ±0.25pF WHICHEVER IS LARGER</td></tr>
<tr><td rowspan="2">CLASS II</td><td>X</td><td colspan="2">WITHIN ±7.5%</td></tr>
<tr><td>Y</td><td colspan="2">WITHIN ±20%</td></tr>
<tr><td>QCLASS I</td><td colspan="4">30 pF AND OVER : Q 1000
LESS THAN 3OpF:Q 400 +20xC</td><td rowspan="7">MEASURE AT ROOM TEMPERATURE AFTER COOLING FOR
CLASS I : 24±2 Hr.
CLASS II : 48±4 Hr.
SEE(FIG.3)</td></tr>
<tr><td rowspan="6">TAN CLASS II</td><td colspan="4">X7R, X6S, X5R
Rated Voltage | D.F. | Exception of D.F.
≥50V | ≤2.5% | ≤3% | 0201 (50V); 0603≥0.047uF 0805≥0.22uF; 1206≥0.47uF
≤5% | 0603≥1uF; 0805≥1uF; 1206≥4.7uF; 1210≥4.7uF
25V | ≤2.5% | ≤5% | 0201≥0.01uF; 0805≥1uF; 1210≥4.7uF
≤10% | 0402≥0.10uF; 0603≥0.33uF; 0805≥2.2uF 1206≥4.7uF; 1210≥22uF
16V | ≤3.5% | ≤5% | 0201≥0.01uF; 0402≥0.033uF; 0805≥0.68uF; 1206≥2.2uF; 1210≥4.7uF
≤10% | 0402≥0.47uF; 0603≥0.68uF; 0805≥2.2uF; 1206≥4.7uF; 1210≥22uF
10V | ≤5% | ≤10% | 0402≥0.33uF; 0603≥0.33uF; 0805≥2.2uF; 1206≥2.2uF; 1210≥22uF
6.3V | ≤10%</td></tr>
<tr><td colspan="4">Y5V, Z5U
Rated Voltage | D.F. | Exception of D.F.
≥50V | ≤5% | ≤9% | 0603≥0.1uF; 0805≥0.47uF; 1206≥4.7uF;
25V | ≤5% | ≤9% | 0402≥0.047uF; 0603≥0.1uF; 0805≥0.33uF; 1206≥1uF; 1210≥4.7uF
16V | ≤9% | ≤12.5% | 0603≥2.2uF; 0805≥3.3uF; 1206≥10uF; 1210≥22uF; 1812≥47uF
10V | ≤12.5% | ≤16% | 0603≥2.2uF; 0805≥3.3uF; 1206≥4.7uF; 1210≥10uF; 1812≥47uF
6.3V | ≤16%</td></tr>
<tr><td>INSULATION RESISTANCE</td><td colspan="4">TO SATISFY THE SPECIFIED INITIAL VALUE</td></tr>
</table>

ENVIRONMENTAL CHARACTERISTICS

<table>
<tr><th>NO</th><th>ITEM</th><th>TEST CONDITION</th><th>REQUIREMENTS</th></tr>
<tr><td>18</td><td>HIGH TEMPERATURE Load-Endurance (Life Testing)</td><td>
*Test Temperature:
C0G, X7R/X7S: 125±3˚C
X5R, Y5V: 85±3˚C
Test time: 1000+24/-0 hrs.
Endurance or Life Test Voltage (RVLL)
* All components are tested at 100% of rated voltage (Vr) for the below range:
<table>
<tr><th>SIZE</th><th>DIELECTRIC</th><th>RATED VOLTAGE</th><th>CAPACITANCE</th></tr>
<tr><td rowspan="2">0201</td><td rowspan="2">X5R/X7R/X6S</td><td>≤10V</td><td>C≥0.1μF</td></tr>
<tr><td>≥16V</td><td>C>0.1μF</td></tr>
<tr><td rowspan="6">0402</td><td rowspan="2">X5R</td><td>≤16V</td><td>C>0.1μF</td></tr>
<tr><td>25V, 50V</td><td>C≥0.1μF</td></tr>
<tr><td rowspan="2">X6S</td><td>6,3V, 10V</td><td>C>0.1μF</td></tr>
<tr><td>16V, 25V</td><td>C≥0.1μF</td></tr>
<tr><td rowspan="2">X7R/X7S/Y5V</td><td>25V</td><td>C≥0.1μF</td></tr>
<tr><td>35V</td><td>C≥0.1μF</td></tr>
<tr><td rowspan="4">0603</td><td rowspan="2">X5R/X7R/ X6S/X7S</td><td>4V</td><td>C≥22μF</td></tr>
<tr><td>6.3V, 10V</td><td>C≥4.7μF</td></tr>
<tr><td>X5R/X7R/X6S</td><td>25V</td><td>C≥0.1μF</td></tr>
<tr><td>X7R</td><td>35V</td><td>C≥0.1μF</td></tr>
<tr><td rowspan="5">0805</td><td rowspan="3">X5R/X7R/ X6S/X7S</td><td>4V</td><td>C≥47μF</td></tr>
<tr><td>6.3V</td><td>C≥22μF</td></tr>
<tr><td>10V, 50V</td><td>C≥10μF</td></tr>
<tr><td>X7R/X6S</td><td rowspan="2">16V, 25V</td><td>C≥10μF</td></tr>
<tr><td>X5R</td><td>C≥22μF</td></tr>
<tr><td>1206</td><td>X5R/X7R/X6S</td><td>≤6.3V</td><td>C≥47μF</td></tr>
<tr><td rowspan="2">1210</td><td>X5R/X7R/X6S</td><td>16V</td><td>C≥47μF</td></tr>
<tr><td>X7R</td><td>100V</td><td>C≥43.3μF</td></tr>
</table>
*Any items outside this range or with a different dielectric will hold the following test conditions:
(1) ≤ 6.3V or C ≥ 10μF : 150% of rated voltage.
(2) 10V ≤ Vr ≤ 100V: 200% of rated voltage.
</td><td>
• No remarkable damage.
CAP CHANGE:
C0G: ±3.0% or ±0.3pF whichever Is larger
X7R, X5R, X6S, X7S: ≥10V**, within ±12.5%; ≤6.3V within ±25%;
**10V: 0603≥4.7μF; 0402≥1.0μF; 0201≥0.1μF, within ±25%
Y5V≥10V, within ±30%; ≤6.3V, within +30/-40%
Q/D.F. VALUE:
C0G: More than 30pF, Q≥350
10pF≤30pF, Q≥275+2.5C
Less than 10pF, Q≥200+10C
X7R, XSR, X6S, X7S:
<table>
<tr><th>RATED VOLTAGE</th><th>D.F.</th><th colspan="2">EXCEPTIONS OF D.F. ≤</th></tr>
<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>2.2μF; 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≥1.0μF (0805/ X7R>0.47μF); 1206≥2.2μF; 1210≥10μF</td></tr>
<tr><td>35V</td><td>≤5%</td><td>≤20%</td><td>0603≥1.0μF; 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≥1.0μF; 1210≥10μF</td></tr>
<tr><td>≤14%</td><td>0603≥0.33μF</td></tr>
<tr><td>≤15%</td><td>0201>0.01μF; 0402>0.10μF (0402/X7R≥0.056μF); 0603≥0.47μF; 0805≥2.2μF; 1206≥0.47μF; 1210≥22μF (1210/X5R≥10μF)</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≥0.01μF (0201/X7R≥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≥0.22μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥22μF</td></tr>
<tr><td>≤20%</td><td>0201≥0.01μF; 0402≥1.0μF; 0603/X5R≥10μF; 01R5/x5R</td></tr>
<tr><td>6.3V</td><td>≤15%</td><td>≤30%</td><td>0201≥0.01μF; 0402≥1.0μF (0402/X6S≥0.47μF); 0603≥10μF; 0805≥4.7μF; 1206≥47μF; 1210≥100μF</td></tr>
<tr><td>4V</td><td>≤20%</td><td>-</td><td>-</td></tr>
</table>
</td></tr>
</table>

ENVIRONMENTAL CHARACTERISTICS

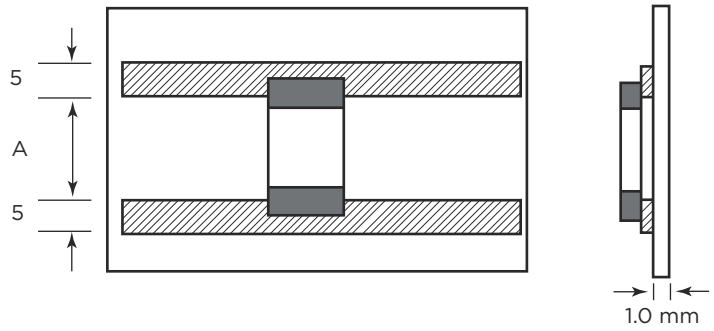
<table>
<tr><th>NO</th><th>ITEM</th><th>TEST CONDITION</th><th>REQUIREMENTS</th></tr>
<tr><td>18</td><td>HIGH TEMPERATURE Load-Endurance (Life Testing)</td><td>
(3) 150% of rated voltage for below range.
<table>
<tr><th>SIZE</th><th>DIELECTRIC</th><th>RATED VOLTAGE</th><th>CAPACITANCE</th></tr>
<tr><td rowspan="2">0201</td><td>X5R/X6S</td><td>16V, 25V</td><td>C=0.1μF</td></tr>
<tr><td>X7R</td><td>16V</td><td>C≥0.022μF</td></tr>
<tr><td rowspan="3">0402</td><td rowspan="2">X7R/X5R/X6S</td><td>50V</td><td>C≥0.01μF</td></tr>
<tr><td>10-25V</td><td>C≥0.22μF</td></tr>
<tr><td>Y5V</td><td>16V</td><td>C≥0.47μF</td></tr>
<tr><td rowspan="5">0603</td><td rowspan="2">X7S</td><td>50-100V</td><td>C>0.22μF</td></tr>
<tr><td>50V</td><td>C>0.1μF</td></tr>
<tr><td>X7R</td><td>25V</td><td>C=1.0μF</td></tr>
<tr><td>X5R</td><td>50V</td><td>C≥1.0μF</td></tr>
<tr><td>X5R/X7R/ X6S/X7S</td><td>10V, 16V</td><td>C≥1.0μF</td></tr>
<tr><td>Y5V</td><td>16V</td><td>C≥2.2μF</td></tr>
<tr><td rowspan="5">0805</td><td rowspan="4">X5R/X7R/ X6S/X7S</td><td>100V</td><td>C≥0.47μF</td></tr>
<tr><td>50V</td><td>C≥0.68μF</td></tr>
<tr><td>35V</td><td>C≥2.2μF</td></tr>
<tr><td>10-25V</td><td>C≥4.7μF</td></tr>
<tr><td>Y5V</td><td>16V</td><td>C≥4.7μF</td></tr>
<tr><td rowspan="4">1206</td><td rowspan="2">X7R</td><td>100V</td><td>C≥1.0μF</td></tr>
<tr><td>50V</td><td>C=4.7μF</td></tr>
<tr><td rowspan="2">X5R/X6S/X7S</td><td>100V</td><td>C>1.0μF</td></tr>
<tr><td>50V</td><td>C=4.7μF</td></tr>
<tr><td>1210</td><td>X5R/X7R/ X6S/X7S</td><td>50~100V</td><td>C≥2.2μF</td></tr>
<tr><td>1825
2220
2225</td><td>X7R</td><td>100-250V</td><td>C≥1.0μF</td></tr>
</table>
* Before initial measurement (Class II only):
To apply de-aging at 150˚C for 1 hr then set for 24±2 hrs at room temp
* Cap./DF(Q)/I.R. Measurement to be made after de-aging at 150˚C for 1hr then set for 24±2hrs at room temp.
** De-rating conditions:

DERATING CURVE


</td><td>
• No remarkable damage.
CAP CHANGE:
C0G: ±3.0% or ±0.3pF whichever Is larger
X7R, X5R, X6S, X7S: ≥10V**, within ±12.5%; ≤6.3V within ±25%;
**10V: 0603≥4.7μF; 0402≥1.0μF; 0201≥0.1μF, within ±25%
Y5V≥10V, within ±30%; ≤6.3V, within +30/-40%
Q/D.F. VALUE:
C0G: More than 30pF, Q≥350
10pF≤30pF, Q≥275+2.5C
Less than 10pF, Q≥200+10C

Y5V:
<table>
<tr><th>RATED VOLTAGE</th><th>D.F.</th><th colspan="2">EXCEPTIONS OF D.F. ≤</th></tr>
<tr><td rowspan="2">≥0V</td><td rowspan="2">≤7.5%</td><td>≤10%</td><td>0603≥0.1μF; 0805≥0.47μF; 1206≥4.7μF</td></tr>
<tr><td>≤20%</td><td>1210≥6.8μF</td></tr>
<tr><td>35V</td><td>≤10%</td><td>-</td><td>-</td></tr>
<tr><td rowspan="2">25V</td><td rowspan="2">≤7.5%</td><td>≤10%</td><td>0402≥0.047μF; 0603≥0.1μF; 0805≥0.33μF; 1206≥1.0μF; 1210≥4.7μF</td></tr>
<tr><td>≤15%</td><td>0402≥0.068μF; 0603≥0.47μF; 1206≥4.7μF; 1210≥22μF</td></tr>
<tr><td rowspan="2">16V (C<1.0μF)</td><td rowspan="2">≤10%</td><td>≤12.5%</td><td>0402≥0.068μF; 0603≥0.68μF</td></tr>
<tr><td>≤20%</td><td>0402≥0.22μF</td></tr>
<tr><td>16V (C≥1.0μF)</td><td>≤12.5%</td><td>≤20%</td><td>0603≥2.2μF; 0805≥3.3μF; 1206≥10μF; 1210≥22μF; 1812≥47μF</td></tr>
<tr><td>10V</td><td>≤20%</td><td>≤30%</td><td>0402≥0.47μF</td></tr>
<tr><td>6.3V</td><td>≤30%</td><td>-</td><td>-</td></tr>
</table>
*I.R.: ≥10V, 1GΩ or 50Ω-F whichever Is smaller.
Class II (X7R, X5R, X6S, X7S, Y5V)
<table>
<tr><th>RATED VOLTAGE</th><th>INSULATION RESISTANCE</th></tr>
<tr><td>100V: All X7R; 1210≥3.3μF</td><td rowspan="7">1GΩ or apply ≥10Ω-F rule, whichever is smaller.</td></tr>
<tr><td>50V: 0402>0.01μF; 0603≥1.0μF; 0805≥1.0μF; 1206≥4.7μF; 1210≥4.7μF</td></tr>
<tr><td>35V: 0603≥1.0μF; 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≥1.0μF; 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 : All X6S/X7S items, Size≥1812</td></tr>
</table>
</td></tr>
</table>

ADHESIVE STRENGTH OF TERMINATION

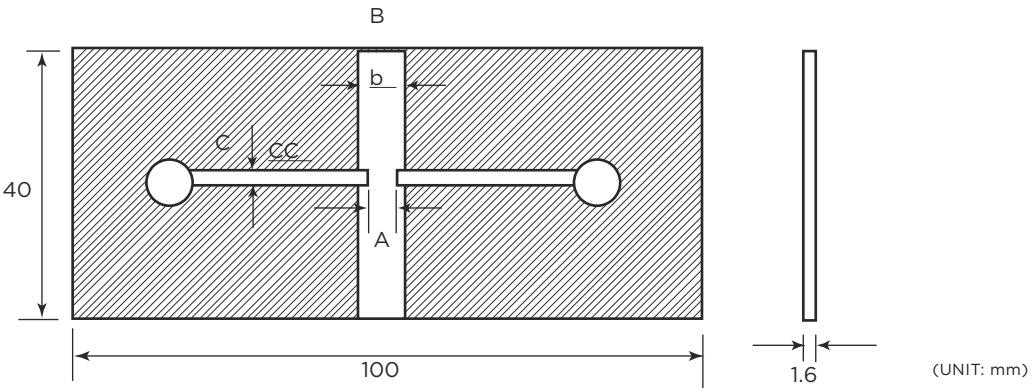


CODE	DIMENSION (mm)	A (mm)	CODE	DIMENSION (mm)	A (mm)
01005 (0402)	0.40 x 0.20	0.12	1206 (3216)	3.2 x 1.6	2.2
0201 (0603)	0.61 x 0.31	0.2	1210 (3225)	3.2 x 2.5	2.2
0402 (1005)	1.0 x 0.5	0.4	1812 (4532)	4.5 x 3.2	3.5
0603 (1608)	1.6 x 0.8	1.0	2220 (5750)	5.7 x 5.08	4.7
0805 (2012)	2.0 x 1.25	1.2			

Material: Alumina Substrate (Al203 95% Min) or Glass Epoxy Substrate

Copper Foil (T = 0.035mm)

SUBSTRATE BENDING STRENGTH

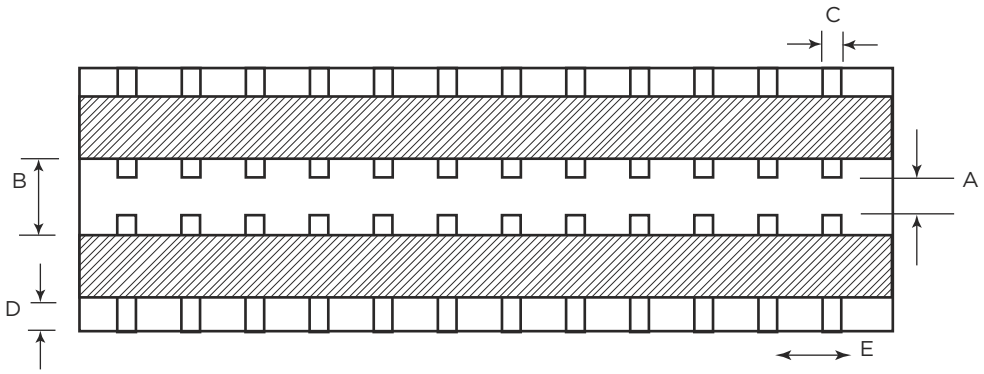


(UNIT: mm)

CODE	DIMENSION (mm)	A (mm)	B (mm)	C (mm)
01005 (0402)	0.40 x 0.20	0.12	0.7	0.20
0201 (0603)	0.61 x 0.31	0.2	1.0	0.4
0402 (1005)	1.0 x 0.5	0.4	1.4	0.5
0603 (1608)	1.6 x 0.8	1.0	3.0	1.0
0805 (2012)	2.0 x 1.25	1.2	4.0	1.65
1206 (3216)	3.2 x 1.6	2.2	5.0	2.0
1210 (3225)	3.2 x 2.5	2.2	5.0	3.2
1812 (4532)	4.5 x 3.2	3.5	7.0	4.0
2220 (5750)	5.7 x 5.08	4.7	8.5	5.0

MATERIAL: GLASS EPOXY SUBSTRATE COPPER FOIL (t = 0.035mm) SOLDER RESIST

TEST SUBSTRATE



(UNIT: mm)

CODE	DIMENSION (MM)	A	B	C	D	E
0201 (0603)	0.61 x 0.31	0.2	1.0	0.4	7.5	3.6
0402 (1005)	1.0 x 0.5	0.4	1.4	0.5	7.5	3.8
0603 (1608)	1.6 x 0.8	1.0	3.0	0.7	7.5	4.0
0805 (2012)	2.0 x 1.25	1.2	4.0	1.0	7.5	4.2
1206 (3216)	3.2 x 1.6	2.2	5.0	1.3	7.5	4.6
1210 (3225)	3.2 x 2.5	2.2	5.0	2.0	7.5	5.5
1812 (4532)	4.5 x 3.2	3.5	7.0	2.7	7.5	6.2
2220 (5750)	5.7 x 5.08	4.7	8.5	3.4	7.5	7.0

MATERIAL: GLASS EPOXY SUBSTRATE COPPER FOIL (t = 0.035mm) SOLDER RESIST

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