2225C/P (.220" x .250")

◆ Product Features

High Q, High RF Current/Voltage, High RF Power, Low ESR/ESL, Ultra-Stable Performance.

◆ Product Application

Typical Functional Applications: Bypass, Coupling, Tuning, Impedance Matching and D.C. Blocking.
Typical Circuit Applications: UHF/VHF RF Power Amplifiers, Antenna Tuning, Plasma Chambers and Medical Equipment.

◆ 2225C/P Capacitance Table NP0=C; P90=P

Cap. pF	Code	Tol.	Rated WVDC	Cap. pF	Code	Tol.	Rated WVDC	Cap. pF	Code	Tol.	Rated WVDC	Cap. pF	Code	Tol.	Rated WVDC
0.5	0R5	B,C,D	2500V Code 252 or 3600V Code 362	3.9	3R9	B,C,D	2500V Code 252 or 3600V Code 362	36	360	F,G, J,K	2500V Code 252 or 3600V Code 362	330	331	F,G, J,K	1500V Code 152 or 2000V Code 202
0.6	0R6			4.3	4R3			39	390			360	361		
0.7	0R7			4.7	4R7			43	430			390	391		
0.8	0R8			5.1	5R1			47	470			430	431		
0.9	0R9			5.6	5R6			51	510			470	471		
1.0	1R0			6.2	6R2			56	560			510	511		1000V Code 102 or 1500V Code 152
1.1	1R1			6.8	6R8			62	620			560	561		
1.2	1R2			7.5	7R5			68	680			620	621		
1.3	1R3			8.2	8R2			75	750			680	681		
1.4	1R4			9.1	9R1			82	820			750	751		
1.5	1R5			10	100	F,G, J,K		91	910			820	821		
1.6	1R6			11	110			100	101			910	911		
1.7	1R7			12	120			110	111		2500V Code 252 or 3000V Code 302	1000	102		
1.8	1R8			13	130			120	121			1100	112		
1.9	1R9			15	150			130	131			1200	122		
2.0	2R0			16	160			150	151			1500	152		500V Code 501
2.1	2R1			18	180			160	161			1800	182		
2.2	2R2			20	200			180	181			2200	222		
2.4	2R4			22	220			200	201			2700	272		
2.7	2R7			24	240			220	221						
3.0	3R0			27	270			240	241						
3.3	3R3			30	300			270	271						
3.6	3R6			33	330			300	301						

Remark: special capacitance, tolerance and WVDC are available, consult with PASSIVE PLUS.

◆ Part Numbering

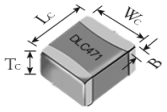
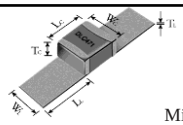
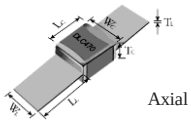
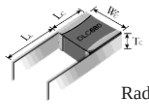
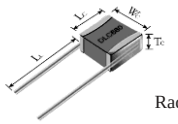
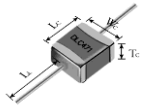
2225C 101 J W 252 X TV

- C=NP0; P=P90
- Capacitor Code 101=10x10[1]=100pF; 1R0=1.0pF
- Capacitance Tolerance: See below list
- Termination Type
- Rated Voltage
- Laser Marking
- Add TV for Vertical Orientation

Capacitance Tolerance								
Code	A	B	C	D	F	G	J	K
Tolerance	±0.05pF	±0.1pF	±0.25pF	±0.5pF	±1%	±2%	±5%	±10%

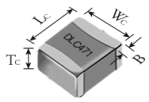
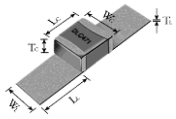
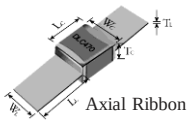
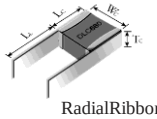
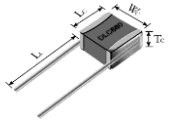
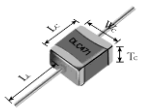
◆ 2225C/P Lead Type and Dimensions

unit: inch (millimeter)

Series	Term. Code	Type/ Outlines	Capacitor Dimensions				Lead Dimensions			Plated Material
			Length Lc	Width Wc	Thick-ness Tc	Overlap B	Length LL	Width WL	Thick-ness TL	
2225C 2225P	W	 Chip	.230 +.025 to -.010 (5.84 +0.64 to -0.25)	.250 ±.015 (6.35± 0.38)	.165 (4.19) max	.047 (1.20) max	-	-	-	100%Sn Solder over Nickel Plating RoHS Compliant
	L									90%Sn10%Pb Tin/Lead Solder over Nickel Plating
2225C 2225P	MS	 Microstrip	.245 ± .025 (6.22± 0.64)				.500 (12.70) min	.240 ±.005 (6.1± 0.13)	.008 ±.001 (0.2± 0.025)	Silver-plated Copper
2225C 2225P	AR	 Axial Ribbon							.004 ±.001(0.1 ±0.025)	100% Silver
2225C 2225P	RR	 Radial Ribbon		.250±.015 (6.35± 0.38)	.150 (3.81) max	-	.394 (10.00) min	.118± .005 (3.0± 0.13)	.012 ±.001 (0.3± 0.025)	
2225C 2225P	RW	 Radial Wire					.787 (20.00) min	Dia.=.031±.004 (0.80 ± 0.10)		Silver-plated Copper
2225C 2225P	AW	 Axial Wire					.984 (25.00) min			

◆ 2225 C /P Non-Magnetic Lead Type and Dimensions

unit:inch(millimeter)

Series	Term. Code	Type/ Outlines	Capacitor Dimensions				Lead Dimensions			Plated Material
			Length Lc	Width Wc	Thick-ness Tc	Overlap B	Length LL	Width WL	Thick-ness TL	
2225C 2225P	P	 Chip (Non-Mag)	.230 +.020 to -.010 (5.84 +0.51 to -0.25)	.250 ±.015 (6.35± 0.38)	.165 (4.19) max	.047 (1.20) max	-	-	-	100%Sn Solder over Copper Plating RoHS Compliant
2225C 2225P	MN	 Microstrip (Non-Mag)	.245 ±.025 (6.22± 0.64)	.250 ±.015 (6.35± 0.38)	.150 (3.81) max	-	.500 (12.70) min	.240 ±.005 (6.1± 0.13)	.008 ±.001 (0.2± 0.025)	Silver-plated Copper
2225C 2225P	AN	 Axial Ribbon (Non-Mag)							.004 ±.001 (0.1± 0.025)	100% Silver
2225C 2225P	FN	 RadialRibbon (Non-Mag)					.394 (10.00) min	.118 ±.005 (3.0± 0.13)	.012 ±.001 (0.3± 0.025)	Silver-plated Copper
2225C 2225P	RN	 Radial Wire(Non-Mag)					.787 (20.00) min	Dia.=.031±.004 (0.80 ± 0.10)		
2225C 2225P	BN	 Axial Wire (Non-Mag)					.984 (25.00) min			

Note: "Non-Mag" means no magnetic materials. All leads are attached with high temperature solder and parts are RoHS Compliant.

2225C/P (.220" x .250")

◆ Performance

Item	Specifications
Quality Factor (Q)	Greater than 10,000 at 1MHz.
Insulation Resistance (IR)	Test Voltage: 500V 10^5 Megohms min. @ +25℃ at rated WVDC. 10^4 Megohms min. @ +125℃ at rated WVDC.
Rated Voltage	See Rated Voltage Table.
Dielectric Withstanding Voltage (DWV)	250% of Voltage for 5seconds, Rated Voltage≦500VDC 150% of Voltage for 5seconds, 500VDC<RatedVoltage≦1250VDC 120% of Voltage for 5 seconds, Rated Voltage>1250VDC
Operating Temperature Range	-55℃ to +200℃
Temperature coefficient (TC)	C: 0±30ppm/℃ ; P: +90±20ppm/℃
Capacitance Drift	±0.02% or ±0.02pF, whichever is greater.
Piezoelectric Effects	None
Termination Type	See Termination Type Table.

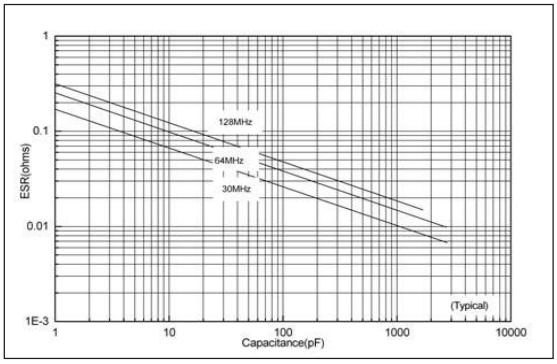
Capacitors are designed and manufactured to meet the requirements of MIL-PRF-55681 and MIL-PRF-123.

◆ Environmental Tests

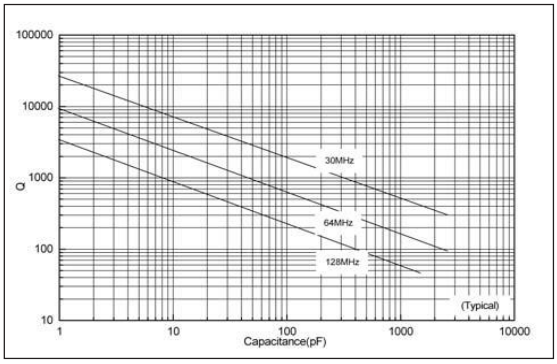
Item	Specifications	Method
Thermal shock	DWV: the initial value IR: Shall not be less than 30% of the initial value. Capacitance change: no more than 0.5% or 0.5 pF, whichever is greater.	MIL-STD-202, Method 107, Condition A. At the maximum rated temperature (-55℃ and 125℃) stay 30 min, the time of removing shall not be more than 3 minutes. Perform the five cycles.
Moisture resistance		MIL-STD-202, Method 106.
Humidity (steady state)	DWV: the initial value IR: the initial value Capacitance change: no more than 0.3% or 0.3pF, whichever is greater.	MIL-STD-202, Method 103, Condition A, With 1.5 Volts D.C. applied while subjected to an environment of 85℃ with 85% relative humidity for 240 hours minimum.
Life	IR: Shall not be less than 30% of the initial value. Capacitance change: no more than 2.0% or 0.5 pF, whichever is greater.	MIL-STD-202, Method 108, for 2000 hours, at 125 ℃, 200% of Voltage for Capacitors, Rated Voltage≦500VDC; 120% of Voltage for Capacitors, 500VDC<RatedVoltage≦1250VDC; 100% of Voltage for Capacitors, Rated Voltage>1250VDC.
Terminal strength	Force : 20lbs typical, 10 lbs min., Duration time: 5 to 10 seconds.	MIL-STD-202, Method 211A, Test condition A. Applied a force and maintained for a period of 5 to 10 seconds. The force shall be in the direction of the axes of the terminations.

◆ 2225C/P Performance Curves

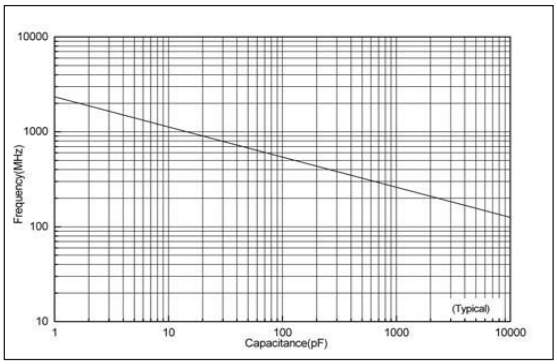
ESR vs Capacitance



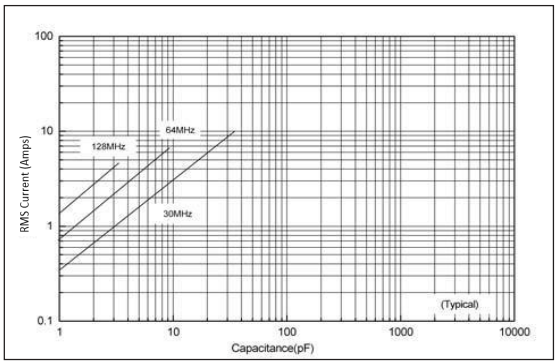
Q vs Capacitance



Series Resonance vs Capacitance



Current Rating vs Capacitance



The current depends on voltage limited:

$$I = \frac{\sqrt{2}}{2} I_{peak} = \frac{\sqrt{2}}{2} \times \frac{V_{rated}}{X} = \sqrt{2}\pi FCV_{rated}$$

$$I = \sqrt{\frac{P_{dissipation}}{ESR}}$$

The current depends on power dissipation limited:

Note: If the thermal resistance of mounting surface is 15°C /W,

then a power dissipation of 4 W will result in the current limited.

We can calculate the current limited.

◆ Recommended Land Pattern Dimensions

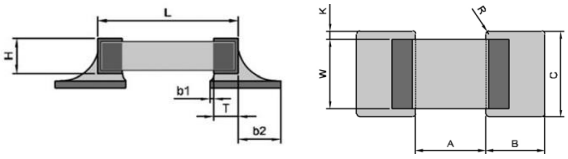
When mounting the capacitor to substrate, it's important to carefully consider that the amount of solder (size of fillet) used has a direct effect upon the capacitor once it's mounted.

1) The greater the amount of solder, the greater the stress to the elements. This may cause the substrate to break or crack.

2) In the situation where two or more devices are mounted onto a common land, be sure to separate the device into exclusive pads by using soldering resist.

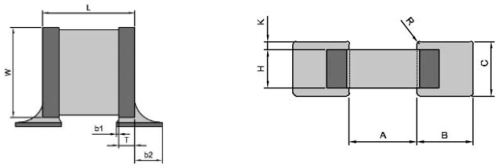
● Horizontal Mounting

Orientation	EIA	A	B	C
Horizontal	2225	3.9	2.5	7.0



● Vertical Mounting

Orientation	EIA	A	B	C
Vertical	2225	3.9	2.5	4.0



◆ Tape & Reel Specifications

Orientation	EIA	A0	B0	K0	W	P0	P1	T	F	Qty Min	Qty /reel	Tape material
Horizontal	2225	6.70	6.20	3.40	16.00	4.00	12.00	0.30	7.50	500	500	Plastic

● Horizontal Orientation