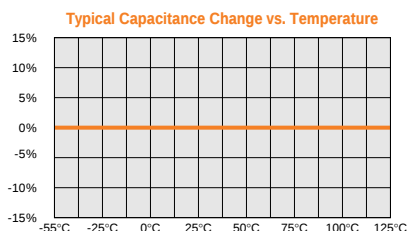


Ceramic Chip Capacitors

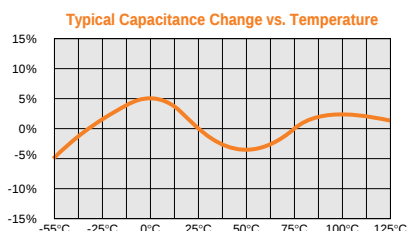
Multilayer chip capacitors have a low residual inductance, an excellent frequency response and minimal stray capacitance since there are no leads. These characteristics enable design to be very close to the theoretical values of the capacitors.

NP0/C0G: SPECIFICATIONS:



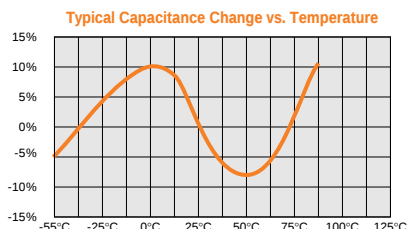
OPERATING TEMPERATURE RANGE:	-55°C to +125°C
TEMPERATURE COEFFICIENT:	0 ±30PPM/°C
TEMPERATURE VOLTAGE COEFFICIENT:	0 ±30PPM/°C
DISSIPATION FACTOR:	0.1% MAX.
INSULATION RESISTANCE:	>1000 ohms F or 100 G ohms, whichever is less at 25°C, VDCW. (The IR at 125°C is 10% of the value at 25°C)
AGEING:	None
WITHSTANDING VOLTAGE:	>2.5 times VDCW
TEST PARAMETERS:	1MHz ± 100KHz at 1.0 ± 0.2 Vrms ≤ 100 pF, 25°C 1KHz ± 100Hz at 1.0 ± 0.2 Vrms > 100 pF, 25°C
CAPACITANCE TOLERANCE:	B,C,D,F,G,J,K

X7R: SPECIFICATIONS:



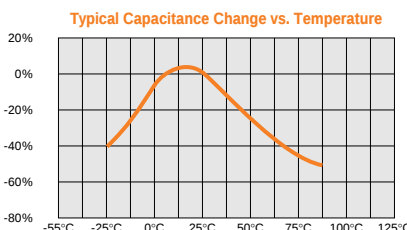
OPERATING TEMPERATURE RANGE:	-55°C to +125°C
TEMPERATURE COEFFICIENT:	0 ±15%Δ°C MAX.
TEMPERATURE VOLTAGE COEFFICIENT:	X7R not applicable
DISSIPATION FACTOR:	For 50 volts and 100 volts: 2.5% MAX.; For 25 volts: 3.0% MAX.; For 16 volts: 3.5% MAX.; For 10 volts: 5.0% MAX.; For 6.3 volts: 10% MAX. For values > 10μF and voltages ≤ 10V, the D.F. is 10% MAX.
INSULATION RESISTANCE:	>1000 ohms F or 100 G ohms, 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
TEST PARAMETERS:	1KHz ± 100Hz at 1.0 ± 0.2 Vrms > 100 pF, 25°C
CAPACITANCE TOLERANCE:	J,K,M

X5R: SPECIFICATIONS:



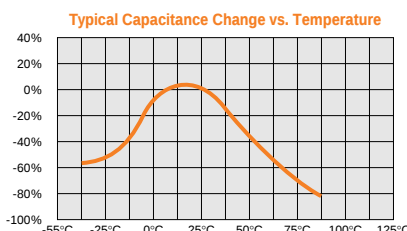
OPERATING TEMPERATURE RANGE:	-55°C to +85°C
TEMPERATURE COEFFICIENT:	0 ±15%Δ°C MAX.
TEMPERATURE VOLTAGE COEFFICIENT:	X5R not applicable
DISSIPATION FACTOR:	For 50 volts and 100 volts: 2.5% MAX.; For 25 volts: 3.0% MAX.; For 16 volts: 3.5% MAX.; For 10 volts: 5.0% MAX.; For 6.3 volts: 10% MAX. For values > 10μF and voltages ≤ 10V, the D.F. is 10% MAX.
INSULATION RESISTANCE:	>1000 ohms F or 100 G ohms, whichever is less at 25°C, VDCW. (10,000 ohms at 125°C)
AGEING:	2.5% per decade hour, typical
WITHSTANDING VOLTAGE:	>2.5 times VDCW
TEST PARAMETERS:	1KHz ± 100Hz at 1.0 ± 0.2 Vrms > 100 pF, 25°C
CAPACITANCE TOLERANCE:	J,K,M

Z5U: SPECIFICATIONS:



OPERATING TEMPERATURE RANGE:	+10°C to +85°C
TEMPERATURE COEFFICIENT:	+22% - 56%Δ°C MAX.
DISSIPATION FACTOR:	4.0% MAX.
INSULATION RESISTANCE:	>100 ohms F or 10 G ohms, whichever is less at 25°C, VDCW.
AGEING:	5% per decade hour, typical
WITHSTANDING VOLTAGE:	>2.5 times VDCW
TEST PARAMETERS:	1KHz ± 100Hz at 0.5 ± 0.1 Vrms, 25°C
CAPACITANCE TOLERANCE:	M,Z,P

Y5V: SPECIFICATIONS:

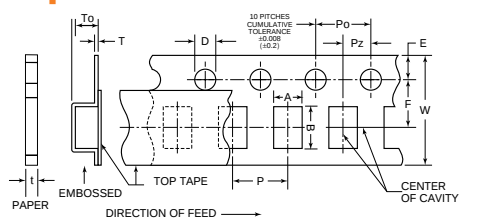


OPERATING TEMPERATURE RANGE:	-30°C to +85°C
TEMPERATURE COEFFICIENT:	+22% - 82%Δ°C MAX.
DISSIPATION FACTOR:	For 25 volts and 50 volts: 5% MAX.; For 16 volts: 7% MAX.; For 10 volts: 9% MAX.; For 6.3 volts: 11% MAX. For higher Cap values > 10μF, the D.F. is 20% MAX.
INSULATION RESISTANCE:	>100 ohms F or 10 G ohms, whichever is less at 25°C, VDCW.
AGEING:	7% per decade hour, typical
WITHSTANDING VOLTAGE:	>2.5 times VDCW
TEST PARAMETERS:	1KHz ± 100Hz at 1.0 ± 0.2 Vrms, 25°C
CAPACITANCE TOLERANCE:	M,Z

* Test parameters for Hi-Caps: X7R, X5R and Y5V
1KHz ± 100Hz at 1.0 ± 0.2 Vrms ≤ 10uF (10 V min.)
1KHz ± 100Hz at 0.5 ± 0.1 Vrms ≤ 10uF (6.3V max.)
120Hz ± 24Hz at 0.5 ± 0.1 Vrms > 10uF

All tape and reel specifications must be adhered to per EIA-481-1-A as noted and stated in the Chip Resistor section on page 65.

Taping Specifications



Reel Dimensions

Unit: mm (inch)

TAPE	B min	C	A (7")	A (13")	D min	N min	G	T max
8mm	0.3 (.012)	13 ± .05 (.512 ± .02)	178 ± 2.0 (7 ± .079)	330 ± 2.0 (13 ± .08)	20.2 (.795)	50 (1.97)	10 ± 1.5 (.394 ± .059)	14.9 (.587)
12mm	0.3 (.012)	13 ± .05 (.512 ± .02)	178 ± 2.0 (7 ± .079)	330 ± 2.0 (13 ± .08)	20.2 (.795)	50 (1.97)	10 ± 1.5 (.394 ± .059)	14.9 (.587)

7 in. Reel Quantities**

SIZE	01005	0201*	0402*	0603	0805	1206	1210	1812	2221
TAPE SIZE	8mm	8mm	8mm	8mm	8mm	8mm	8mm	12mm	12mm
MIN QTY PER REEL	20,000†	15,000	5000	3000	3000	2000	1000	1000	1000
MAX QTY PER REEL	20,000†	15,000	10,000	4000	5000	5000	5000	3000	1000

** Quantity dependent on Chip Thickness

* 0201 and 0402 Pitch ("P") is .079" ± .004" (2.0 ± 0.1mm)

† Smaller quantities may be available. Please contact your sales person.

Paper Tape Carrier Dimensions

(8mm)

SIZE	A	B	W	F	E	Po	Pz	D	t	P
01005	0.25 ± 0.05 (.010 ± .002)	0.45 ± 0.05 (.018 ± .002)	8.0 ± 0.2 (.315 ± .008)	3.5 ± 0.1 (.138 ± .004)	1.75 ± 0.1 (.069 ± .004)	4.0 ± 0.1 (.157 ± .004)	2.0 ± 0.05 (.039 ± .002)	1.5 + 0.1 - 0.0 (.064 + .004) - .000	1.15 MAX (.045 MAX)	2.0 ± 0.05 (.079 ± .002)
0201	0.37 ± 0.05 (.014 ± .002)	0.67 ± 0.05 (.026 ± .002)	8.0 ± 0.2 (.315 ± .008)	3.5 ± 0.1 (.138 ± .004)	1.75 ± 0.1 (.069 ± .004)	4.0 ± 0.1 (.157 ± .004)	2.0 ± 0.05 (.039 ± .002)	1.5 + 0.1 - 0.0 (.064 + .004) - .000	1.15 MAX (.045 MAX)	2.0 ± 0.05 (.079 ± .002)
0402	0.65 ± 0.1 (.026 ± .004)	1.10 ± 0.2 (.043 ± .008)	8.0 ± 0.2 (.315 ± .008)	3.5 ± 0.1 (.138 ± .004)	1.75 ± 0.1 (.069 ± .004)	4.0 ± 0.1 (.157 ± .004)	2.0 ± 0.05 (.039 ± .002)	1.5 + 0.1 - 0.0 (.064 + .004) - .000	1.15 MAX (.045 MAX)	2.0 ± 0.05 (.079 ± .002)
0603	1.10 ± 0.2 (.043 ± .008)	1.90 ± 0.2 (.075 ± .008)	8.0 ± 0.2 (.315 ± .008)	3.5 ± 0.1 (.138 ± .004)	1.75 ± 0.1 (.069 ± .004)	4.0 ± 0.1 (.157 ± .004)	2.0 ± 0.05 (.079 ± .002)	1.5 + 0.1 - 0.0 (.064 + .004) - .000	1.15 MAX (.045 MAX)	4.0 ± 0.1 (.157 ± .004)
0805	1.16 ± 0.2 (.046 ± .008)	2.4 ± 0.2 (.095 ± .008)	8.0 ± 0.2 (.315 ± .008)	3.5 ± 0.1 (.138 ± .004)	1.75 ± 0.1 (.069 ± .004)	4.0 ± 0.1 (.157 ± .004)	2.0 ± 0.05 (.079 ± .002)	1.5 + 0.1 - 0.0 (.064 + .004) - .000	1.15 MAX (.045 MAX)	4.0 ± 0.1 (.157 ± .004)
1206	2.0 ± 0.2 (.079 ± .008)	3.6 ± 0.2 (.142 ± .008)	8.0 ± 0.2 (.315 ± .008)	3.5 ± 0.1 (.138 ± .004)	1.75 ± 0.1 (.069 ± .004)	4.0 ± 0.1 (.157 ± .004)	2.0 ± 0.05 (.079 ± .002)	1.5 + 0.1 - 0.0 (.064 + .004) - .000	1.15 MAX (.045 MAX)	4.0 ± 0.1 (.157 ± .004)

Unit: mm (inch)

Embossed Carrier Dimensions

(8mm & 12mm)

SIZE	A	B	W	F	E	Po	Pz	D	To	T	P
0805	1.48 ± 0.2 (.058 ± .008)	2.3 ± 0.2 (.091 ± .008)	8.0 ± 0.2 (.315 ± .008)	3.5 ± 0.1 (.138 ± .004)	1.75 ± 0.1 (.069 ± .004)	4.0 ± 0.1 (.157 ± .004)	2.0 ± 0.05 (.079 ± .002)	1.5 + 0.1 - 0.0 (.06 + .004) - .000	2.5 MAX (.098 MAX)	0.6 MAX (.024 MAX)	4.0 ± 0.1 (.157 ± .004)
1206	2.0 ± 0.2 (.079 ± .008)	3.6 ± 0.2 (.142 ± .008)	8.0 ± 0.2 (.315 ± .008)	3.5 ± 0.1 (.138 ± .004)	1.75 ± 0.1 (.069 ± .004)	4.0 ± 0.1 (.157 ± .004)	2.0 ± 0.05 (.079 ± .002)	1.5 + 0.1 - 0.0 (.06 + .004) - .000	2.5 MAX (.098 MAX)	0.6 MAX (.024 MAX)	4.0 ± 0.1 (.157 ± .004)
1210	2.9 ± 0.2 (.114 ± .008)	3.6 ± 0.2 (.142 ± .008)	8.0 ± 0.2 (.315 ± .008)	3.5 ± 0.1 (.138 ± .004)	1.75 ± 0.1 (.069 ± .004)	4.0 ± 0.1 (.157 ± .004)	2.0 ± 0.05 (.079 ± .002)	1.5 + 0.1 - 0.0 (.06 + .004) - .000	2.5 MAX (.098 MAX)	0.6 MAX (.024 MAX)	4.0 ± 0.1 (.157 ± .004)
1812	3.6 ± 0.2 (.142 ± .008)	4.9 ± 0.2 (.193 ± .008)	12.0 ± 0.3 (.472 ± .012)	5.6 ± 0.1 (.221 ± .004)	1.75 ± 0.1 (.069 ± .004)	4.0 ± 0.1 (.157 ± .004)	2.0 ± 0.05 (.079 ± .002)	1.5 + 0.1 - 0.0 (.06 + .004) - .000	3.8 MAX (.150 MAX)	0.6 MAX (.024 MAX)	8.0 ± 0.1 (.315 ± .004)

How To Order

C0805

Series
See Chart

C0G

Temperature
Characteristic

500

Rated Voltage
1st two digits are significant followed by number of zeroes.
6R3 = 6.3 VDCW
100 = 10 VDCW
160 = 16 VDCW
250 = 25 VDCW
500 = 50 VDCW
101 = 100 VDCW
201 = 200 VDCW
251 = 250 VDCW

101

Capacitance (pico - Farads)
1st two digits are significant, followed by number of zeroes.
101 = 100 pF
R denotes decimal
6R8 = 6.8 pF

J

Tolerance Code:
*B = ± 0.1 pF
*C = ± 0.25 pF
*D = ± 0.5 pF
F = ± 1%
G = ± 2%
J = ± 5%
K = ± 10%
M = ± 20%
N = ± 30%
Z = +80 -20%
P = +100 -0%
* For capacitance values below 10 pF only.

N

Termination
N = Nickel Barrier,
Tinned Termination
Composition is
100% matte Tin (Sn)
P = Palladium Silver
G = Gold over Nickel
P: For Palladium Silver Termination (PdAg)
add P above.
Pb: For 90% Tin (Sn)/10% Lead (Pb) Termination
add Pb above.
Standard termination finish for this product is
100% matte Tin (Sn)

□

Marking**
6 = EIA "J" Code
"Leave blank if
No Marking"
P = Paper Tape (7" Reel)

P

Packaging
B = Bulk
D = Paper Tape (10" Reel)
E = Embossed Tape (7" Reel)
R = Paper Tape (13" Reel)
U = Embossed Tape (13" Reel)

*

Optional Identifier

** 0201 and 0402 size capacitors cannot be marked

* OPTIONAL IDENTIFIER

Min./Max. thickness

- designates minimum thickness

* designates maximum thickness

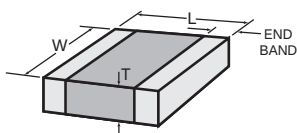
The following letters define thickness as signified below:

CODE:	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	6	9
DIMENSION:	.010	.015	.020	.026	.030	.035	.040	.045	.050	.055	.060	.065	.070	.075	.080	.085	.090	.023	.021

Please Note: Venkel offers Engineering Kits for this product. See page 121 for details

Ceramic Chip Capacitors

NP0/C0G Dielectric



Values that are typically available.

25V Available in 25V only.

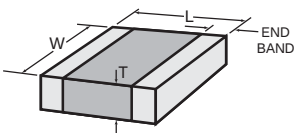
(All measurements in inches)		□		□		□		□		□		□		□		□		□		
Size		01005 (± 0.0008)		0201 (± 0.002)		0402 (± 0.004)		0504 (± 0.008)		0603 (± 0.006)		0805 (± 0.008)		1206 (± 0.008)		1210 (±0.008)		1812 (±0.012)		
L		.016		.024		.040		.050		.063		.080		.126		.126		.177		
W		.008		.012		.020		.040		.032		.050		.063		.098		.126		
T (max)		.008		.012		.025		.040		.033		.055		.070		.075		.085		
Min E/B		.002		.002		.004		.005		.008		.020 ± .010		.020 ± .010		.020 ± .010		.024 ± .015		
VDCW (MAX)		16V		25V		25V		50V		50V		100V		50V		100V		50V		
CAP. CODE ↑ ↓	0R5	0.5pF	Values shown to the left are available for 01005 size only	Values shown to the left are available for 0201 size only	CAP. VALUE ↑ ↓	25V	50V	50V	100V	50V	100V	25V	50V	100V	50V	100V	50V	100V	50V	100V
	1R0	1.0pF																		
	1R2	1.2																		
	1R5	1.5																		
	1R8	1.8																		
	2R2	2.2																		
	2R7	2.7																		
	3R3	3.3																		
	3R9	3.9																		
	4R7	4.7																		
	5R6	5.6																		
	6R8	6.8																		
	8R2	8.2																		
	100	10pF																		
	120	12																		
	150	15																		
	180	18																		
	220	22																		
	270	27																		
	330	33																		
	390	39																		
	470	47																		
	560	56																		
	680	68																		
	820	82																		
	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																			
122	1200																			
152	1500																			
182	1800																			
222	2200																			
272	2700																			
332	3300																			

Note:

Due to demand and raw material fluctuations in the market, changes and availability of individual values may occur. Minimum order quantities may apply.

Ceramic Chip Capacitors

NP0/C0G Dielectric



Values that are typically available.

25V Available in 25V only.

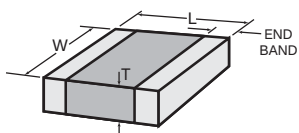
(All measurements in inches)																			
Size	0201 (± 0.002)		0402 (± 0.004)		0504 (± 0.008)		0603 (± 0.006)		0805 (± 0.008)			1206 (± 0.008)		1210 (± 0.008)		1812 (± 0.012)		2220 / 2221 (± 0.016)	
L	.024		.040		.050		.063		.080			.126		.126		.177		.225 / .225	
W	.012		.020		.040		.032		.050			.063		.098		.126		.200 / .210	
T (max)	.012		.025		.040		.033		.055			.070		.075		.085		.108 / .108	
Min E/B	.002		.004		.005		.008		.020 ± .010			.020 ± .010		.020 ± .010		.024 ± .015		.025 ± .015	
VDCW (MAX)	25V		25V	50V	50V	100V	50V	100V	25V	50V	100V	50V	100V	50V	100V	50V	100V	50V	100V
392	3900																		
472	4700																		
562	5600																		
682	6800																		
822	8200																		
103	.01µF																		
123	.012																		
153	.015																		
183	.018																		
223	.022																		
273	.027																		
333	.033																		
393	.039																		
473	.047																		
563	.056																		
683	.068																		
823	.082																		
104	.100µF											25V							
124	.120																		
154	.150																		
184	.180																		
224	.220																		
274	.270																		
334	.330																		
394	.390																		
474	.470																		
564	.560																		
684	.680																		
824	.820																		
105	1.00µF																		
125	1.20																		
155	1.50																		
185	1.80																		
225	2.20																		
335	3.30																		
395	3.90																		
475	4.70																		
685	6.80																		
106	10.0µF																		
156	15.0µF																		
226	22.0µF																		
476	47.0µF																		
107	100.0µF																		

Note:

Due to demand and raw material fluctuations in the market, changes and availability of individual values may occur. Minimum order quantities may apply.

Ceramic Chip Capacitors

X7R Dielectric



Values that are typically available.



X5R Available in X5R only. See X5R chart on page 12, for all values 1μF and above

(All measurements in inches)			□			□			□			□						□				
Size			0201 (± 0.002)			0402 (± 0.004)			0504 (± 0.008)			0603 (± 0.006)						0805 (± 0.008)				
L			.024			.040			.050			.063						.080				
W			.012			.020			.040			.032						.050				
T (max)*			.012			.025			.040			.033						.055				
Min E/B			.002			.004			.005			.008						.020 ± .010				
VDCW (MAX)			6.3V	10V	16V	16V	25V	50V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V
CAP. CODE ↑ ↓	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																				
	122	1200																				
	152	1500																				
	182	1800																				
	222	2200																				
	272	2700																				
	332	3300																				
	392	3900																				
472	4700																					
562	5600																					
682	6800																					
822	8200																					
103	.01μF																					
123	.012																					
153	.015	X5R																				
183	.018																					
223	.022	X5R																				
273	.027																					
333	.033	X5R																				

* For values above 1μF, thickness may be greater than specified above.

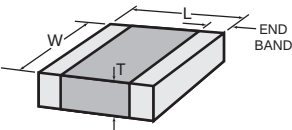
T(max): 0603 – 0.048"
0805 – 0.075"

Note:

Due to demand and raw material fluctuations in the market, changes and availability of individual values may occur. Minimum order quantities may apply.

Ceramic Chip Capacitors

X7R Dielectric



Values that are typically available.

X5R Available in X5R only. See X5R chart on page 12, for all values 1µF and above

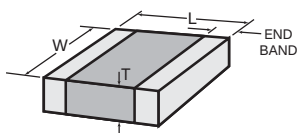
(All measurements in inches)		□			□			□			□						□				
Size		0201 (± 0.002)			0402 (± 0.004)			0504 (± 0.008)			0603 (± 0.006)						0805 (± 0.008)				
L		.024			.040			.050			.063						.080				
W		.012			.020			.040			.032						.050				
T (max)*		.012			.025			.040			.033						.055				
Min E/B		.002			.004			.005			.008						.020 ± .010				
VDCW (MAX)		6.3V	10V	16V	6.3V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V
393	.039	X5R																			
473	.047	X5R																			
563	.056																				
683	.068																				
823	.082																				
104	.100µF	X5R																			
124	.120																				
154	.150																				
184	.180																				
224	.220				X5R																
274	.270																				
334	.330				X5R																
394	.390																				
474	.470				X5R																
564	.560																				
684	.680										X5R	X5R									
824	.820																				
105	1.00µF				X5R																
125	1.20																				
155	1.50																				
185	1.80																				
225	2.20										X5R										
335	3.30																				
475	4.70																				
685	6.80																				
106	10.0µF																				
156	15.0µF																				
226	22.0µF																				
476	47.0µF																				
107	100.0µF																				

* For values above 1uF, thickness may be greater than specified above.
T(max): 0603 – 0.048"
0805 – 0.075"

Note: Due to demand and raw material fluctuations in the market, changes and availability of individual values may occur. Minimum order quantities may apply.

Ceramic Chip Capacitors

X7R Dielectric



Values that are typically available.



X5R Available in X5R only. See X5R chart on page 12, for all values 1μF and above

(All measurements in inches)																						
Size			1206 (± 0.008)					1210 (±0.008)					1812 (±0.012)					2220 / 2221 (±0.016)				
L			.126					.126					.177					.225 / .225				
W			.063					.098					.126					.200 / .210				
T (max)*			.070					.075					.085					.108 / .108				
Min E/B			.020 ± .010					.020 ± .010					.024 ± .015					.025 ± .015				
VDCW (MAX)			10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V	16V	25V	50V	100V
^ CAP. CODE v	102	^ CAP. VALUE v	1000pF																			
	122		1200																			
	152		1500																			
	182		1800																			
	222		2200																			
	272		2700																			
	332		3300																			
	392		3900																			
	472		4700																			
	562		5600																			
	682		6800																			
	822		8200																			
	103		.01μF																			
	123		.012																			
	153		.015																			
	183		.018																			
	223		.022																			
	273		.027																			
	333		.033																			
	393		.039																			
473	.047																					
563	.056																					
683	.068																					
823	.082																					
104	.100μF																					
124	.120																					
154	.150																					
184	.180																					
224	.220																					
274	.270																					
334	.330																					

* For values above 1μF, thickness may be greater than specified above.

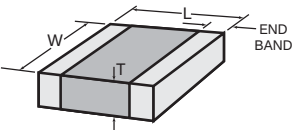
T(max): 1206 – 0.110" 1812 – 0.130"
1210 – 0.125" 2220 – 0.135"

Note:

Due to demand and raw material fluctuations in the market, changes and availability of individual values may occur. Minimum order quantities may apply.

Ceramic Chip Capacitors

X7R Dielectric



Values that are typically available.

X5R Available in X5R only. See X5R chart on page 12, for all values 1µF and above

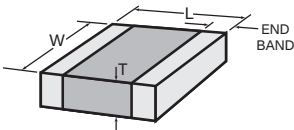
(All measurements in inches)																					
Size		1206 (± 0.008)					1210 (±0.008)					1812 (±0.012)						2220 / 2221 (±0.016)			
L		.126					.126					.177						.225 / .225			
W		.063					.098					.126						.200 / .210			
T (max)*		.070					.075					.085						.108 / .108			
Min E/B		.020 ± .010					.020 ± .010					.024 ± .015						.025 ± .015			
VDCW (MAX)		10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V	16V	25V	50V	100V
CAP. CODE ↑ ↓	394	.390																			
	474	.470																			
	564	.560																			
	684	.680																			
	824	.820																			
	105	1.00µF																			
	125	1.20																			
	155	1.50																			
	185	1.80																			
	225	2.20																			
	335	3.30																			
	475	4.70																			
	685	6.80																			
	106	10.0µF													X5R						
	156	15.0µF																			
	226	22.0µF												X5R	X5R						
	476	47.0µF										X5R	X5R								
	107	100.0µF																			

* For values above 1uF, thickness may be greater than specified above.
T(max): 1206 – 0.110" 1812 – 0.130"
1210 – 0.125" 2220 – 0.135"

Note:
Due to demand and raw material fluctuations in the market, changes and availability of individual values may occur. Minimum order quantities may apply.

Ceramic Chip Capacitors

X5R Dielectric (Minimum 1μF)



Values that are typically available.

(All measurements in inches)																											
Size		0402 (± 0.004)		0603 (± 0.006)				0805 (± 0.008)				1206 (± 0.008)				1210 (± 0.008)				1812 (± 0.012)				2220 / 2221 (± 0.016)			
L		.040		.063				.080				.126				.126				.177				.225 / .225			
W		.020		.032				.050				.063				.098				.126				.200 / .210			
T (max)		.025		.033				.055				.070				.075				.085				.108 / .108			
Min E/B		.004		.008				.020 ± .010				.020 ± .010				.020 ± .010				.024 ± .015				.025 ± .015			
VDCW (MAX)		6.3V	4V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	6.3V	10V	25V	
CAP. CODE 105 125 155 185 225 335	CAP. VALUE 1.00μF 1.20 1.50 1.80 2.20 3.30	1.00μF																									
		1.20																									
		1.50																									
		1.80																									
		2.20																									
		3.30																									

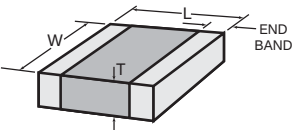
* For values above 1uF, thickness may be greater than specified above.
T(max): 1206 – 0.110" 1812 – 0.130"
1210 – 0.125" 2220 – 0.135"

Note:

Due to demand and raw material fluctuations in the market, changes and availability of individual values may occur. Minimum order quantities may apply.

Ceramic Chip Capacitors

X5R Dielectric (Minimum 1μF)



Values that are typically available.

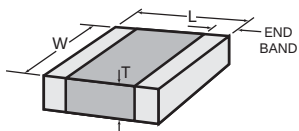
(All measurements in inches)																												
Size	0402 (± 0.004)	0603 (± 0.006)				0805 (± 0.008)				1206 (± 0.008)				1210 (±0.008)				1812 (±0.012)				2220 / 2221 (±0.016)						
L	.040	.063				.080				.126				.126				.177				.225 / .225						
W	.020	.032				.050				.063				.098				.126				.200 / .210						
T (max)	.025	.033				.055				.070				.075				.085				.108 / .108						
Min E/B	.004	.008				.020 ± .010				.020 ± .010				.020 ± .010				.024 ± .015				.025 ± .015						
VDCW (MAX)		6.3V	4V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	
CAP. CODE ↑ ↓	395	CAP. VALUE ↑ ↓	3.90																									
	475		4.70																									
	685		6.80																									
	106		10.0μF																									
	156		15.0μF																									
	226		22.0μF																									
	476		47.0μF																									
	107		100.0μF																									

* For values above 1uF, thickness may be greater than specified above.
T(max): 1206 – 0.110" 1812 – 0.130"
1210 – 0.125" 2220 – 0.135"

Note:
Due to demand and raw material fluctuations in the market, changes and availability of individual values may occur. Minimum order quantities may apply.

Ceramic Chip Capacitors

Z5U Dielectric



Values that are typically available.

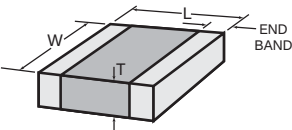
(All measurements in inches)																
Size		0504 (± 0.008)		0603 (± 0.006)		0805 (± 0.008)		1206 (± 0.008)		1210 (±0.008)		1812 (±0.012)		2220 / 2221 (±0.016)		
L		.050		.063		.080		.126		.126		.177		.225 / .225		
W		.040		.032		.050		.063		.098		.126		.200 / .210		
T (max)		.040		.033		.055		.070		.075		.085		.108 / .108		
Min E/B		.005		.008		.020 ± .010		.020 ± .010		.020 ± .010		.024 ± .015		.025 ± .015		
VDCW (MAX)		25V 50V		25V 50V		25V 50V		25V 50V		25V 50V		25V 50V		25V 50V		
CAP. CODE ↓	102	CAP. VALUE ↓	1000pF													
	122		1200													
	152		1500													
	182		1800													
	222		2200													
	272		2700													
	332		3300													
	392		3900													
	472		4700													
	562		5600													
	682		6800													
	822		8200													
	103		.01μF													
	123		.012													
	153		.015													
	183		.018													
	223		.022													
	273		.027													
	333		.033													
	393		.039													
	473		.047													
	563		.056													
	683		.068													
	823		.082													
	104		.100μF													
	124		.120													
	154		.150													
	184		.180													
224	.220															
274	.270															
334	.330															

Note:

Due to demand and raw material fluctuations in the market, changes and availability of individual values may occur. Minimum order quantities may apply.

Ceramic Chip Capacitors

Z5U Dielectric



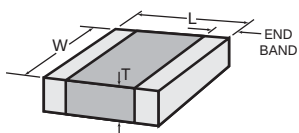
Values that are typically available.

(All measurements in inches)															
		□		□		□		□		□		□		□	
Size		0504 (± 0.008)		0603 (± 0.006)		0805 (± 0.008)		1206 (± 0.008)		1210 (± 0.008)		1812 (± 0.012)		2220 / 2221 (± 0.016)	
L		.050		.063		.080		.126		.126		.177		.225 / .225	
W		.040		.032		.050		.063		.098		.126		.200 / .210	
T (max)		.040		.033		.055		.070		.075		.085		.108 / .108	
Min E/B		.005		.008		.020 ± .010		.020 ± .010		.020 ± .010		.024 ± .015		.025 ± .015	
VDCW (MAX)		25V 50V		25V 50V		25V 50V		25V 50V		25V 50V		25V 50V		25V 50V	
CAP. CODE ↑ ↓	394	CAP. VALUE ↑ ↓	.390												
	474		.470												
	564		.560												
	684		.680												
	824		.820												
	105		1.00µF												
	125		1.20												
	155		1.50												
	185		1.80												
	225		2.20												
	335		3.30												
	395		3.90												
	475		4.70												
	685		6.80												
	106		10.0µF												
	156		15.0µF												
	226		22.0µF												
	476		47.0µF												
	107		100.0µF												

Note:
Due to demand and raw material fluctuations in the market, changes and availability of individual values may occur. Minimum order quantities may apply.

Ceramic Chip Capacitors

Y5V Dielectric



Values that are typically available.

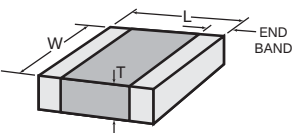
(All measurements in inches)		□		□		□		□		□		□		□		□		□		□		□		□		□			
Size		0201 (± 0.002)		0402 (± 0.004)				0603 (± 0.006)				0805 (± 0.008)				1206 (± 0.008)				1210 (±0.008)				1812 (±0.012)					
L		.024		.040				.063				.080				.126				.126				.177					
W		.012		.020				.032				.050				.063				.098				.126					
T (max)		.012		.025				.033				.055				.070				.075				.085					
Min E/B		.002		.004				.008				.020 ± .010				.020 ± .010				.020 ± .010				.024 ± .015					
VDCW (MAX)		10V		6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	10V	16V	25V	50V	6.3V	10V	16V	25V	6.3V	10V	25V
CAP. CODE ↑ ↓	102	CAP. VALUE ↑ ↓	1000pF																										
	122		1200																										
	152		1500																										
	182		1800																										
	222		2200																										
	272		2700																										
	332		3300																										
	392		3900																										
	472		4700																										
	562		5600																										
	682		6800																										
	822		8200																										
	103	.01μF																											
	123	.012																											
	153	.015																											
	183	.018																											
	223	.022																											
	273	.027																											
	333	.033																											
	393	.039																											
	473	.047																											
	563	.056																											
	683	.068																											
	823	.082																											
104	.100μF																												
124	.120																												
154	.150																												
184	.180																												
224	.220																												
274	.270																												
334	.330																												

Note:

Due to demand and raw material fluctuations in the market, changes and availability of individual values may occur. Minimum order quantities may apply.

Ceramic Chip Capacitors

Y5V Dielectric



Values that are typically available.

(All measurements in inches)																																				
Size		0201 (± 0.002)					0402 (± 0.004)					0603 (± 0.006)					0805 (± 0.008)					1206 (± 0.008)					1210 (±0.008)					1812 (±0.012)				
L		.024					.040					.063					.080					.126					.126					.177				
W		.012					.020					.032					.050					.063					.098					.126				
T (max)		.012					.025					.033					.055					.070					.075					.085				
Min E/B		.002					.004					.008					.020 ± .010					.020 ± .010					.020 ± .010					.024 ± .015				
VDCW (MAX)		10V					6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	10V	16V	25V	50V	6.3V	10V	16V	25V	6.3V	10V	25V				
CAP. CODE ↑ ↓	394	CAP. VALUE ↑ ↓	.390																																	
	474		.470																																	
	564		.560																																	
	684		.680																																	
	824		.820																																	
	105		1.00µF																																	
	125		1.20																																	
	155		1.50																																	
	185		1.80																																	
	225		2.20																																	
	335		3.30																																	
	395		3.90																																	
	475		4.70																																	
	685		6.80																																	
	106		10.0µF																																	
	156		15.0µF																																	
226	22.0µF																																			
476	47.0µF																																			
107	100.0µF																																			

Note:
Due to demand and raw material fluctuations in the market, changes and availability of individual values may occur. Minimum order quantities may apply.

All components in this section are RoHS compliant per the EU directives and definitions.