



### FEATURES:

- Capacitance range: 0.5pF to 2.2uF
- Voltage range: 200V to 5000V
- Ceramic monolithic structure provides excellent reliability
- High-speed automated placement capabilities

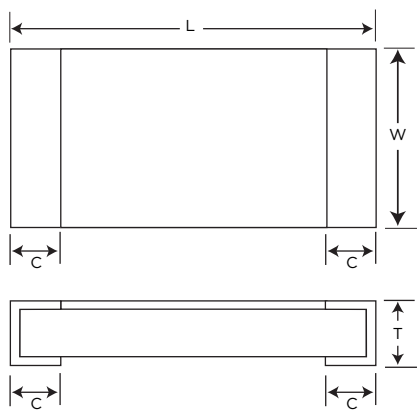


### PART NUMBER STRUCTURE

C	1808	X7R	202	—	102	K	N	E
<b>Ceramic Capacitor</b>	<b>Size</b>	<b>Temperature Characteristic</b>	<b>Rated Voltage</b>		<b>Capacitance</b>	<b>Tolerance</b>	<b>Termination</b>	<b>Packaging</b>
	0603 0805 1206 1210 1808 1812 1825 2220 2225	(Dielectric) COG X7R	1st two digits are significant followed by number of zeroes. 201 = 200V 251 = 250V 501 = 500V 601 = 600V 631 = 630V 102 = 1000V 202 = 2000V 302 = 3000V 402 = 4000V 502 = 5000V		(picofarads) 1st two digits are significant, followed by number of zeroes. R denotes decimal <b>e.g:</b> 101 = 100pF R denotes decimal 6R8 = 6.8pF	*C = ± 0.25pF *D = ± 0.50pF F = ± 1% G = ± 2% J = ± 5% K = ± 10% M = ± 20% N = ± 30% * For values below 10pF only.	N = 100% matte Tin (Sn) over nickel. P = Palladium Silver S = Arc Prevention Coating	E = Embossed Tape
<b>Example P/N:</b> C1808X7R202-102KNE								
Standard termination finish is 100% matte Tin (Sn).								

### DIMENSIONS

Unit: inch (mm)

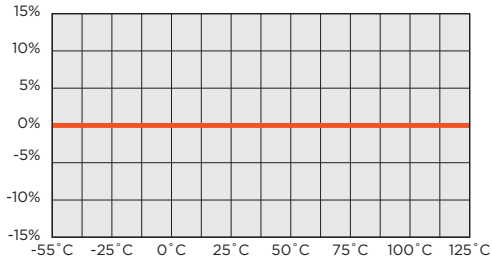


SIZE	L	W	T	E/B
0603	0.063 ± 0.0078 (1.60 ± 0.20)	0.0315 ± 0.0078 (0.80 ± 0.20)	See Specific Value	0.0158 ± 0.006 (0.40 ± 0.15)
0805	0.079 ± 0.0078 (2.00 ± 0.20)	0.05 ± 0.0078 (1.25 ± 0.20)	See Specific Value	0.020 ± 0.0078 (0.50 ± 0.20)
1206	0.130 ± 0.012 (3.30 ± 0.30)	0.063 ± 0.0078 (1.60 ± 0.20)	See Specific Value	0.0236 ± 0.0078 (0.60 ± 0.20)
1210	0.130 ± 0.0158 (3.30 ± 0.40)	0.0985 ± 0.012 (2.50 ± 0.30)	See Specific Value	0.0295 ± 0.0138 (0.75 ± 0.35)
1808	0.177 ± 0.0158 (4.50 ± 0.40)	0.080 ± 0.0098 (2.03 ± 0.25)	See Specific Value	0.0295 ± 0.0138 (0.75 ± 0.35)
1812	0.177 ± 0.0158 (4.50 ± 0.40)	0.126 ± 0.0158 (3.20 ± 0.40)	See Specific Value	0.0295 ± 0.0138 (0.75 ± 0.35)
1825	0.177 ± 0.0158 (4.50 ± 0.40)	0.252 ± 0.0158 (6.40 ± 0.40)	See Specific Value	0.0295 ± 0.0138 (0.75 ± 0.35)
2220	0.225 ± 0.0158 (5.70 ± 0.40)	0.197 ± 0.0158 (5.00 ± 0.40)	See Specific Value	0.0335 ± 0.0138 (0.85 ± 0.35)
2225	0.225 ± 0.0158 (5.70 ± 0.40)	0.248 ± 0.0158 (6.30 ± 0.40)	See Specific Value	0.0335 ± 0.0138 (0.85 ± 0.35)

### ELECTRICAL SPECIFICATION

#### COG (NP0)

Typical Capacitance Change vs. Temperature



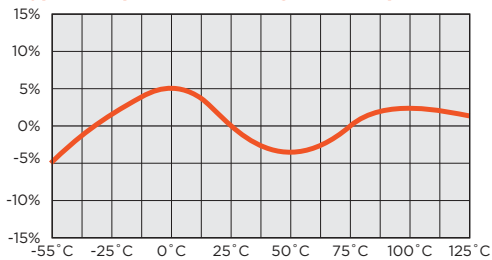
Operating Temperature Range:  
-55°C to +125°C  
Temperature Coefficient:  
0 ±30PPM/°C  
Temperature Voltage Coefficient:  
0 ±30PPM/°C  
Insulation Resistance:  
>100 Ω-F or 10 GΩ, whichever is less at 25°C, WDCV.  
(The IR at 125°C is 10% of the value at 25°C)  
Withstanding Voltage:  
See below  
Capacitance Tolerance:  
C, D, F, G, J, K

Dielectric Strength is equal to 1.5 times rated voltage (WVDC) for 500 volt capacitors and 1.2 times (WVDC) for 1,000 through 5,000 volt capacitors.

Circuit applications in excess of 1,000 volts may require a surface coating to prevent external arcing.

#### 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 ohms F or 10 G ohms, whichever is less at 25°C, WDCV.  
(The IR at 125°C is 10% of the value at 25°C)  
Withstanding Voltage:  
See below  
D.F. Specification:  
≥50V, ≤2.5%  
Capacitance Tolerance:  
J,K,M,N

### TEST PARAMETERS

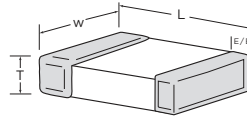
Test parameters for Multilayer Ceramic Capacitors - X7R: 1KHz ± 50Hz at 1.0 ± 0.2 Vrms, 25°C

Test parameters for Multilayer Ceramic Capacitors - COG (NP0): 1MHz ± 50KHz at 1.0 ± 0.2 Vrms ≤ 1000pF, 25°C  
1KHz ± 50Hz 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.

### VOLTAGE AND CAPACITANCE RANGE

#### COG (NPO) DIELECTRIC



Values that are typically available.

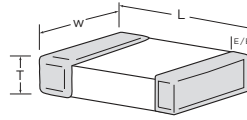
All measurements in inches (mm)

SIZE	0603		0805			1206					1210				
	L	0.063 ± 0.0078 (1.60 ± 0.20)	0.083 ± 0.0078 (2.10 ± 0.20)			0.130 ± 0.012 (3.30 ± 0.30)					0.130 ± 0.0158 (3.30 ± 0.40)				
W	0.0315 ± 0.0078 (0.8 ± 0.20)		0.05 ± 0.0078 (1.25 ± 0.20)			0.063 ± 0.0078 (1.60 ± 0.20)					0.0985 ± 0.012 (2.50 ± 0.30)				
T (max)	0.0394 (1.0)		0.057 (1.45)			0.075 (1.90)					0.110 (2.80)				
E/B	0.0158 ± 0.006 (0.40 ± 0.15)		0.020 ± 0.0078 (0.50 ± 0.20)			0.0236 ± 0.0078 (0.60 ± 0.20)					0.0295 ± 0.0138 (0.75 ± 0.35)				
VDCW (MAX)	200V / 250V		200V / 250V	500V	600V / 630V	200V / 250V	500V	600V / 630V	1KV	2KV	3KV	200V / 250V	500V	600V / 630V	1KV
OR5	0.5pF														
1R0	1.0pF														
1R2	1.2pF														
1R5	1.5pF														
1R8	1.8pF														
2R0	2.0pF														
2R2	2.2pF														
2R7	2.7pF														
3R3	3.3pF														
3R9	3.9pF														
5R0	5.0pF														
8R2	8.2pF														
100	10pF														
120	12pF														
150	15pF														
180	18pF														
220	22pF														
270	27pF														
330	33pF														
390	39pF														
470	47pF														
560	56pF														
680	68pF														
820	82pF														
101	100pF														
121	120pF														
151	150pF														
181	180pF														
221	220pF														
271	270pF														
331	330pF														
391	390pF														
471	470pF														
561	560pF														
681	680pF														
821	820pF														
102	1000pF														
122	1200pF														
152	1500pF														
182	1800pF														
222	2200pF														
272	2700pF														
332	3300pF														
392	3900pF														
472	4700pF														
562	5600pF														
682	6800pF														
822	8200pF														
103	0.01uF														
123	0.012uF														
153	0.015uF														
183	0.018uF														
223	0.022uF														
273	0.027uF														

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

### VOLTAGE AND CAPACITANCE RANGE

#### COG (NPO) DIELECTRIC



Values that are typically available.

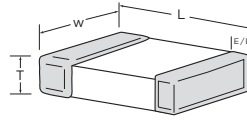
All measurements in inches (mm)

SIZE	1808						1812						1825			
	0.177 ± 0.0158 (4.50 ± 0.40)						0.177 ± 0.0158 (4.50 ± 0.40)						0.177 ± 0.0158 (4.50 ± 0.40)			
L	0.080 ± 0.0098 (2.03 ± 0.25)						0.126 ± 0.0158 (3.20 ± 0.40)						0.252 ± 0.0158 (6.40 ± 0.40)			
W	0.90 (2.28)						0.118 (3.0)						0.128 (3.25)			
T (max)	0.0295 ± 0.0138 (0.75 ± 0.35)						0.0295 ± 0.0138 (0.75 ± 0.35)						0.0295 ± 0.0138 (0.75 ± 0.35)			
E/B																
VDCW (MAX)	500V	600V / 630V	1KV	2KV	3KV	5KV	200V / 250V	500V	600V / 630V	1KV	2KV	3KV	200V / 250V	500V	600V / 630V	1KV
OR5	0.5pF															
1R0	1.0pF															
1R2	1.2pF															
1R5	1.5pF															
1R8	1.8pF															
2R0	2.0pF															
2R2	2.2pF															
2R7	2.7pF															
3R3	3.3pF															
3R9	3.9pF															
5R0	5.0pF															
8R2	8.2pF															
100	10pF															
120	12pF															
150	15pF															
180	18pF															
220	22pF															
270	27pF															
330	33pF															
390	39pF															
470	47pF															
560	56pF															
680	68pF															
820	82pF															
101	100pF															
121	120pF															
151	150pF															
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271	270pF															
331	330pF															
391	390pF															
471	470pF															
561	560pF															
681	680pF															
821	820pF															
102	1000pF															
122	1200pF															
152	1500pF															
182	1800pF															
222	2200pF															
272	2700pF															
332	3300pF															
392	3900pF															
472	4700pF															
562	5600pF															
682	6800pF															
822	8200pF															
103	0.01uF															
123	0.012uF															
153	0.015uF															
183	0.018uF															
223	0.022uF															
273	0.027uF															

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

### VOLTAGE AND CAPACITANCE RANGE

#### COG (NPO) DIELECTRIC



Values that are typically available.

All measurements in inches (mm)

SIZE		1808						1812						1825			
L		0.177 ± 0.0158 (4.50 ± 0.40)						0.177 ± 0.0158 (4.50 ± 0.40)						0.177 ± 0.0158 (4.50 ± 0.40)			
W		0.080 ± 0.0098 (2.03 ± 0.25)						0.126 ± 0.0158 (6.40 ± 0.40)						0.252 ± 0.0158 (5.00 ± 0.40)			
T (max)		0.90 (2.28)						0.118 (3.0)						.122 (3.10)			
E/B		0.0295 ± 0.0138 (0.75 ± 0.35)						0.0295 ± 0.0138 (0.75 ± 0.35)						0.0295 ± 0.0138 (0.75 ± 0.35)			
VDCW (MAX)		500V	600V / 630V	1KV	2KV	3KV	5KV	200V / 250V	500V	600V / 630V	1KV	2KV	3KV	200V / 250V	500V	600V / 630V	1KV
CAPACITANCE CODE	333	0.033uF															
	393	0.039uF															
	473	0.047uF															
	563	0.056uF															
	683	0.068uF															
	104	0.10uF															
124	0.12uF																

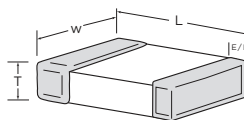
All measurements in inches (mm)

SIZE		2220					2225			
L		0.225 ± 0.0158 (5.70 ± 0.40)					0.225 ± 0.0158 (5.70 ± 0.40)			
W		0.197 ± 0.0158 (5.00 ± 0.40)					0.248 ± 0.0158 (6.30 ± 0.40)			
T (max)		0.128 (3.25)					0.145 (3.68)			
E/B		0.0335 ± 0.0138 (0.85 ± 0.35)					0.0335 ± 0.0138 (0.85 ± 0.35)			
VDCW (MAX)		200V / 250V	500V	600V / 630V	1KV	5KV	200V / 250V	500V	600V / 630V	1KV
CAPACITANCE CODE	OR5	0.5pF								
	1R0	1.0pF								
	1R2	1.2pF								
	1R5	1.5pF								
	1R8	1.8pF								
	2R0	2.0pF								
	2R2	2.2pF								
	2R7	2.7pF								
	3R3	3.3pF								
	3R9	3.9pF								
	5R0	5.0pF								
	8R2	8.2pF								
	100	10pF								
	120	12pF								
	150	15pF								
	180	18pF								
	220	22pF								
	270	27pF								
	330	33pF								
	390	39pF								
	470	47pF								
	560	56pF								
	680	68pF								
	820	82pF								
101	100pF									
121	120pF									
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181	180pF									
221	220pF									
271	270pF									
331	330pF									
391	390pF									
471	470pF									
561	560pF									
681	680pF									
821	820pF									

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### VOLTAGE AND CAPACITANCE RANGE

#### COG (NPO) DIELECTRIC



Values that are typically available.

All measurements in inches (mm)

SIZE		2220					2225			
L		0.225 ± 0.0158 (5.70 ± 0.40)					0.225 ± 0.0158 (5.70 ± 0.40)			
W		0.197 ± 0.0158 (5.00 ± 0.40)					0.248 ± 0.0158 (6.30 ± 0.40)			
T (max)		0.128 (3.25)					0.145 (3.68)			
E/B		0.0335 ± 0.0138 (0.85 ± 0.35)					0.0335 ± 0.0138 (0.85 ± 0.35)			
VDCW (MAX)		200V / 250V	500V	600V / 630V	1KV	5KV	200V / 250V	500V	600V / 630V	1KV
CAPACITANCE CODE	102	1000pF								
	122	1200pF								
	152	1500pF								
	182	1800pF								
	222	2200pF								
	272	2700pF								
	332	3300pF								
	392	3900pF								
	472	4700pF								
	562	5600pF								
	682	6800pF								
	822	8200pF								
	103	0.01uF								
	123	0.012uF								
	153	0.015uF								
	183	0.018uF								
	223	0.022uF								
	273	0.027uF								
333	0.033uF									
393	0.039uF									
473	0.047uF									
563	0.056uF									
683	0.068uF									
104	0.10uF									
124	0.12uF									

#### X7R DIELECTRIC

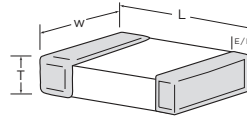
All measurements in inches (mm)

SIZE		0603		0805			1206				1210					
L		0.063 ± 0.0078 (1.60 ± 0.20)		0.079 ± 0.0078 (2.00 ± 0.20)			0.130 ± 0.012 (3.30 ± 0.30)				0.130 ± 0.0158 (3.30 ± 0.40)					
W		0.0315 ± 0.0078 (0.80 ± 0.20)		0.05 ± 0.0078 (1.27 ± 0.20)			0.063 ± 0.0078 (1.60 ± 0.20)				0.0985 ± 0.012 (2.50 ± 0.30)					
T (max)		0.0315 ± 0.0078 (0.80 ± 0.20)		0.057 (1.45)			0.063 ± 0.0078 (1.60 ± 0.20)				0.0985 ± 0.0197 (2.50 ± 0.50)					
E/B		0.0158 ± 0.006 (0.40 ± 0.15)		0.020 ± 0.0078 (0.50 ± 0.20)			0.0236 ± 0.0078 (0.60 ± 0.20)				0.0295 ± 0.0138 (0.75 ± 0.35)					
VDCW (MAX)		200V / 250V	200V / 250V	500V	600V / 630V	1KV	200V / 250V	500V	600V / 630V	1KV	2KV	200V / 250V	500V	600V / 630V	1KV	2KV
CAPACITANCE CODE	101	100pF														
	121	120pF														
	151	150pF														
	181	180pF														
	221	220pF														
	271	270pF														
	331	330pF														
	391	390pF														
	471	470pF														
	561	560pF														
	681	680pF														
	821	820pF														
	102	1000pF														
	122	1200pF														
152	1500pF															

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### VOLTAGE AND CAPACITANCE RANGE

#### X7R DIELECTRIC



Values that are typically available.

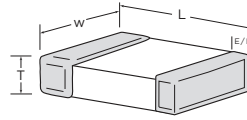
All measurements in inches (mm)

SIZE		0603				0805				1206				1210			
L		0.063 ± 0.0078 (1.60 ± 0.20)				0.079 ± 0.0078 (2.00 ± 0.20)				0.130 ± 0.012 (3.30 ± 0.30)				0.130 ± 0.0158 (3.30 ± 0.40)			
W		0.0315 ± 0.0078 (0.80 ± 0.20)				0.05 ± 0.0078 (1.27 ± 0.20)				0.063 ± 0.0078 (1.60 ± 0.20)				0.0985 ± 0.012 (2.50 ± 0.30)			
T (max)		0.0394 (1.0)				0.057 (1.45)				0.071 (1.80)				0.110 (2.80)			
E/B		0.0158 ± 0.006 (0.40 ± 0.15)				0.020 ± 0.0078 (0.50 ± 0.20)				0.0236 ± 0.0078 (0.60 ± 0.20)				0.0295 ± 0.0138 (0.75 ± 0.35)			
VDCW (MAX)		200V / 250V		200V / 250V	500V	600V / 630V	1KV	200V / 250V	500V	600V / 630V	1KV	2KV	200V / 250V	500V	600V / 630V	1KV	2KV
182	1800pF																
222	2200pF																
272	2700pF																
332	3300pF																
392	3900pF																
472	4700pF																
562	5600pF																
682	6800pF																
822	8200pF																
103	0.01uF																
123	0.012uF																
153	0.015uF																
183	0.018uF																
223	0.022uF																
273	0.027uF																
333	0.033uF																
393	0.039uF																
473	0.047uF																
563	0.056uF																
683	0.068uF																
104	0.10uF																
124	0.12uF																
154	0.15uF																
184	0.18uF																
224	0.22uF																
274	0.27uF																
334	0.33uF																
394	0.39uF																
474	0.47uF																
564	0.56uF																
684	0.68uF																
824	0.82uF																
105	1.0uF																
155	1.5uF																
225	2.2uF																

**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



Values that are typically available.

All measurements in inches (mm)

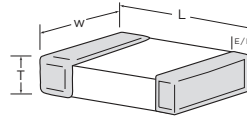
SIZE	1808						1812						1825			
	L						L						L			
L	0.177 ± 0.0158 (4.50 ± 0.40)						0.177 ± 0.0158 (4.50 ± 0.40)						0.177 ± 0.0158 (4.50 ± 0.40)			
W	0.080 ± 0.0098 (2.03 ± 0.25)						0.080 ± 0.0098 (2.03 ± 0.25)						0.252 ± 0.0158 (5.00 ± 0.40)			
T (max)	0.090 (2.28)						0.118 (3.0)						0.128 (3.25)			
E/B	0.0295 ± 0.0138 (0.75 ± 0.35)						0.0295 ± 0.0138 (0.75 ± 0.35)						0.0295 ± 0.0138 (0.75 ± 0.35)			
VDCW (MAX)	500V	600V / 630V	1KV	2KV	3KV	4KV	200V / 250V	500V	600V / 630V	1KV	2KV	3KV	200V / 250V	500V	1KV	2KV
101	100pF															
121	120pF															
151	150pF															
181	180pF															
221	220pF															
271	270pF															
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681	680pF															
821	820pF															
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272	2700pF															
332	3300pF															
392	3900pF															
472	4700pF															
562	5600pF															
682	6800pF															
822	8200pF															
103	0.01uF															
123	0.012uF															
153	0.015uF															
183	0.018uF															
223	0.022uF															
273	0.027uF															
333	0.033uF															
393	0.039uF															
473	0.047uF															
563	0.056uF															
683	0.068uF															
104	0.10uF															
124	0.12uF															
154	0.15uF															
184	0.18uF															
224	0.22uF															
274	0.27uF															
334	0.33uF															
394	0.39uF															
474	0.47uF															
564	0.56uF															
684	0.68uF															
824	0.82uF															
105	1.0uF															
155	1.5uF															
225	2.2uF															

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



Values that are typically available.

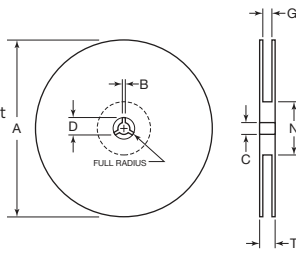
All measurements in inches (mm)

SIZE		2220				2225			
L		0.225 ± 0.0158 (5.70 ± 0.40)				0.225 ± 0.0158 (5.70 ± 0.40)			
W		0.197 ± 0.0158 (5.00 ± 0.40)				0.248 ± 0.0158 (6.30 ± 0.40)			
T (max)		0.122 (3.10)				0.145 (3.68)			
E/B		0.0335 ± 0.0138 (0.85 ± 0.35)				0.0335 ± 0.0138 (0.85 ± 0.35)			
VDCW (MAX)		200V / 250V	500V	1KV	2KV	200V / 250V	500V	1KV	2KV
151	150pF								
181	180pF								
221	220pF								
271	270pF								
331	330pF								
391	390pF								
471	470pF								
561	560pF								
681	680pF								
821	820pF								
102	1000pF								
122	1200pF								
152	1500pF								
182	1800pF								
222	2200pF								
272	2700pF								
332	3300pF								
392	3900pF								
472	4700pF								
562	5600pF								
682	6800pF								
822	8200pF								
103	0.01uF								
123	0.012uF								
153	0.015uF								
183	0.018uF								
223	0.022uF								
273	0.027uF								
333	0.033uF								
393	0.039uF								
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104	0.10uF								
124	0.12uF								
154	0.15uF								
184	0.18uF								
224	0.22uF								
274	0.27uF								
334	0.33uF								
394	0.39uF								
474	0.47uF								
564	0.56uF								
684	0.68uF								
824	0.82uF								
105	1.0uF								
155	1.5uF								
225	2.2uF								

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.

### TAPE & REEL SPECIFICATIONS

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

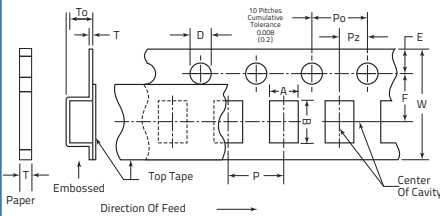


#### REEL DIMENSIONS

Unit: mm (inch)

TAPE	B min	C	A (7")	A (13")	D min	N min	G	T max
8mm	$\frac{0.3}{(.012)}$	$\frac{13 \pm .05}{(.512 \pm .02)}$	$\frac{178 \pm 2.0}{(7 \pm .079)}$	$\frac{330 \pm 2.0}{(13 \pm .08)}$	$\frac{20.2}{(.795)}$	$\frac{50}{(1.97)}$	$\frac{10 \pm 1.5}{(.394 \pm 1.059)}$	$\frac{14.9}{(.587)}$
12mm	$\frac{0.3}{(.012)}$	$\frac{13 \pm .05}{(.512 \pm .02)}$	$\frac{178 \pm 2.0}{(7 \pm .079)}$	$\frac{330 \pm 2.0}{(13 \pm .08)}$	$\frac{20.2}{(.795)}$	$\frac{50}{(1.97)}$	$\frac{10 \pm 1.5}{(.394 \pm 1.059)}$	$\frac{14.9}{(.587)}$

#### TAPING SPECIFICATIONS



#### 7 IN. REEL QUANTITIES\*

SIZE	0603	0805	1205	1210	1812	2221
Tape Size	8mm	8mm	8mm	8mm	12mm	12mm
Min Qty per Reel	3000	2000	2000	1000	1000	1000
Max Qty per eel	4000	5000	5000	5000	3000	1000

\* Quantity dependent on thickness

#### PAPER TAPE CARRIER DIMENSIONS (8mm)

Unit: mm (inch)

SIZE (inches)	A	B	W	F	E	Po	Pz	D	t	P
0603	$\frac{1.10 \pm 0.2}{(.043 \pm .008)}$	$\frac{1.90 \pm 0.2}{(.075 \pm .008)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm 0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{-.00}$ $\frac{-0.0}{(.079 \pm .002)}$	$\frac{1.5 \pm 0.1}{(.064 \pm .004)}$	$\frac{1.15 \text{ MAX}}{(.045 \text{ MAX})}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$
0805	$\frac{1.16 \pm 0.2}{(.046 \pm .008)}$	$\frac{2.4 \pm 0.2}{(.095 \pm .008)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm 0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{-.00}$ $\frac{-0.0}{(.079 \pm .002)}$	$\frac{1.5 \pm 0.1}{(.064 \pm .004)}$	$\frac{1.15 \text{ MAX}}{(.045 \text{ MAX})}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$
1206	$\frac{2.0 \pm 0.2}{(.079 \pm .008)}$	$\frac{3.6 \pm 0.2}{(.142 \pm .008)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm 0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{-.00}$ $\frac{-0.0}{(.079 \pm .002)}$	$\frac{1.5 \pm 0.1}{(.064 \pm .004)}$	$\frac{1.15 \text{ MAX}}{(.045 \text{ MAX})}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$

#### EMBOSSED CARRIER DIMENSIONS (8mm & 12mm)

SIZE (inches)	A	B	W	F	E	Po	Pz	D	To	T	P
0805	$\frac{1.48 \pm 0.2}{(.058 \pm .008)}$	$\frac{2.3 \pm 0.2}{(.091 \pm .008)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm 0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$	$\frac{1.5 \pm 0.1}{-.00}$ $\frac{-0.0}{(.064 \pm .004)}$	$\frac{2.5 \text{ MAX}}{(.098 \text{ MAX})}$	$\frac{0.6 \text{ MAX}}{(.024 \text{ MAX})}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$
1206	$\frac{2.0 \pm 0.2}{(.079 \pm .008)}$	$\frac{3.6 \pm 0.2}{(.142 \pm .008)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm 0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$	$\frac{1.5 \pm 0.1}{-.00}$ $\frac{-0.0}{(.064 \pm .004)}$	$\frac{2.5 \text{ MAX}}{(.098 \text{ MAX})}$	$\frac{0.6 \text{ MAX}}{(.024 \text{ MAX})}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$
1210	$\frac{2.9 \pm 0.2}{(.114 \pm .008)}$	$\frac{3.6 \pm 0.2}{(.142 \pm .008)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm 0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$	$\frac{1.5 \pm 0.1}{-.00}$ $\frac{-0.0}{(.064 \pm .004)}$	$\frac{2.5 \text{ MAX}}{(.098 \text{ MAX})}$	$\frac{0.6 \text{ MAX}}{(.024 \text{ MAX})}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$
1808	$\frac{2.5 \pm 0.2}{(.098 \pm .008)}$	$\frac{4.9 \pm 0.2}{(.193 \pm .008)}$	$\frac{12.0 \pm 0.3}{(.472 \pm .012)}$	$\frac{5.5 \pm 0.5}{(.22 \pm .002)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$	$\frac{1.5 \pm 0.1}{-.00}$ $\frac{-0.0}{(.064 \pm .004)}$	$\frac{4.0 \text{ MAX}}{(.16 \text{ MAX})}$	$\frac{0.6 \text{ MAX}}{(.024 \text{ MAX})}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$
1812	$\frac{3.6 \pm 0.2}{(.142 \pm .008)}$	$\frac{4.9 \pm 0.2}{(.193 \pm .008)}$	$\frac{12.0 \pm 0.3}{(.472 \pm .012)}$	$\frac{5.6 \pm 0.1}{(.221 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$	$\frac{1.5 \pm 0.1}{-.00}$ $\frac{-0.0}{(.064 \pm .004)}$	$\frac{4.0 \text{ MAX}}{(.16 \text{ MAX})}$	$\frac{0.6 \text{ MAX}}{(.024 \text{ MAX})}$	$\frac{8.0 \pm 0.1}{(.315 \pm .004)}$
2220	$\frac{5.4 \pm 0.2}{(.21 \pm .008)}$	$\frac{6.1 \pm 0.2}{(.24 \pm .008)}$	$\frac{12.0 \pm 0.3}{(.472 \pm .012)}$	$\frac{5.5 \pm 0.5}{(.22 \pm .002)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$	$\frac{1.5 \pm 0.1}{-.00}$ $\frac{-0.0}{(.064 \pm .004)}$	$\frac{4.0 \text{ MAX}}{(.16 \text{ MAX})}$	$\frac{0.6 \text{ MAX}}{(.024 \text{ MAX})}$	$\frac{8.0 \pm 0.1}{(.315 \pm .004)}$
2225	$\frac{6.9 \pm 0.2}{(.27 \pm .008)}$	$\frac{6.1 \pm 0.2}{(.24 \pm .008)}$	$\frac{12.0 \pm 0.3}{(.472 \pm .012)}$	$\frac{5.5 \pm 0.5}{(.22 \pm .002)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$	$\frac{1.5 \pm 0.1}{-.00}$ $\frac{-0.0}{(.064 \pm .004)}$	$\frac{4.0 \text{ MAX}}{(.16 \text{ MAX})}$	$\frac{0.6 \text{ MAX}}{(.024 \text{ MAX})}$	$\frac{8.0 \pm 0.1}{(.315 \pm .004)}$