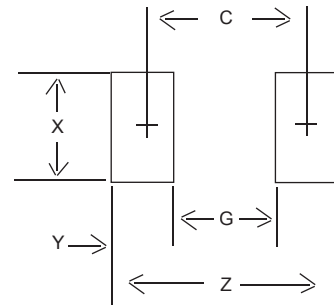
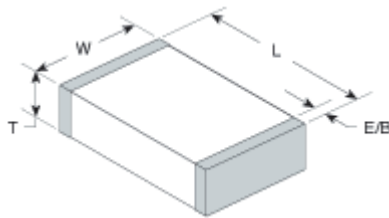


Surface Mount Ceramic Capacitors Specifications



Part Number Determination

500R15N101JV4T							
500	R15	N	101	J	V	4	T
VOLTAGE	CASE SIZE	DIELECTRIC	CAPACITANCE	TOLERANCE	TERMINATION	MARKING	PACKAGING
100 = 10V 160 = 16V 250 = 25V 500 = 50V 101 = 100V 201 = 200V 251 = 250V 301 = 300V 501 = 500V 631 = 630V 102 = 1000V 202 = 2000V 302 = 3000V 402 = 4000V 502 = 5000V	R05 = 0201 R07 = 0402 A11 = 0405 R14 = 0603 R15 = 0805 A18 = 0612 R18 = 1206 S41 = 1210 R29 = 1808 S43 = 1812 S47 = 2220 S49 = 1825 S48 = 2225	N = NPO W = X7R X = X5R Y = Y5V Z = Z5U	2 significant digits + # of zeros 1R0 = 1.0pF 100 = 10pF 102 = 1,000pF 474 = 0.47 μ F	* B = ± 0.10 pF * C = ± 0.25 pF * D = ± 0.50 pF F = $\pm 1\%$ G = $\pm 2\%$ J = $\pm 5\%$ K = $\pm 10\%$ M = $\pm 20\%$ Z = ± 80 -20% * Values < 10pF only	V = Nickel Barrier with 100% Tin Plating (Matte)	4 = Unmarked *6 = EIA "J" Code *Not available on sizes 0201 & 0402	U=Embossed Tape / 13" Reel R= Punched Tape / 13" Reel E=Embossed Tape / 7" Reel T=Punched Tape / 7" Reel None = Bulk Packaging Size 0201 - 1206 tape standard is Code "T" Tape specifications conform to EIA RS481



Package Dimensions in(mm)

Size Code	L	W	T Max.	E/B
0402	0.040 $\pm$ 0.004 (1.02 $\pm$ 0.10)	0.020 $\pm$ 0.004 (0.51 $\pm$ 0.10)	0.025 (0.64)	0.008 $\pm$ 0.004 (0.20 $\pm$ 1.0)
0603	0.063 $\pm$ 0.008 (1.60 $\pm$ 0.20)	0.032 $\pm$ 0.008 (0.81 $\pm$ 0.20)	0.035 (0.89)	0.10 $\pm$ 0.005 (0.25 $\pm$ 0.13)
0805	0.080 $\pm$ 0.010 (2.03 $\pm$ 0.25)	0.050 $\pm$ 0.010 (1.27 $\pm$ 0.25)	0.050 (1.27)	0.020 $\pm$ 0.010 (0.51 $\pm$ 0.25)
1206	0.125 $\pm$ 0.010 (3.17 $\pm$ 0.25)	0.062 $\pm$ 0.010 (1.57 $\pm$ 0.25)	0.050 (1.27)	0.020 $\pm$ 0.010 (0.51 $\pm$ 0.25)
1210	.125 $\pm$.010 (3.18 $\pm$.25)	.095 $\pm$.010 (2.41 $\pm$.25)	.065 max. (1.65)	.020 $\pm$.010 (0.51 $\pm$.25)
1812	.175 $\pm$.010 (4.45 $\pm$.25)	.125 $\pm$.010 (3.17 $\pm$.25)	.085 max. (2.16)	.025 $\pm$.015 (.064 $\pm$.38)
1825	.180 $\pm$.010 (4.57 $\pm$.25)	.250 $\pm$.040 (6.35 $\pm$.25)	.140 max. (3.56)	.025 $\pm$.015 (.064 $\pm$.38)
2225	.225 $\pm$.010 (5.72 $\pm$.25)	.255 $\pm$.015 (6.48 $\pm$.38)	.150 max. (3.81)	.025 $\pm$.015 (.064 $\pm$.38)

Land Pattern

Size Code	Z	G	X	Y(ref)	C(ref)
0402 reflow	2.40	0.40	1.30	1.00	1.40
0603 reflow	2.80	0.60	1.00	1.10	1.70
0603 wave	3.18	0.68	0.80	1.25	1.93
0805 reflow	3.20	0.60	1.50	1.30	1.90
0805 wave	3.70	0.70	1.10	1.50	2.20
1206 reflow	4.40	1.20	1.80	1.60	2.80
1206 wave	4.90	1.50	1.50	1.40	3.20
1210 reflow	4.40	1.20	2.70	1.60	2.80
1210 wave	4.90	1.50	2.00	1.70	3.20
1808 reflow	5.80	2.50	2.70	1.70	4.20
1808 wave	n/a	n/a	n/a	n/a	n/a
1812 reflow	5.80	2.00	3.40	1.90	3.90
1812 wave	6.30	2.30	2.60	2.00	4.30
1825 reflow	5.80	2.20	0.90	1.60	1.60
1825 wave	Not Recommended				

Electrical Characteristics

Dielectric	Dissipation Factor	Temperature Characteristic	Operating Temperature Range	Insulation Resistance
NPO	0.1% max	0 $\pm$ 30ppm/ $^{\circ}$ C	-55 $^{\circ}$ C to +125 $^{\circ}$ C	IR @ 25 $^{\circ}$ C, WDC = 1000 Ω F or 100G Ω whichever is less IR @ 125 $^{\circ}$ C, WDC = 10% of 25 $^{\circ}$ C rating
X7R	50V=2.5% max 125V=3.0% max 116V=3.5% max	$\pm 15\%$	-55 $^{\circ}$ C to +125 $^{\circ}$ C	
X5R	25V: 3.0% max 16V: 3.5% max 10V: 5.0% max		-55 $^{\circ}$ C to +85 $^{\circ}$ C	
Z5U	25V=4.0% max 16V=5.0% max	+22% to -56%	+10 to +85 $^{\circ}$ C	IR @ 25 $^{\circ}$ C, WDC = 100 Ω F or 100G Ω whichever is less
Y5V	25V=4.0% max 16V=5.0% max 10V=9.0% max	+22% to -82%	-30 to +85 $^{\circ}$ C	IR @ 25 $^{\circ}$ C, WDC = 100 Ω F or 100G Ω whichever is less

Mfg Specs

- Go to www.garrettelec.com
- Enter part number or find by description
- Select "S", select "manufacturer's specifications"