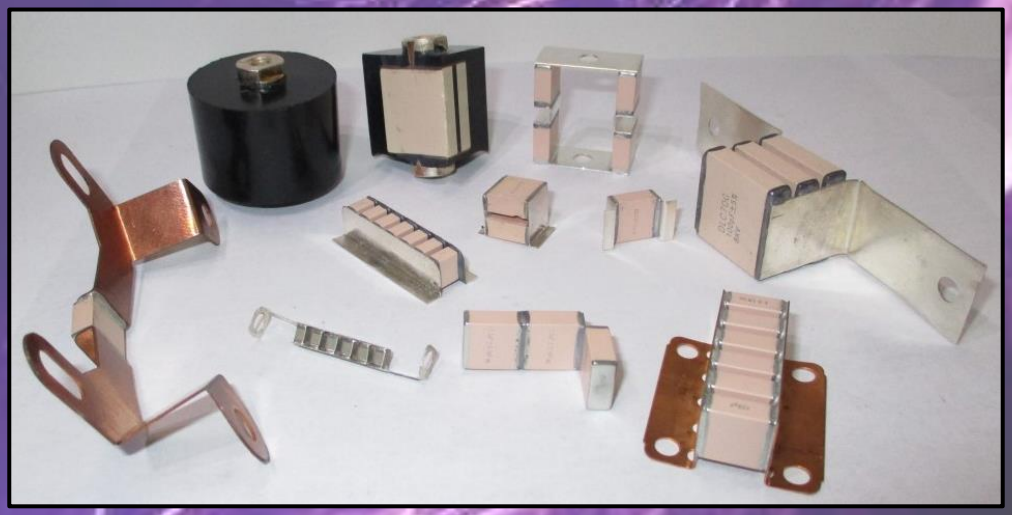
PPI®

HIGH POWER COMPONENTS

FOR HIGH CURRENT/ HIGH VOLTAGE APPLICATIONS



- High-Q Low ESR Capacitors
- High Power Custom Assemblies

Traditional High Q (>10,000) Low ESR Multi-Layer Ceramic Capacitors

Product Features

- High Q
- High Power
- Low ESR/ESL
- Low Noise
- High Self-Resonance
- Ultra Stable Performance

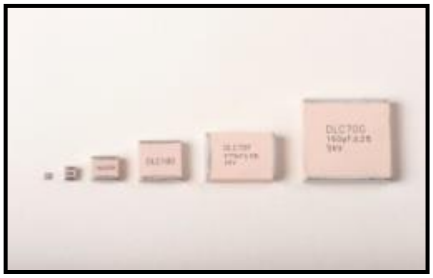
Product Applications

Typical Functional Applications:

- Tuning • Bypass • Coupling
- Feedback • D.C. Blocking
- Impedance Matching

Typical Circuit Applications:

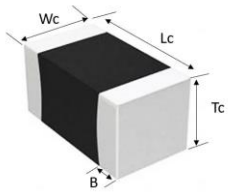
- UHF/Microwave RF Power Amplifiers •
- Mixers • Oscillators • Filter Networks
- Low Noise Amplifiers • Timing Circuits and Delay Lines



Marking shown for illustration purposes only. Actual marking may differ.

Part Numbering

6040	C	100	J	W	502	X
Case Size (0.600" x 0.400")	C =NP0 P = P90	Capacitor Code 100=10x10⁰=10pF 1R0=1.0pF	Capacitance Tolerance *See Table*	Termination Type *See Table*	Rated Voltage *See Table*	Laser Marking



Case Size (Chip) Dimensions

	2225	3838	6040	7676
Length (L_c)	0.225 -0.010+0.25 (5.72 -0.25+ 0.64)	0.380 -0.010+0.015 (9.65 -0.25+0.38)	0.614 -0.010+0.015 (15.6 -0.25+0.38)	0.760 -0.010+0.015 (19.3 -0.25+0.38)
Width (W_c)	0.250 ± 0.015 (6.35 ± 0.38)	0.380±0.010 (9.65±0.25)	0.433±0.010 (11.0±0.25)	0.760±0.010 (19.3±0.25)
Thickness (T_c)	0.150 (3.81) max	0.170 (4.32) max	0.154±0.008 (3.90±0.20) max	0.154±0.008 (3.90±0.20) max
Overlap (B)	0.020~0.470 (0.50~1.20) max	0.024~0.059 (0.60~1.50)	0.063 (1.60) max	0.063 (1.60) max

Temperature Coefficient

C: -55°C to 125°C 0±30ppm/°C; >125 °C to 200°C 0±60ppm/°C
P: +90±20ppm/°C

Rated Capacitance

Capacitance is less than 10pF; for example: 1R0=1.0pF, R denotes decimal point

Capacitance greater than 10pF; for example: 101=100pF, the third number is the power of 10

Tolerance

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

Termination Types and Codes

Magnetic

Termination Code	Type	Magnetic Termination
W	Chip	100% Sn Solder over Nickel Plating
L	Chip	90% Sn10%Pb Tin/Lead Solder over Nickel Plating
MS	Microstrip	Silver-Plated Copper
AR	Axial Ribbon	
RW	Axial Wire	
AW	Radial Wire	

Non-Magnetic

Termination Code	Type	Non-Magnetic Terminations
P	Chip	100%Sn Solder over Copper Plating
MN	Microstrip	Silver-Plated Copper
AN	Axial Ribbon	
RN	Axial Wire	
BN	Radial Wire	

Voltages

Code	Rated Voltage	Code	Rated Voltage
501	500V	362	3600V
102	1000V	502	5000V
152	1500V	722	7200V
202	2000V	802	8000V
252	2500V	103	10000V
302	3000V		

Laser Marking

An “X” at the end of the part number indicates the part is marked.

Performance Requirements

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

All products are in compliance with RoHS instruction.

Marking shown for illustration purposes only.

Traditional High Q (>10,000) Low ESR Multi-Layer Ceramic Capacitors

2225C/P (0.220” x 0.250”)

Product Features

- High Q
- High RF Current/Voltage
- Ultra Stable Performance
- Capacitance Range: 0.5pF to 2700pF
- Working Voltage: 2500V
- Extended Voltage: 3600V

Product Applications

Typical Functional Applications:

- Tuning • Bypass • Coupling
- D.C. Blocking • Impedance Matching

Typical Circuit Applications

- UHF/Microwave RF Power Amplifiers
- Antenna Tuning • Plasma Chambers
- Medical Equipment

Marking shown for illustration purposes only. Actual marking may differ.

Part Numbering

2225	C	100	J	W	252	X	TV
Case Size (0.220” x 0.250”)	C = NP0 P = P90	Capacitor Code 100=10x10⁰=10pF 1R0=1.0pF	Capacitance Tolerance *See Table*	Termination Type *See Table*	Rated Voltage *See Table*	Laser Marking	Add TV for Vertical Orientation

Capacitance Tolerance Codes

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

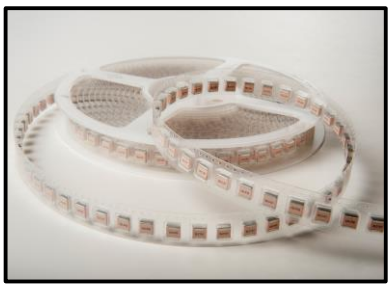
Voltage Codes

Voltage	Code
500V	501
1000V	102
1500V	152
2000V	202
2500V	252
3000V	302
3600V	362

Traditional High Q (>10,000) Low ESR Multi-Layer Ceramic Capacitors

2225C/P (0.220” x 0.250”)

2225C/P Capacitance Values



- **NP0=C; P90=P**

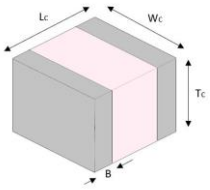
Special capacitances, tolerances and WVDC are available. Please contact PPI.

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

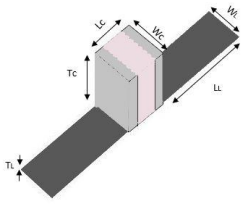
Traditional High Q (>10,000) Low ESR Multi-Layer Ceramic Capacitors

2225C/P (0.220” x 0.250”)

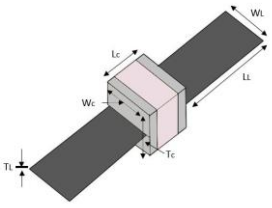
Termination Types and Codes



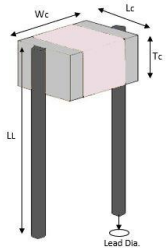
Chip Termination:
Codes: W, L, P



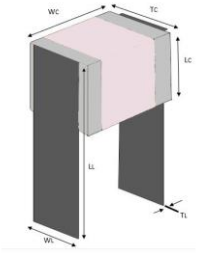
Microstrip Termination:
Codes: MS, MN



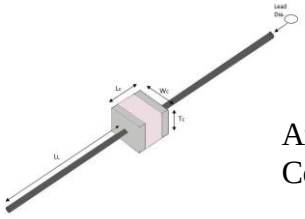
Axial Ribbon Termination:
Code: AR, AN



Radial Wire Termination:
Codes: RW, RN



Radial Ribbon Termination:
Code: RR, FN



Axial Wire Termination:
Codes: AW, BN

Termination Code	Magnetic Termination
W RoHS	100% Sn Solder over Nickel Plating
L	90% Sn10%Pb Tin/Lead Solder over Nickel Plating
MS RoHS	Silver-Plated Copper
AR RoHS	
RR RoHS	
RW RoHS	
AW RoHS	

Termination Code	Non-Magnetic Termination
P RoHS	100%Sn Solder over Copper Plating
MN RoHS	Silver-Plated Copper
AN RoHS	
FN RoHS	
RN RoHS	
BN RoHS	

Note: “Non-Magnetic” means no magnetic materials.

Traditional High Q (>10,000) Low ESR Multi-Layer Ceramic Capacitors

2225C/P (0.220” x 0.250”)

Termination Types For Termination Types images, see previous page

Unit: inch (millimeter)

Magnetic Terminations

		Capacitor Dimensions				Lead Dimensions		
		Length	Width	Thickness	Overlap	Length	Width	Thickness
Code	Term.	Lc	Wc	Tc	B	LL	WL	TL
W/L	Chip	0.225 -0.010+0.25 (5.72 -0.25+ 0.64)	0.250 ± 0.015 (6.35 ± 0.38)	0.165 (4.19) max	0.020~0.047 (0.50~1.20) max	---	---	---
MS	Microstrip	0.245 ± 0.025 (6.22 ± 0.64)	0.250 ±0.015 (6.35 ± 0.38)	0.150 (3.81) max		0.500 (12.70) min	0.240 ±0.005 (6.1 ± 0.13)	0.008 ±0.001 (0.2 ±0.025)
AR	Axial Ribbon							
RR	Radial Ribbon					0.354 (9.00) min	0.118 ±0.005 (3.0 ±0.13)	0.012 ±0.001 (0.3 ±0.025)
RW	Radio Wire					0.709 (18.00) min	Dia. = 0 .031 ±0.004 (0.80 ±0.10)	
AW	Axial Wire					0.906 (23.00) min		

Non-Magnetic Terminations

		Capacitor Dimensions				Lead Dimensions		
		Length	Width	Thickness	Overlap	Length	Width	Thickness
Code	Term.	Lc	Wc	Tc	B	LL	WL	TL
P	Chip	0.225 -0.010+0.25 (5.72 -0.25+ 0.64)	0.250 ± 0.015 (6.35 ± 0.38)	0.165 (4.19) max	0.020~0.047 (0.50~1.20) max			
MN	Microstrip	0.245 ± 0.025 (6.22 ± 0.64)	0.250 ±0.015 (6.35 ± 0.38)	0.150 (3.81) max		0.500 (12.70) min	0.240 ±0.005 (6.1 ± 0.13)	0.008 ±0.001 (0.2 ±0.025)
AN	Axial Ribbon							
FN	Radial Ribbon					0.354 (9.00) min	0.118 ±0.005 (3.0 ±0.13)	0.012 ±0.001 (0.3 ±0.025)
RN	Radial Wire					0.709 (18.00) min	Dia. = 0.031 ±0.004 (0.80 ±0.10)	
BN	Axial Wire					0.906 (23.00) min		

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

Traditional High Q (>10,000) Low ESR Multi-Layer Ceramic Capacitors

2225C/P (0.220” x 0.250”)

Electrical Specifications

Quality Factor (Q)	Greater than 10,000 at 1 MHz
Insulation Resistance (IR)	Test Voltage: 500V 10^5 Megaohms min. @ +25°C rated WVDC 10^4 Megaohms min. @ +125°C rated WVDC
Rated Voltage	See Rated Voltage Table
Dielectric Withstanding Voltage (WVDC)	250% of Rated Voltage of 5 seconds, Rated Voltage ≤ 500VDC 150% of Voltage for 5 seconds, 500VDC <Rated Voltage ≤ 1250 VDC 120% of Voltage for 5 seconds, Rated Voltage > 1250 VDC
Operating Temperature Range	-55°C to 200°C
Temperature Coefficient (TC)	C: -55°C to 125°C 0±30ppm/°C; >125°C to 200°C 0±60ppm/°C P: -55°C to 200°C +90±20ppm/°C
Capacitance Drift	±0.02% or ±0.02pF, whichever is greater
Piezoelectric Effects	None
Termination Type	See Termination Type Table

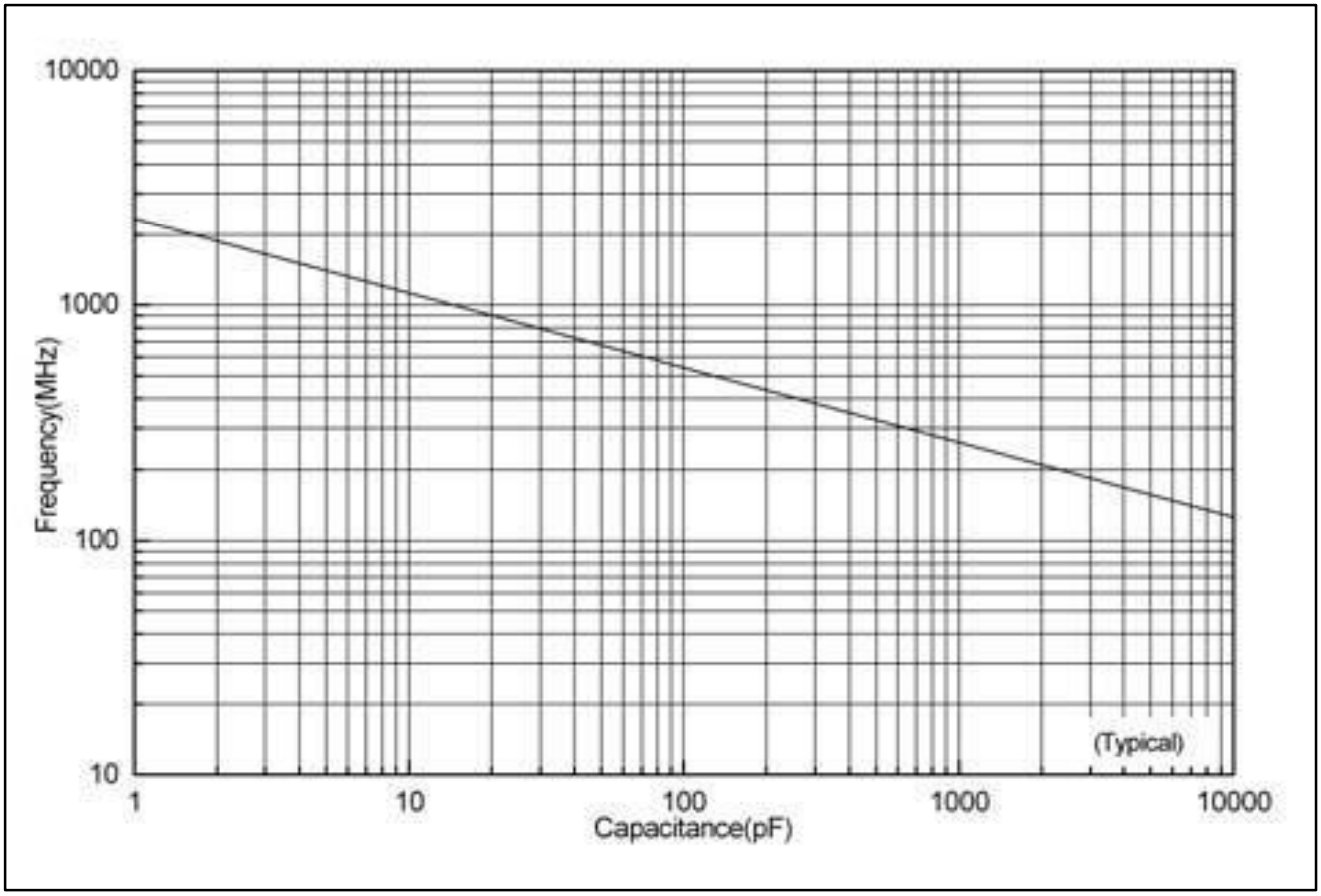
Capacitors are designed and manufactured to meet the requirements of MIL-PRF-55681 and MIL-PRF-123.

Environmental Specifications

	Specification	Test Parameters
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 0.5pF, whichever is greater.	MIL-STD-202, Method 107, Condition A. At the maximum rated temperature (-55°C and 200°C) stay 30 minutes, the time of removing shall not be more than 3 minutes. Perform 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 1.5Volts DC applied while subjected to an environment of 85°C 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 0.5pF, whichever is greater.	MIL-STD-202, Method 108. For 2000 hours, at 200°C. 200% of Voltage for Capacitors, Rated Voltage ≤ 500VDC; 120% of Voltage for Capacitors, 500VDC< Rated Voltage ≤1250VDC; 100% for Voltage for Capacitors, Rated Voltage >1250VDC
Terminal Strength	**Force:** 20lbs typical, 10lbs. Minimum. **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.

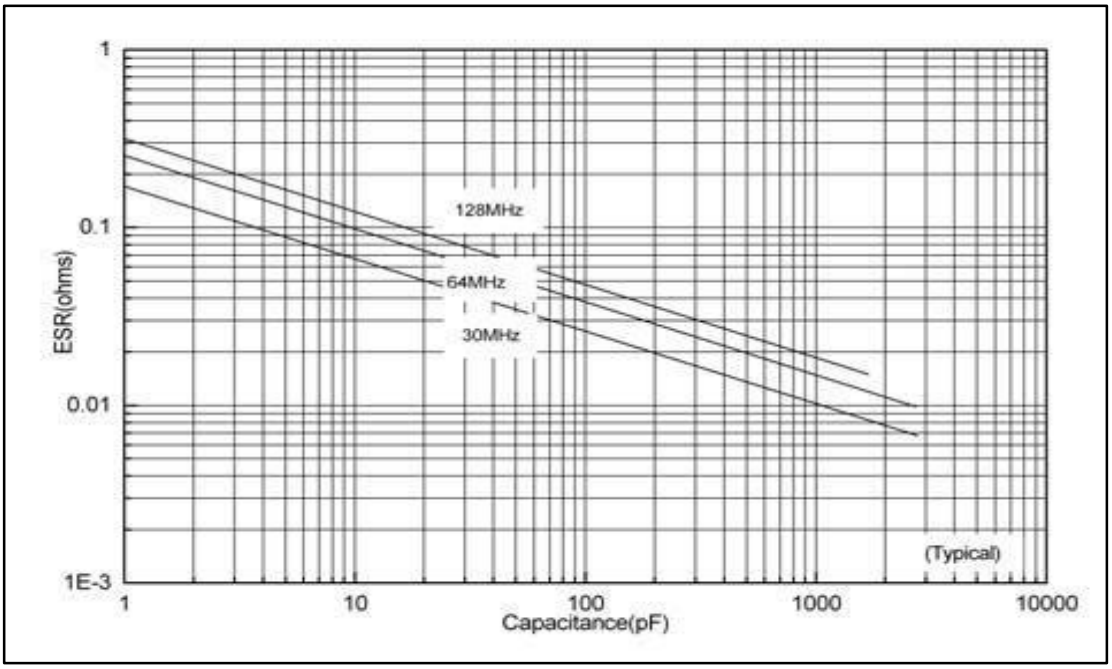
Series Resonance vs. Capacitance

Series Resonance vs. Capacitance



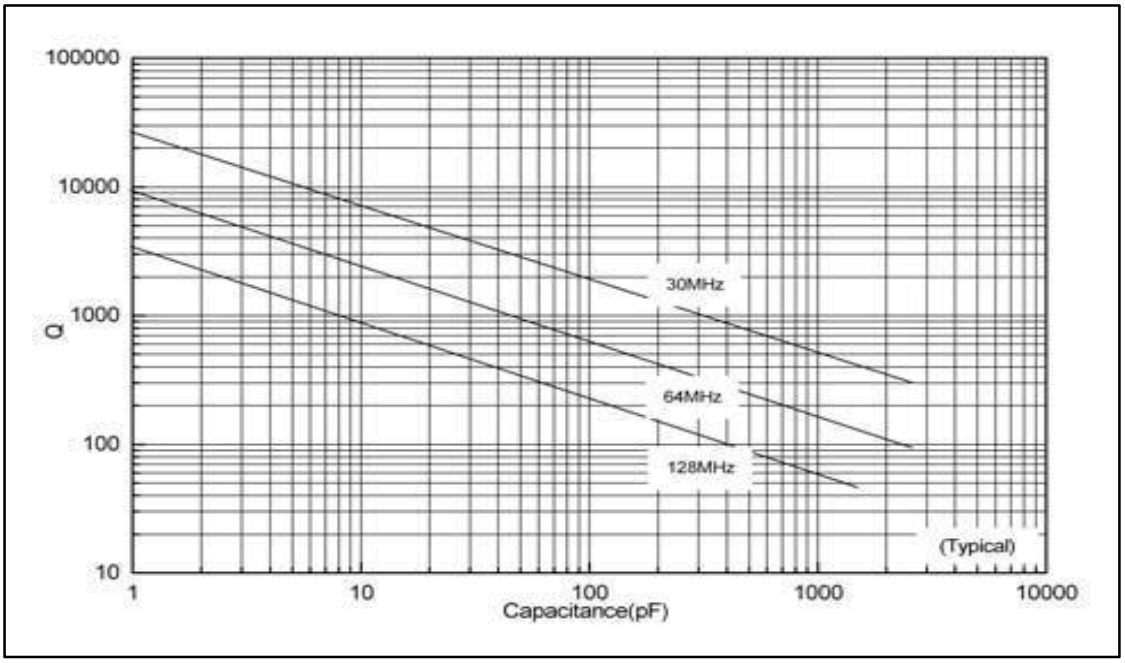
ESR vs. Frequency

2225C/P ESR vs Frequency



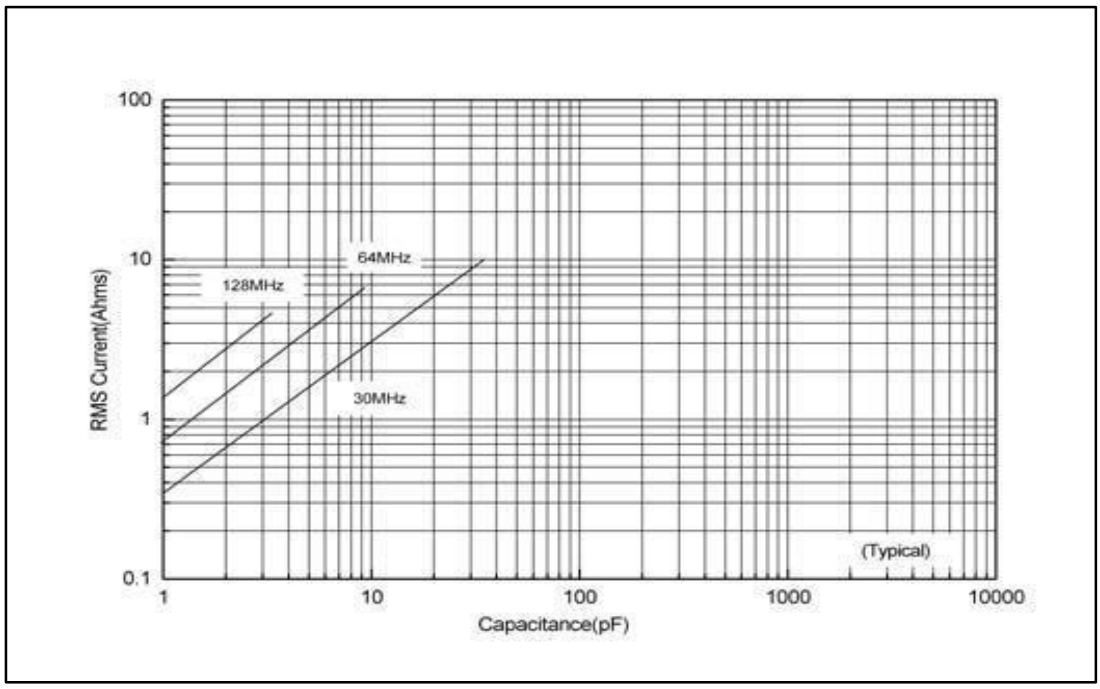
Q vs. Capacitance

Q vs Capacitance



Current Rating vs. Capacitance

2225C/P Current Rating vs Capacitance



The current depends on voltage limited: $I = \frac{\sqrt{2}}{2} I_{peak} = \frac{\sqrt{2}}{2} \times \frac{V_{rated}}{X_C} = \sqrt{2}\pi f C V_{rated}$

The current depends on power dissipation limited: $I = \sqrt{\frac{P_{dissipation}}{ESR}}$

Note: If the thermal resistance of mounting surface is 15°C/W, then a power dissipation of 4W will result in the current limited.

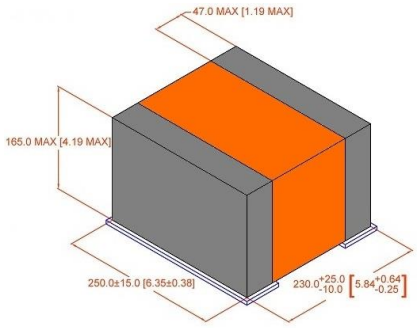
We can calculate the current limited.

Traditional High Q (>10,000) Low ESR Multi-Layer Ceramic Capacitors

2225C/P (0.220” x 0.250”)

Capacitor Application Program

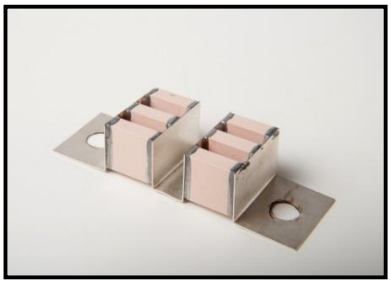
Passive Plus, Inc.’s brand new **online Capacitor Application Program (**C.A.P.) helps Engineers and Designers select capacitors according to parameters such as cap value and frequency. C.A.P. allows engineers to insert capacitors requirements (Cap value, Frequency), producing Scattering Matrices (S2P) Charts while providing options (Case Size, Terminations, Mounting), and parameters (ESR, Q, Impedance) along with Datasheets. Once engineers have determined their capacitor requirements, C.A.P. also includes online Requests For Quotes (RFQs) and/or sample requests.



Custom Assemblies

Passive Plus offers Capacitor Assemblies for high power requirements. Typical assemblies are configured in series and/or parallel combinations, producing higher voltage/current handling capabilities, extended capacitance range and tighter tolerances.

To get started, simply send us either a mechanical drawing or circuit conditions and we can recommend a solution. All components are 100% up-screened for Partial Discharge and Sonoscanned. All assemblies include a 100hr Military burn in.



2225C/P (0.220” x 0.250”)

Recommended Land Pattern Dimensions

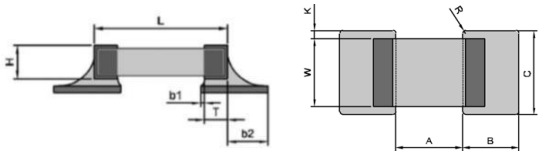
When mounting the capacitor to substrate, it's important to carefully consider that the amount of solder (size of fillet) used has a direct effect upon the capacitor once it's mounted.

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.

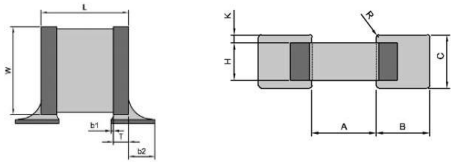
Horizontal Mounting (mm)

A	B	C
3.9	2.5	7.0



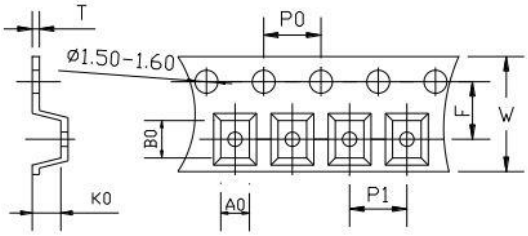
Vertical Mounting (mm)

A	B	C
3.9	2.5	4.0



Tape & Reel Specifications (mm)

Horizontal Orientation



Case Size	Orientation	Measurement Unit	W	P0	P1	T	F	Minimum Qty per Reel	Std Qty per Reel	Tape Material
2225CP	H	in.	0.630	0.157	0.472	0.012	0.295	500	500	Plastic
		mm	16.00	4.00	12.00	0.30	7.50			
	V	in.	0.630	0.157	0.315	0.020	0.295	500	500	Plastic
		mm	16.00	4.00	8.00	0.50	7.50			

A_0 B_0 K_0

- Determined by component size. Typical clearance between the cavity and the component is:
  .05 (.002) min to .50 (.020) max for 8mm tape and .50 (.002) min to .65 (.026) max for 12mm tape.
- The component cannot rotate more than 20° within the determined cavity.

Traditional High Q (>10,000) Low ESR Multi-Layer Ceramic Capacitors

3838C/P (0.380” x 0.380”)

Product Features

- High Q
- High RF Current/Voltage
- Ultra Stable Performance
- Capacitance Range: 0.5pF to 5100pF
- Working Voltage: 3600V
- Extended Voltage: 7200V

Product Applications

Typical Functional Applications:
• Tuning • Bypass • Coupling
• D.C. Blocking • Impedance Matching

Typical Circuit Applications
• HF/ RF Power Amplifiers • Antenna Tuning • Plasma Chambers • Medical Equipment • Transmitters

Marking shown for illustration purposes only. Actual marking may differ.

Part Numbering

3838 C 100 J W 362 X

- 3838 — Case Size (0.380” x 0.380”)
- C — C=NP0 P=P90
- 100 — Capacitor Code 100=10x10⁰=10pF 1R0=1.0pF
- J — Capacitance Tolerance *See Table*
- W — Termination Type *See Table*
- 362 — Rated Voltage *See Table*
- X — Laser Marking

Capacitance Tolerance Codes

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

Voltage Codes

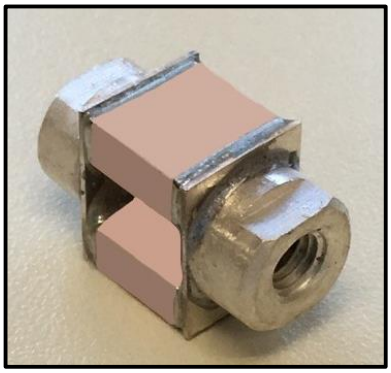
Voltage	Code
500V	501
1000V	102
2500V	252
3600V	362
7200V	722

Traditional High Q (>10,000) Low ESR Multi-Layer Ceramic Capacitors

3838C/P (0.380” x 0.380”)

3838C/P Capacitance Values

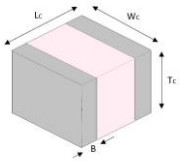
Special capacitances, tolerances and WVDC are available. Please contact PPI.



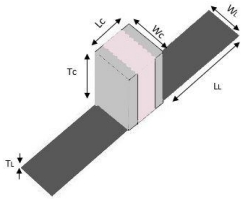
Cap. pF	Cap Code	Tol.	Rated WVDC Std.	Rated WVDC Ext.	Cap. pF	Cap Code	Tol.	Rated WVDC Std.	Rated WVDC Ext.	Cap. pF	Cap Code	Tol.	Rated WVDC Std.	Rated WVDC Ext.	Cap. pF	Cap Code	Tol.	Rated WVDC
0.5	0R5	B,C, D	3600V	7200V	**4.7**	4R7	B,C, D	3600V	7200V	**51**	510	F,G, J,K	3600V	7200V	**560**	561	F,G, J,K	2500V
0.6	0R6				**5.1**	5R1				**56**	560				**620**	621		
0.7	0R7				**5.6**	5R6				**62**	620				**680**	681		
0.8	0R8				**6.2**	6R2				**68**	680				**750**	751		
0.9	0R9				**6.8**	6R8				**75**	750				**820**	821	F,G, J,K	1000V
1.0	1R0				**7.5**	7R5				**82**	820				**910**	911		
1.1	1R1				**8.2**	8R2				**91**	910				**1000**	102		
1.2	1R2				**9.1**	9R1				**100**	101				**1100**	112		
1.3	1R3				**10**	100	F,G, J,K	3600V	7200V	**110**	111				**1200**	122		
1.4	1R4				**11**	110				**120**	121				**1500**	152		
1.5	1R5				**12**	120				**130**	131				**1800**	182		
1.6	1R6				**13**	130				**150**	151				**2200**	222		
1.7	1R7				**15**	150				**160**	161				**2400**	242		
1.8	1R8				**16**	160				**180**	181				**2700**	272	F,G, J,K	500V
1.9	1R9				**18**	180				**200**	201	F,G, J,K	3600V	N/A	**3000**	302		
2.0	2R0				**20**	200				**220**	221				**3300**	332		
2.1	2R1				**22**	220				**240**	241				**3600**	362		
2.2	2R2				**24**	240				**270**	271				**3900**	392		
2.4	2R4				**27**	270				**300**	301				**4300**	432		
2.7	2R7				**30**	300				**330**	331				**4700**	472		
3.0	3R0				**33**	330				**360**	361				**5100**	512		
3.3	3R3				**36**	360				**390**	391							
3.6	3R6				**39**	390				**430**	431	F,G, J,K	2500V	N/A				
3.9	3R9				**43**	430				**470**	471							
4.3	4R3				**47**	470				**510**	511							

3838C/P (0.380” x 0.380”)

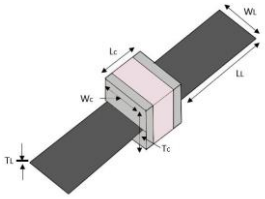
Termination Types and Codes



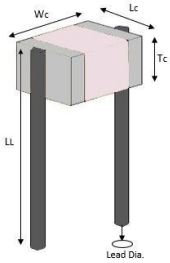
Chip Termination:
Codes: **W, L, P**



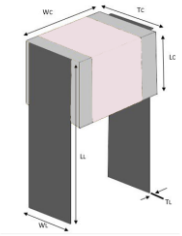
Microstrip Termination:
Codes: **MS, MN**



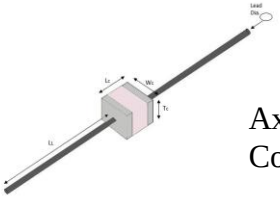
Axial Ribbon Termination:
Code: **AR, AN**



Radial Wire Termination:
Codes: **RW, RN**



Radial Ribbon Termination:
Code: **RR, FN**



Axial Wire Termination:
Codes: **AW, BN**

Termination Code	Magnetic Termination
W RoHS	100% Sn Solder over Nickel Plating
L	90% Sn10%Pb Tin/Lead Solder over Nickel Plating
MS RoHS	Silver-Plated Copper
AR RoHS	
RR RoHS	
RW RoHS	
AW RoHS	

Termination Code	Non-Magnetic Terminations
P RoHS	100%Sn Solder over Copper Plating
MN RoHS	Silver-Plated Copper
AN RoHS	
FN RoHS	
RN RoHS	
BN RoHS	

Note: “Non-Magnetic” means no magnetic materials.

Traditional High Q (>10,000) Low ESR Multi-Layer Ceramic Capacitors

3838C/P (0.380” x 0.380”)

Termination Types For Termination Types images, see previous page

Unit: inch (millimeter)

Magnetic Terminations

		Capacitor Dimensions				Lead Dimensions		
Code	Term.	Length Lc	Width Wc	Thickness Tc	Overlap B	Length LL	Width WL	Thickness TL
W	Chip	0.380 -0.010+0.015 (9.65 - 0.25+0.38)	0.380 ±0.010 (9.65±0.25)	0.170 (4.32) max	0.024~0.059 (0.60~1.50)			
MS	Microstrip	0.380 -0.010.+0.015 (9.65 -0.25+0.38)	0.380 ±0.010 (9.65 ±0.25)	0.177 (4.50) max		0.728 (18.50) min	0.350 ± 0.020 (8.89±0.50) 0.315±0.010 (8.00±0.25)	0.008±0.001 (0.20± 0.025)
AR	Axial Ribbon							
RR	Radial Ribbon					0.354 (9.00) min	0.118 ± 0.010 (3.0 ± 0.25)	0.012 ± 0.001 (0.3 ± 0.025)
RW	Radial Wire					0.709 (18.00) min	Dia.: 0.031±0.004 (0.80 ± 0.10)	
AW	Axial Wire					0.906 (23.00) min		

Non-Magnetic Terminations

		Capacitor Dimensions				Lead Dimensions		
Code	Term.	Length Lc	Width Wc	Thickness Tc	Overlap B	Length LL	Width WL	Thickness TL
P	Chip	0.380 -0.010+0.015 (9.65 - 0.25+0.38)	0.380 ±0.010 (9.65±0.25)	0.170 (4.32) max	0.024~0.059 (0.60~1.50)			
MN	Microstrip	0.380 -0.010+0.015 (9.65 -0.25+0.38)	0.380 ±0.010 (9.65 ±0.25)	0.177 (4.50) max		0.728 (18.50) min	0.350 ± 0.020 (8.89±0.50) 0.315±0.010 (8.00±0.25)	0.008 ±0.001 (0.20 ± 0.025)
AN	Axial Ribbon							
FN	Radial Ribbon					0.354 (9.00) min	0.118 ± 0.010 (3.0 ± 0.25)	0.012 ± 0.001 (0.3 ± 0.025)
RN	Radial Wire					0.709 (18.00) min	Dia.: 0.031 ±0 .004 (0.80 ± 0.10)	
BN	Axial Wire					0.906 (23.00) min		

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

Traditional High Q (>10,000) Low ESR Multi-Layer Ceramic Capacitors

3838C/P (0.380” x 0.380”)

Electrical Specifications

Quality Factor (Q)	Greater than 10,000 at 1 MHz
Insulation Resistance (IR)	Test Voltage: 500V 10^5 Megaohms min. @ +25°C rated WVDC 10^4 Megaohms min. @ +125°C rated WVDC
Rated Voltage	See Rated Voltage Table
Dielectric Withstanding Voltage (WVDC)	250% of Rated Voltage of 5 seconds, Rated Voltage ≤ 500VDC 150% of Voltage for 5 seconds, 500VDC <Rated Voltage ≤ 1250 VDC 120% of Voltage for 5 seconds, Rated Voltage > 1250 VDC
Operating Temperature Range	-55°C to 200°C
Temperature Coefficient (TC)	C: -55°C to 125°C 0±30ppm/°C; >125°C to 200°C 0±60ppm/°C P: -55°C to 200°C +90±20ppm/°C
Capacitance Drift	±0.02% or ±0.02pF, whichever is greater
Piezoelectric Effects	None
Termination Type	See Termination Type Table

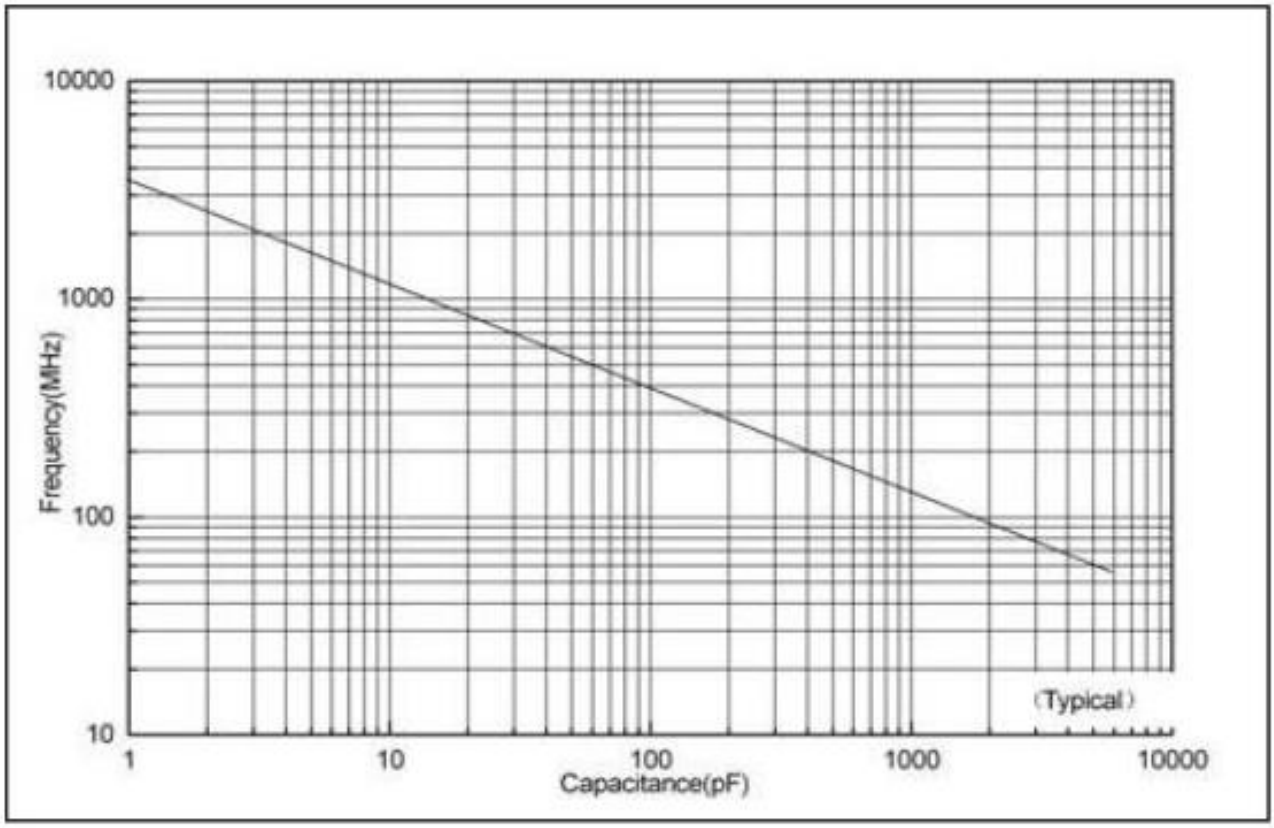
Environmental Specifications

	Specification	Test Parameters
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 0.5pF, whichever is greater.	MIL-STD-202, Method 107, Condition A. At the maximum rated temperature (-55°C and 200°C) stay 30 minutes, the time of removing shall not be more than 3 minutes. Perform 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 1.5Volts DC applied while subjected to an environment of 85°C 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 0.5pF, whichever is greater.	MIL-STD-202, Method 108. For 2000 hours, at 200°C. 200% of Voltage for Capacitors, Rated Voltage ≤ 500VDC; 120% of Voltage for Capacitors, 500VDC< Rated Voltage ≤1250VDC; 100% for Voltage for Capacitors, Rated Voltage >1250VDC
Terminal Strength	**Force:** 20lbs typical, 10lbs. 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.

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

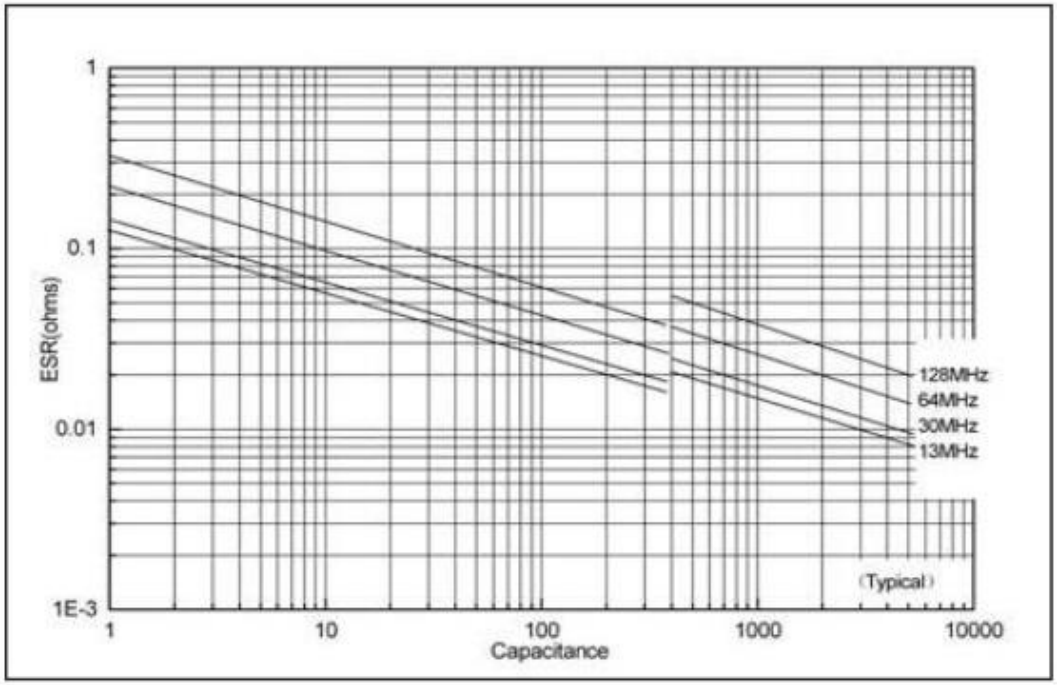
Series Resonance vs. Capacitance

Series Resonance vs. Capacitance



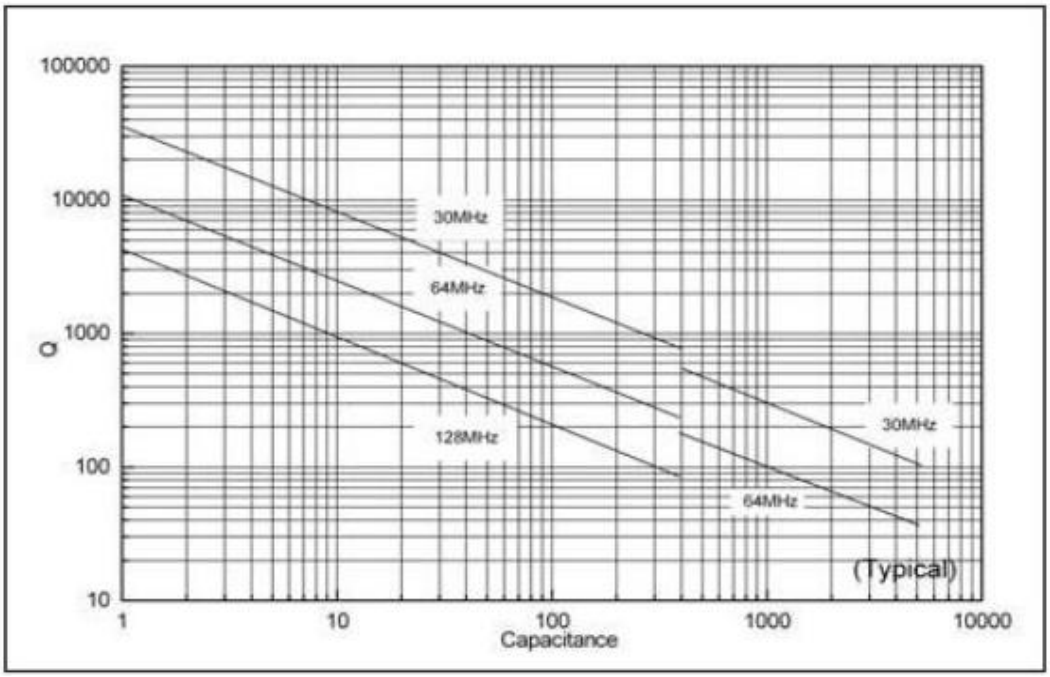
ESR vs. Frequency

ESR vs Frequency



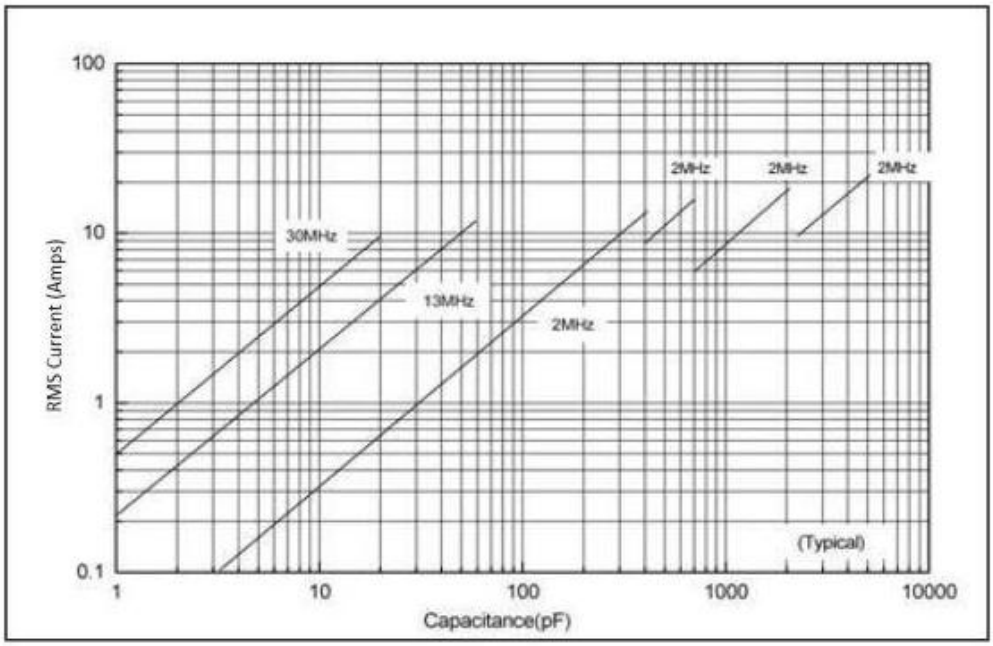
Q vs. Capacitance

Q vs Capacitance



Current Rating vs. Capacitance

3838C/P Current Rating vs Capacitance

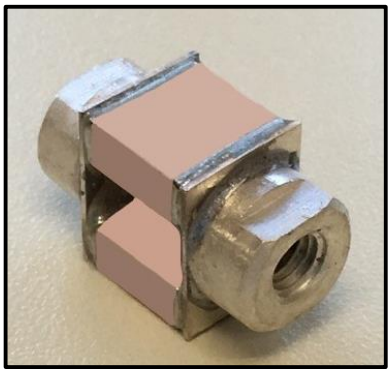


The current depends on voltage limited: $I = \frac{\sqrt{2}}{2} I_{peak} = \frac{\sqrt{2}}{2} \times \frac{V_{rated}}{X_C} = \sqrt{2}\pi fCV_{rated}$

The current depends on power dissipation limited: $I = \sqrt{\frac{P_{dissipation}}{ESR}}$

Note: If the thermal resistance of mounting surface is 12°C/W, then a power dissipation of 5W will result in the current limited. We can calculate the current limited.

Custom Assemblies



Passive Plus offers Capacitor Assemblies for high power requirements. Typical assemblies are configured in series and/or parallel combinations, producing higher voltage/current handling capabilities, extended capacitance range and tighter tolerances.

To get started, simply send us either a mechanical drawing or circuit conditions and we can recommend a solution. All components are 100% up-screened for Partial Discharge and Sonoscanned. All assemblies include a 100hr Military burn in.

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.

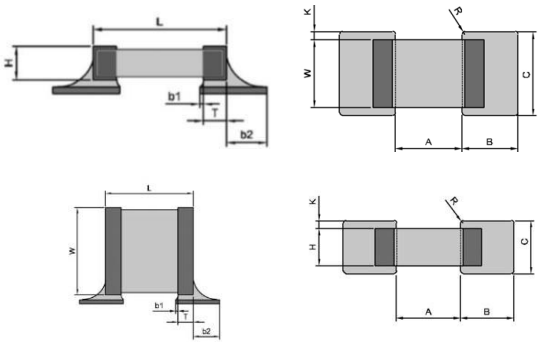
2) In the situation where two or more devices are mounted onto a common land, be sure to separate the device into exclusive pads by using soldering resist.

Horizontal Mounting (mm)

A	B	C
7.1	3.0	10.2

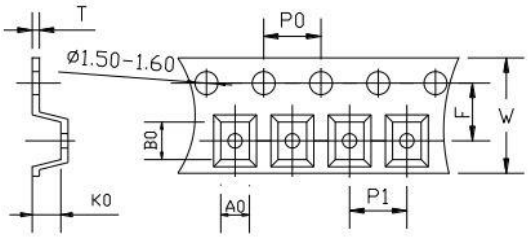
Vertical Mounting* (mm)

A	B	C
7.1	3.0	5.0



Tape & Reel Specifications (mm)

Horizontal Orientation



Orientation	W	P0	P1	T	F	Qty Min	Qty/ reel	Tape Material
Horizontal	16.00	4.00	12.00	0.30	7.50	50	200	Plastic

A_0 B_0 K_0

- Determined by component size. Typical clearance between the cavity and the component is:
  .05 (.002) min to .50 (.020) max for 8mm tape and .50 (.002) min to .65 (.026) max for 12mm tape.
- The component cannot rotate more than 20° within the determined cavity.

UHF/RF High Q Power Transmitter Capacitors (NP0 TC) Multi-Layer Ceramic Capacitors

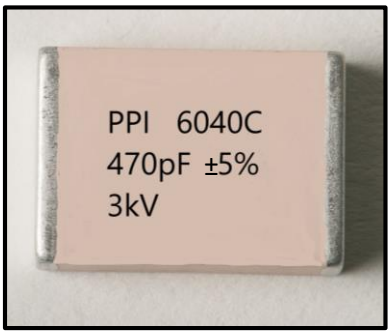
6040C (0.600” x 0.400”)

Product Features

- High Q
- High RF Current/Voltage
- Ultra Stable Performance
- Capacitance Range: 1.0pF to 6800pF
- Working Voltage: 5000V
- Extended Voltage: 8000V

Typical Circuit Applications

- Semiconductor Manufacturing
- High Energy Power Transfers
- Plasma Chambers
- Medical Equipment



Marking shown for illustration purposes only. Actual marking may differ.

Part Numbering

6040 C 100 J W 502 X

- 6040 — Case Size (0.600” x 0.400”)
- C — C=NP0
- 100 — Capacitor Code: 100=10x10⁰=10pF, 1R0=1.0pF
- J — Capacitance Tolerance *See Table*
- W — Termination Type *See Table*
- 502 — Rated Voltage *See Table*
- X — Laser Marking

Capacitance Tolerance Codes

Code	B	C	D	F	G	J	K
Tol.	±0.1pF	±0.25pF	±0.5pF	±1%	±2%	±5%	±10%

Voltage Codes

Voltage	Code
1000V	102
2000V	202
3000V	302
5000V	502
8000V	802

UHF/RF High Q Power Transmitter Capacitors (NP0 TC)
Multi-Layer Ceramic Capacitors

6040C (0.600” x 0.400”)

6040C Capacitance Values

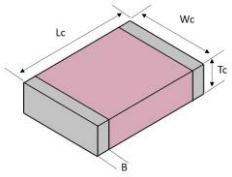
For special capacitances, tolerances and WVDC, please contact PPI.

Marking shown for illustration purposes only.
Actual marking may differ.

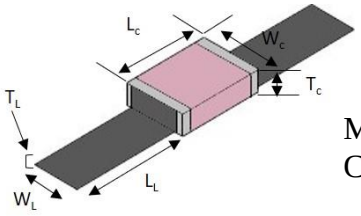
Cap. pF	Cap Code	Tol.	Rated WVDC Std.	Rated WVDC Ext.
1.0	1R0	B,C, D	5000V	8000V
1.2	1R2			
1.5	1R5			
1.8	1R8			
2.2	2R2			
2.7	2R7			
3.3	3R3			
3.9	3R9			
4.7	4R7			
5.6	5R6			
6.8	6R8			
8.2	8R2			
10	100	F,G, J,K	5000V	8000V
12	120			
15	150			
18	180			
22	220			
27	270			
33	330			
39	390	F,G, J,K	5000V	8000V
47	470			
56	560			
68	680			
82	820			
100	101			
120	121	F,G, J,K	3000V	5000V
150	151			
180	181			
220	221			
270	271			
330	331			
390	391			
470	471			
560	561			
680	681			
820	821	F,G, J,K	2000V	3000V
1000	102			
1200	122			
1500	152	F,G, J,K	2000V	3000V
1800	182			
2200	222			
2700	272	F,G, J,K	1000V	2000V
3300	332			
4700	472			
5100	512			
5600	562			
6800	682			

6040C (0.600” x 0.400”)

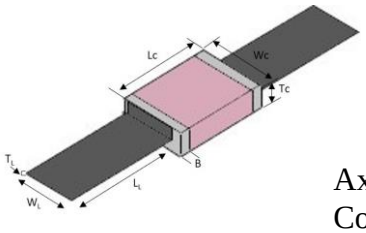
Termination Types and Codes



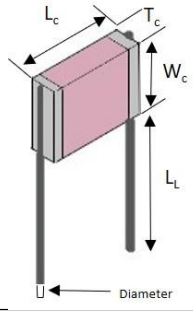
Chip Termination:
Codes: **W, L, P**



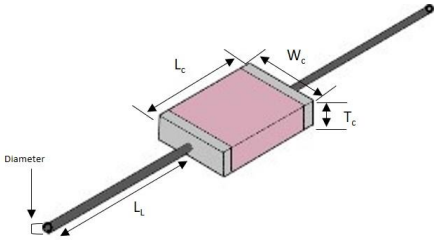
Microstrip Termination:
Codes: **MS, MN**



Axial Ribbon Termination:
Code: **AR, AN**



Radial Wire Termination:
Codes: **RW, RN**



Axial Wire Termination:
Codes: **AW, BN**

Termination Code	Magnetic Termination
W RoHS	100% Sn Solder over Nickel Plating
L	90% Sn10%Pb Tin/Lead Solder over Nickel Plating
MS RoHS	Silver-Plated Copper
AR RoHS	
RW RoHS	
AW RoHS	

Termination Code	Non-Magnetic Terminations
P RoHS	100%Sn Solder over Copper Plating
MN RoHS	Silver-Plated Copper
AN RoHS	
RN RoHS	
BN RoHS	

Note: “Non-Magnetic” means no magnetic materials.

Terminations

For Termination Types images, see previous page

Unit: inch (millimeter)

Magnetic Terminations

		Capacitor Dimensions				Lead Dimensions		
		Length	Width	Thickness	Overlap	Length	Width	Thickness
Code	Term.	Lc	Wc	Tc	B	LL	WL	TL
W	Chip	0.614 -0.010+0.015 (15.6 -0.25+0.38)	0.433±0.010 (11.0±0.25)	0.154±0.008 (3.90±0.20) max	0.063 (1.60) max	-	-	-
MS	Microstrip	0.614 -0.010+0.015 (15.6 -0.25+0.38)	0.433±0.010 (11.0±0.25)	0.154±0.008 (3.90±0.20) max	-	0.787 (20.0) min	0.350 ± 0.010 (8.89±0.25)	0.008±0.001 (0.20± 0.025)
AR	Axial Ribbon							
RW	Radial Wire					0.787 (20.00) min	Dia.: 0.030±0.004 (0.80 ± 0.10)	
AW	Axial Wire					0.984 (25.00) min		

Non-Magnetic Terminations

		Capacitor Dimensions				Lead Dimensions		
		Length	Width	Thickness	Overlap	Length	Width	Thickness
Code	Term.	Lc	Wc	Tc	B	LL	WL	TL
P	Chip	0.614 -0.010+0.015 (15.6 -0.25+0.38)	0.433±0.010 (11.0±0.25)	0.154±0.008 (3.90±0.20) max	0.063 (1.60) max	-	-	-
MN	Microstrip	0.614 -0.010+0.015 (15.6 -0.25+0.38)	0.433±0.010 (11.0±0.25)	0.154±0.008 (3.90±0.20) max	-	0.787 (20.0) min	0.350 ± 0.010 (8.89±0.25)	0.008 ±0.001 (0.20 ± 0.025)
AN	Axial Ribbon							
RN	Radial Wire					0.787 (20.00) min	Dia.: 0.031 ±0 .004 (0.80 ± 0.10)	
BN	Axial Wire					0.984 (25.00) min		

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

UHF/RF High Q Power Transmitter
Capacitors (NP0 TC)
Multi-Layer Ceramic Capacitors

6040C (0.600” x 0.400”)

Electrical Specifications

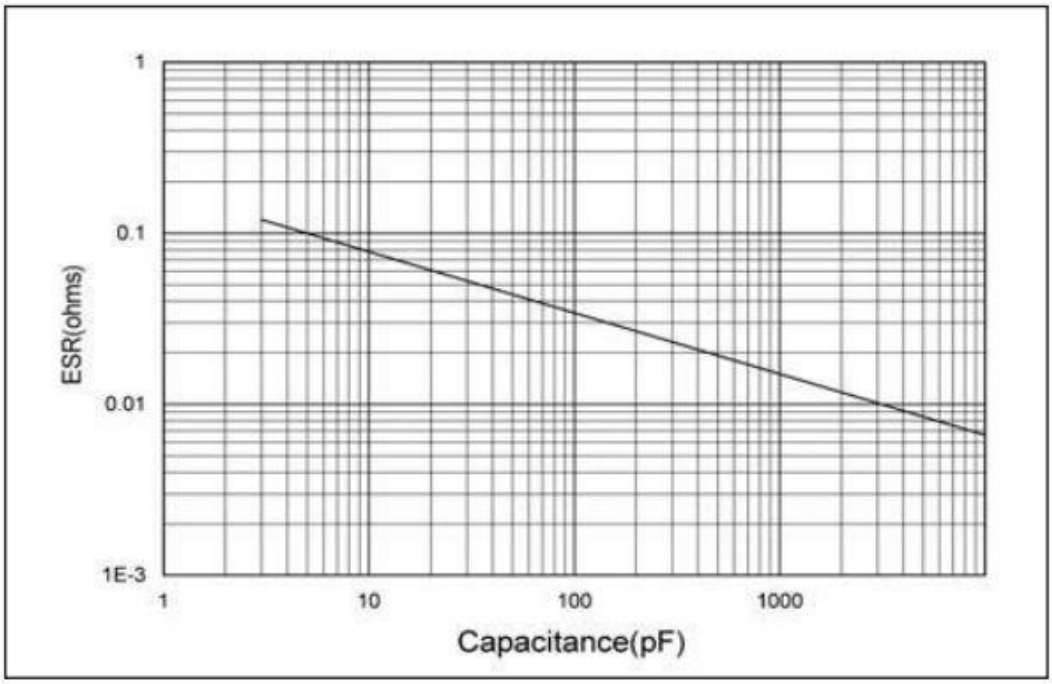
Quality Factor (Q)	No less than 1000pF, Q value more than 2000, Test Frequency 1MHz; More than 1000pF, Q value more than 2000, Test Frequency 1MHz
Insulation Resistance (IR)	Test Voltage: 500V 10^5 Megaohms min. @ +25°C rated WVDC 10^4 Megaohms min. @ +125°C rated WVDC
Rated Voltage	See Rated Voltage Table
Dielectric Withstanding Voltage (WVDC)	250% of Voltage of 5 seconds, Rated Voltage ≤ 500VDC 150% of Voltage for 5 seconds, 500VDC <Rated Voltage ≤ 1250 VDC 120% of Voltage for 5 seconds, Rated Voltage > 1250 VDC
Operating Temperature Range	-55°C to 175°C
Temperature Coefficient (TC)	-55°C to 125°C 0±30ppm/°C >125°C to 175°C 0±60ppm/°C
Capacitance Drift	±0.02% or ±0.02pF, whichever is greater
Piezoelectric Effects	None
Termination Type	See Termination Type Table

Environmental Specifications

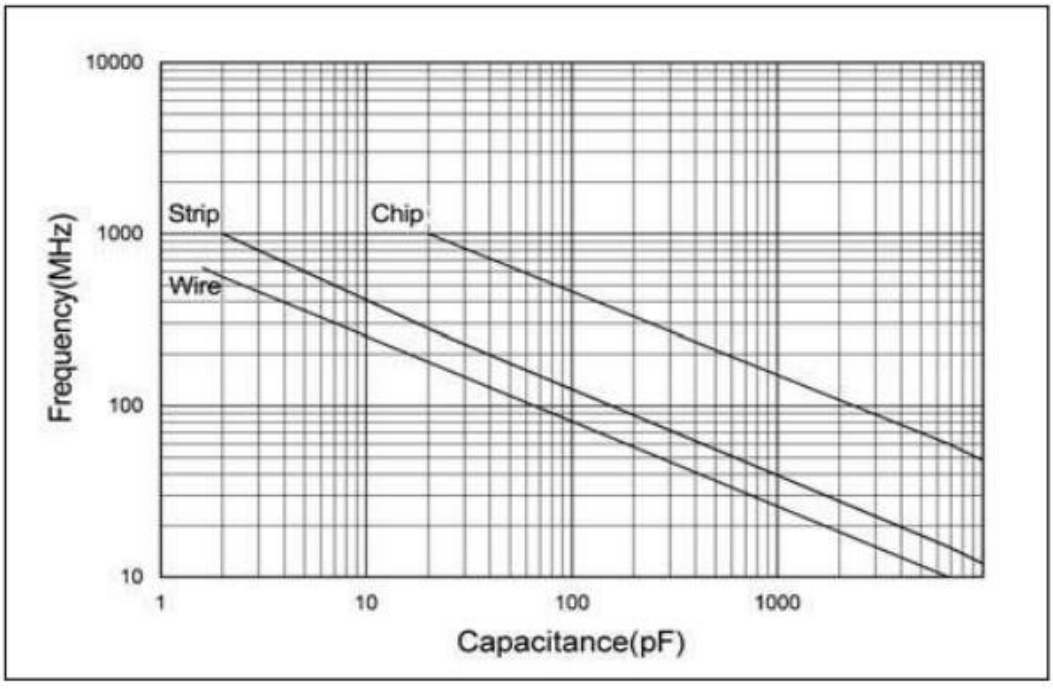
	Specification	Test Parameters
Thermal Shock	**DWV:** The initial value **IR:** Shall not be less than 30% of the initial value. **Capacitance Change:** No more than 0.5% or 0.5pF, whichever is greater.	MIL-STD-202, Method 107, Condition A. At the maximum rated temperature (-55°C and 175°C) stay 30 minutes, the time of removing shall not be more than 3 minutes. Perform 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 1.5Volts DC applied while subjected to an environment of 85°C 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 0.5pF, whichever is greater.	MIL-STD-202, Method 108. For 2000 hours, at 125°C. 200% of Voltage for Capacitors, Rated Voltage ≤ 500VDC; 120% of Voltage for Capacitors, 500VDC< Rated Voltage ≤1250VDC; 100% for Voltage for Capacitors, Rated Voltage >1250VDC
Terminal Strength	**Force:** 25lbs typical, 20lbs. 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.

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

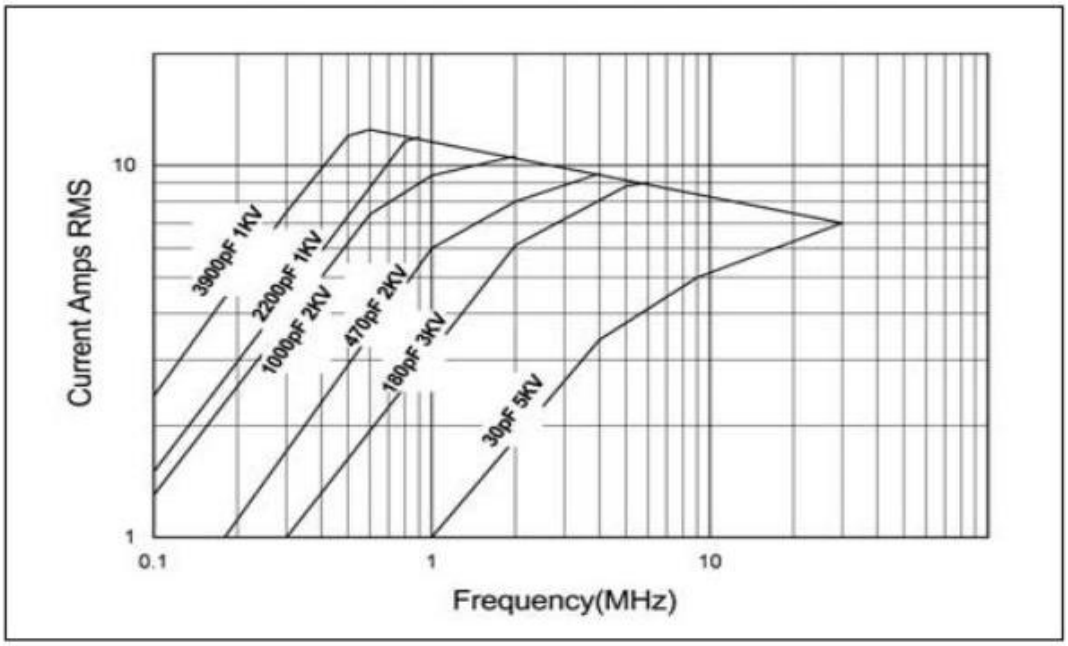
ESR vs. Capacitance Measured @ 30MHz



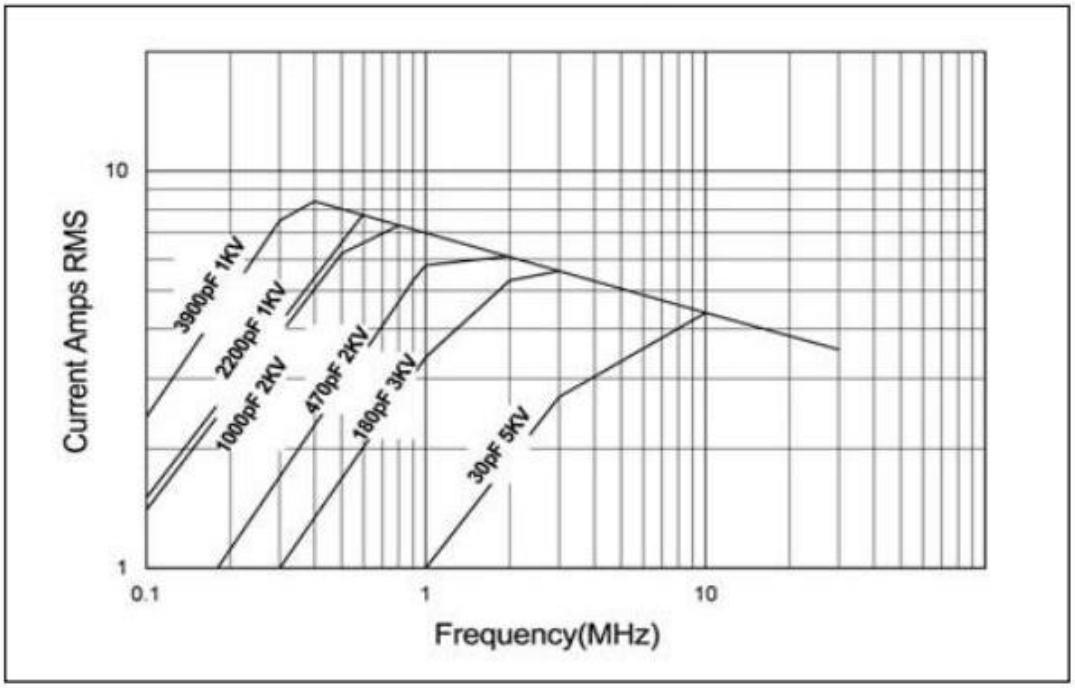
Self Resonant Frequency vs. Capacitance



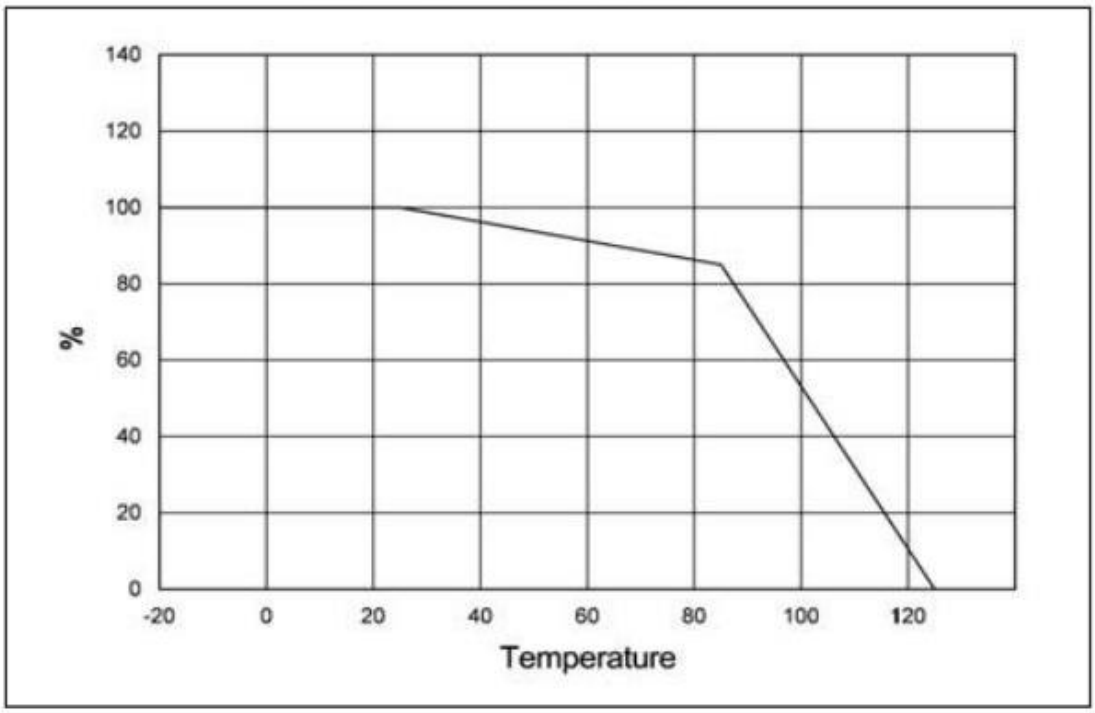
Strip Terminals Rated Current vs. Frequency



Wire Terminals Rated Current vs. Frequency



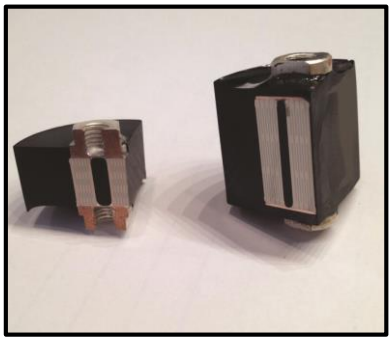
% Maximum Current vs. Ambient Temperature



Custom Assemblies

Passive Plus offers Capacitor Assemblies for high power requirements. Typical assemblies are configured in series and/or parallel combinations, producing higher voltage/current handling capabilities, extended capacitance range and tighter tolerances.

To get started, simply send us either a mechanical drawing or circuit conditions and we can recommend a solution. All components are 100% up-screened for Partial Discharge and Sonoscanned. All assemblies include a 100hr Military burn in.



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.

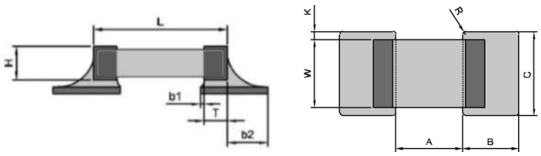
1) The greater the amount of solder, the greater the stress to the elements. This may cause the substrate to break or crack.

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

A	B	C
13.00	3.30	11.30

Dimensions: mm



UHF/RF High Q Power Transmitter
Capacitors (NP0 TC)
Multi-Layer Ceramic Capacitors

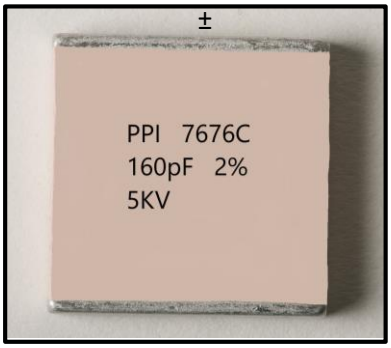
7676C (0.760” x 0.760”)

Product Features

- High Q
- High RF Current/Voltage
- Ultra Stable Performance
- Capacitance Range: 1.0pF to 20000pF
- Working Voltage: 5000V
- Extended Voltage: 8000V

Typical Circuit Applications

- Semiconductor Manufacturing
- High Energy Power Transfers
- Plasma Chambers
- Medical Equipment



Marking shown for illustration purposes only. Actual marking may differ.

Part Numbering

7676	C	100	J	W	502	X

- 7676: Case Size (0.760” x 0.760”)
- C: C=NP0
- 100: Capacitor Code 100=10x10⁰=10pF 1R0=1.0pF
- J: Capacitance Tolerance *See Table*
- W: Termination Type *See Table*
- 502: Rated Voltage *See Table*
- X: Laser Marking

Capacitance Tolerance Codes

Code	B	C	D	F	G	J	K
Tol.	±0.1pF	±0.25pF	±0.5pF	±1%	±2%	±5%	±10%

Voltage Codes

Voltage	Code
1000V	102
2000V	202
3000V	302
5000V	502
8000V	802

UHF/RF High Q Power Transmitter
Capacitors (NP0 TC)
Multi-Layer Ceramic Capacitors

7676C (0.760” x 0.760”)

7676C Capacitance Values

Special capacitances, tolerances and WVDC are available. Please contact PPI.

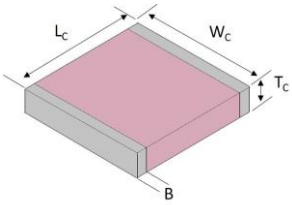
Marking shown for illustration purposes only. Actual marking may differ.

Cap. pF	Cap Code	Tol.	Rated WVDC Std.	Rated WVDC Ext.	Cap. pF	Cap Code	Tol.	Rated WVDC Std.	Rated WVDC Ext.	Cap. pF	Cap Code	Tol.	Rated WVDC Std.	Rated WVDC Ext.
1.0	1R0	B,C, D	5000V	8000V	**33**	330	F,G, J,K	5000V	8000V	**1000**	102	G,J, K	3000V	5000V
1.2	1R2				**39**	390				**1200**	122			
1.5	1R5				**47**	470				**1500**	152			
1.8	1R8				**56**	560				**1800**	182			
2.2	2R2				**68**	680				**2200**	222			
2.7	2R7				**82**	820				**2700**	272			
3.3	3R3				**100**	101				**3300**	332			
3.9	3R9				**120**	121				**4700**	472			
4.7	4R7				**150**	151				**5100**	512			
5.6	5R6				**180**	181				**5600**	562	G,J, K	1000V	3000V
6.8	6R8				**220**	221				**6800**	682			
8.2	8R2				**270**	271	F,G, J,K	3000V	5000V	**7500**	752			
10	100	F,G, J,K	5000V	8000V	**300**	301				**8200**	822			
12	120				**390**	391				**10000**	103			
15	150				**470**	471				**12000**	123	G,J, K	1000V	2000V
18	180				**560**	561				**15000**	153			
22	220				**680**	681				**18000**	183			
27	270				**820**	821				**20000**	203			

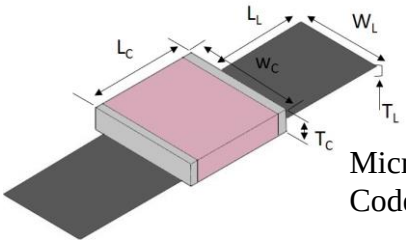
UHF/RF High Q Power Transmitter Capacitors (NP0 TC)
Multi-Layer Ceramic Capacitors

7676C (0.760” x 0.760”)

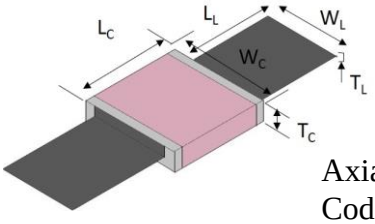
Termination Types and Codes



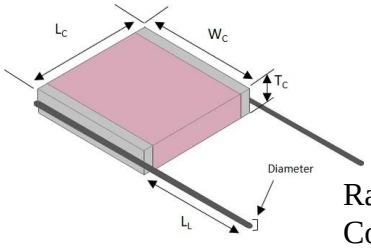
Chip Termination:
Codes: **W, L, P**



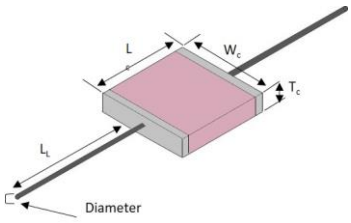
Microstrip Termination:
Codes: **MS, MN**



Axial Ribbon Termination:
Code: **AR, AN**



Radial Wire Termination:
Codes: **RW, RN**



Axial Wire Termination:
Codes: **AW, BN**

Termination Code	Magnetic Termination
W	100% Sn Solder over Nickel Plating
L	90% Sn10%Pb Tin/Lead Solder over Nickel Plating
MS	Silver-Plated Copper
AR	
RW	
AW	

Termination Code	Non-Magnetic Terminations
P	100%Sn Solder over Copper Plating
MN	Silver-Plated Copper
AN	
RN	
BN	

Note: “Non-Magnetic” means no magnetic materials.

UHF/RF High Q Power Transmitter
Capacitors (NP0 TC)
Multi-Layer Ceramic Capacitors

7676C (0.760” x 0.760”)

Termination Types For Termination Types images, see previous page

Unit: inch (millimeter)

Magnetic Terminations

		Capacitor Dimensions				Lead Dimensions		
		Length	Width	Thickness	Overlap	Length	Width	Thickness
Code	Term.	Lc	Wc	Tc	B	LL	WL	TL
W	Chip	0.760 -0.010+0.015 (19.3 -0.25+0.38)	0.760±0.010 (19.3±0.25)	0.154±0.008 (3.90±0.20) max	0.063 (1.60) max	-	-	-
MS	Microstrip					0.787 (20.0) min	0.591 ± 0.010 (15.0±0.25)	0.008±0.001 (0.20± 0.025)
AR	Axial Ribbon							
RW	Radial Wire					0.787 (20.00) min	Dia.: 0.030±0.004 (0.80 ± 0.10)	
AW	Axial Wire					1.181 (30.00) min		

Non-Magnetic Terminations

		Capacitor Dimensions				Lead Dimensions		
		Length	Width	Thickness	Overlap	Length	Width	Thickness
Code	Term.	Lc	Wc	Tc	B	LL	WL	TL
P	Chip	0.760 -0.010+0.015 (19.3 -0.25+0.38)	0.760±0.010 (19.3±0.25)	0.154±0.008 (3.90±0.20) max	0.063 (1.60) max	-	-	-
MN	Microstrip					0.787 (20.0) min	0.591 ± 0.010 (15.0±0.25)	0.008 ±0.001 (0.20 ± 0.025)
AN	Axial Ribbon							
RN	Radial Wire					0.787 (20.00) min	Dia.: 0.031 ±0 .004 (0.80 ± 0.10)	
BN	Axial Wire					1.181 (30.00) min		

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

UHF/RF High Q Power Transmitter
Capacitors (NP0 TC)
Multi-Layer Ceramic Capacitors

7676C (0.760” x 0.760”)

Electrical Specifications

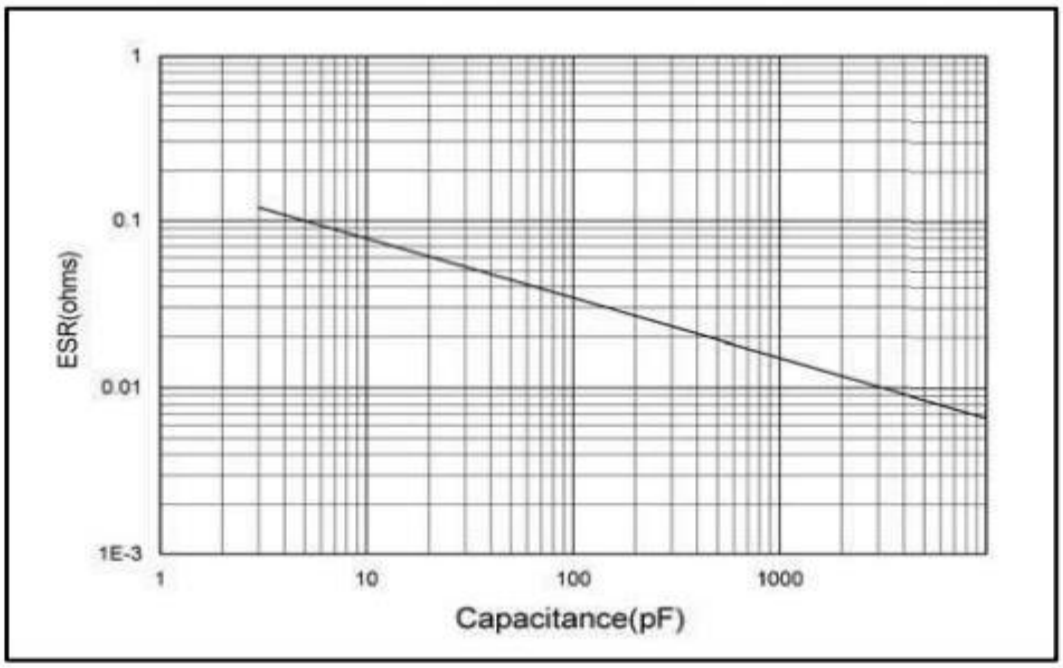
Quality Factor (Q)	No less than 1000pF, Q value more than 2000, Test Frequency 1MHz; More than 1000pF, Q value more than 2000, Test Frequency 1MHz
Insulation Resistance (IR)	Test Voltage: 500V 10^5 Megaohms min. @ +25°C rated WVDC 10^4 Megaohms min. @ +125°C rated WVDC
Rated Voltage	See Rated Voltage Table
Dielectric Withstanding Voltage (WVDC)	250% of Voltage of 5 seconds, Rated Voltage ≤ 500VDC 150% of Voltage for 5 seconds, 500VDC <Rated Voltage ≤ 1250 VDC 120% of Voltage for 5 seconds, Rated Voltage > 1250 VDC
Operating Temperature Range	-55°C to 175°C
Temperature Coefficient (TC)	-55°C to 125°C 0±30ppm/°C >125°C to 175°C 0±60ppm/°C
Capacitance Drift	±0.02% or ±0.02pF, whichever is greater
Piezoelectric Effects	None
Termination Type	See Termination Type Table

Environmental Specifications

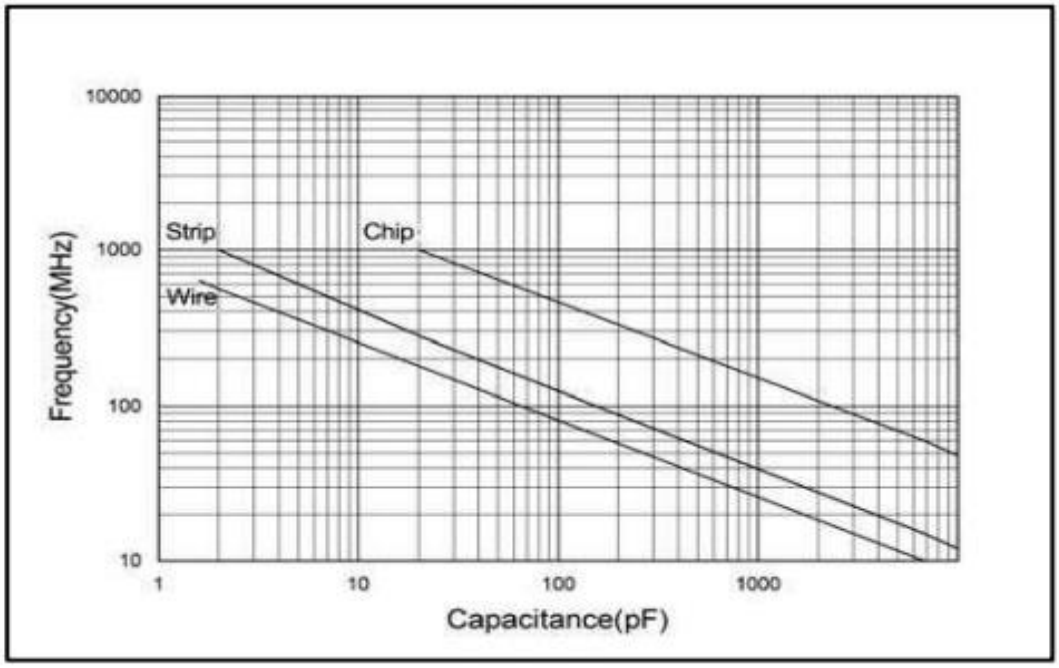
	Specification	Test Parameters
Thermal Shock	**DWV:** The initial value **IR:** Shall not be less than 30% of the initial value. **Capacitance Change:** No more than 0.5% or 0.5pF, whichever is greater.	MIL-STD-202, Method 107, Condition A. At the maximum rated temperature (-55°C and 175°C) stay 30 minutes, the time of removing shall not be more than 3 minutes. Perform 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 1.5Volts DC applied while subjected to an environment of 85°C 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 0.5pF, whichever is greater.	MIL-STD-202, Method 108. For 2000 hours, at 125°C. 200% of Voltage for Capacitors, Rated Voltage ≤ 500VDC; 120% of Voltage for Capacitors, 500VDC< Rated Voltage ≤1250VDC; 100% for Voltage for Capacitors, Rated Voltage >1250VDC
Terminal Strength	**Force:** 30lbs. 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.

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

ESR vs. Capacitance Measured @ 30MHz

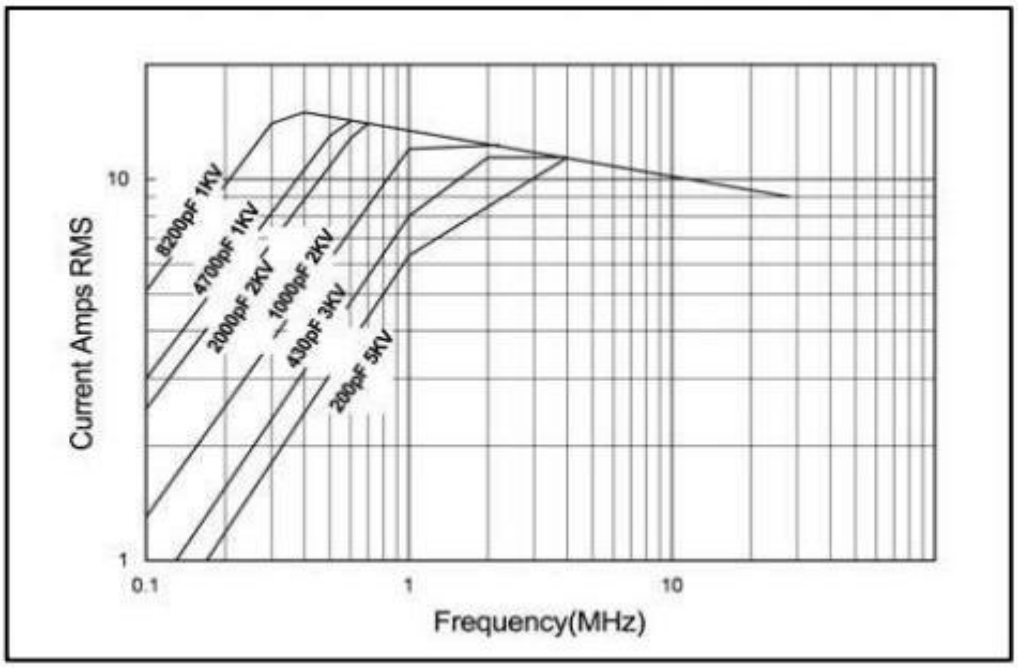


Self Resonant Frequency vs. Capacitance

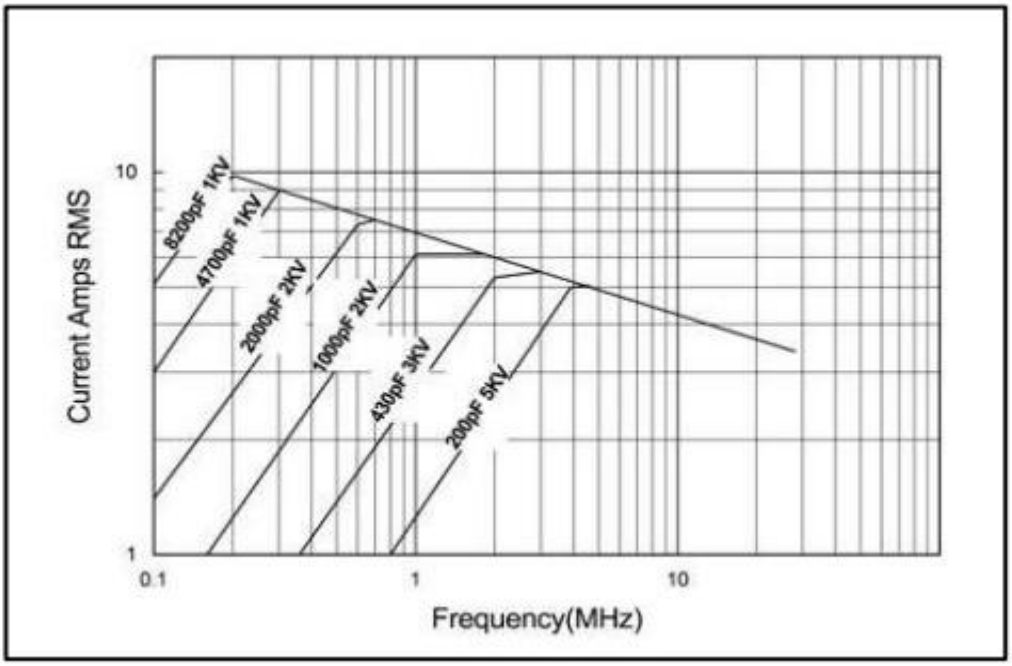


7676C (0.760” x 0.760”)

Strip Terminals Rated Current vs. Frequency

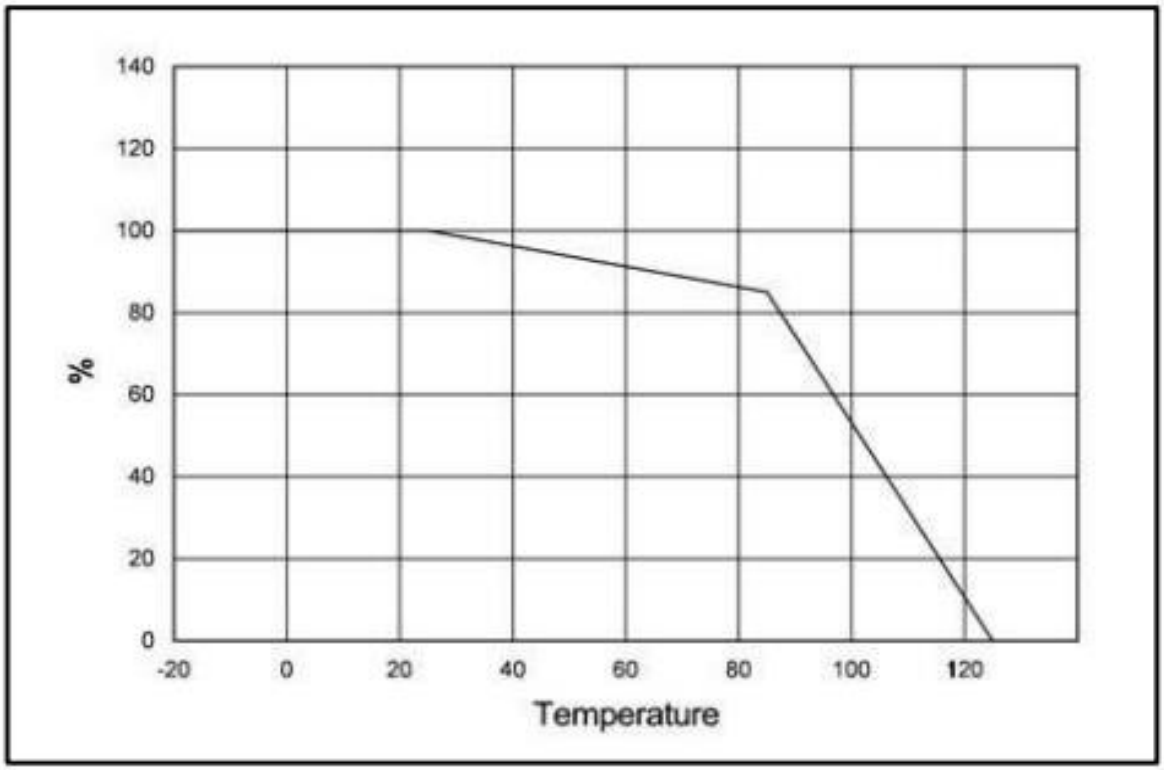


Wire Terminals Rated Current vs. Frequency



7676C (0.760” x 0.760”)

% Maximum Current vs. Ambient Temperature



Custom Assemblies

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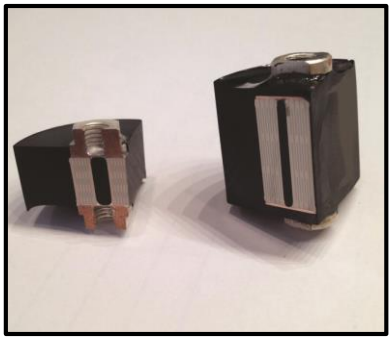


Recommended Land Pattern Dimensions

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.

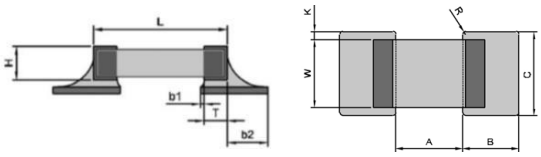
1) The greater the amount of solder, the greater the stress to the elements. This may cause the substrate to break or crack.

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

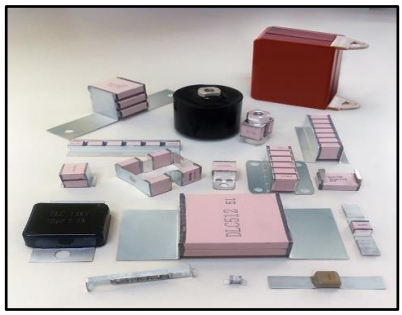
A	B	C
16.00	3.30	19.60

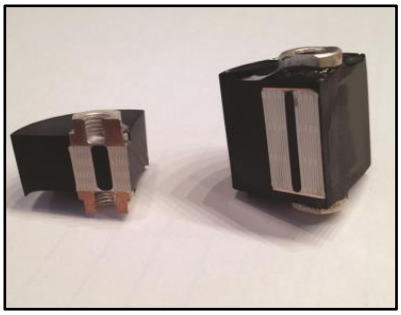
Dimensions: mm



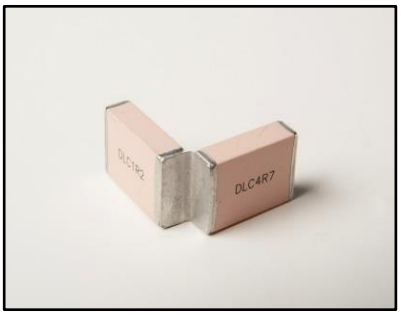
UHF/RF High Q Power Transmitter Capacitors (NP0 TC)
Multi-Layer Ceramic Capacitors

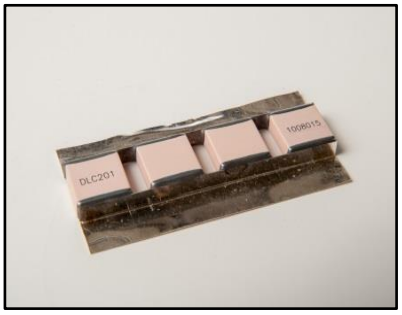
Custom Capacitor Assemblies

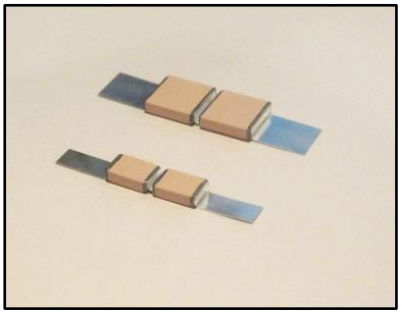
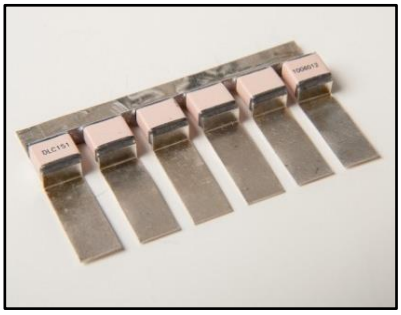
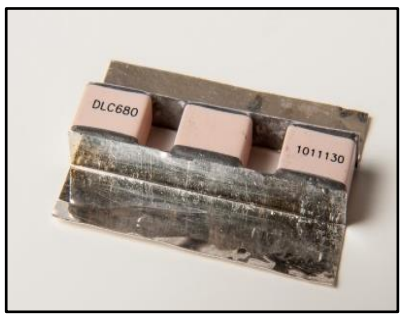


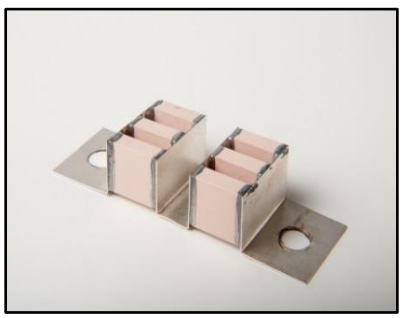
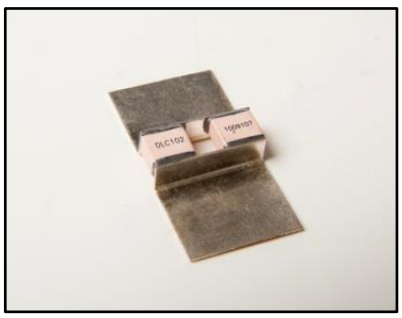








Marking shown for illustration purposes only. Actual marking may differ.

Please contact PPI (sales@passiveplus.com) to discuss custom assembly options.

UHF/RF High Q Power Transmitter Capacitors (NP0 TC)
Multi-Layer Ceramic Capacitors

Custom Capacitor Assemblies

Product Features

High Operating Voltage, High Operating Current, Extended Capacitance, Tighter Tolerances, High Reliability, High Q, Ultra-low ESR, Non-Magnetic

Marking shown for illustration purposes only. Actual marking may differ.

Typical Applications Field

High Power RF, Medical Electronics, Broadcast, Semiconductor Manufacturing, High Magnetic Environments, Inductive Heating

Part Numbering

P	6	C	22P	101	F	252	X
P = Parallel S = Series	Number of Capacitors	S = Silver C = Copper	Capacitor Size *See Below*	Capacitance	Tolerance	Rated Voltage	Laser Marking

Capacitor Size:
11P = 1111; 22P = 2225; 38P = 3838; 60P = 6040; 76P = 7676

Capacitance: For capacitor values requiring 3 significant digits,

e.g. 1222.5pF =1222R5

e.g. P6S22P101F252X

Silver bracket assembly with six 2225C pieces in parallel, Capacitance is 100pF, Capacitance tolerance is ±1%, WVDC is 2500 V and Laser marking.

e.g. S2S25C1222R5G203X

Silver bracket assembly with two 2225C pieces in series, Capacitance is 1222.5pF, Capacitance tolerance is ±2%, WVDC is 20,000V and Laser marking.

Capacitance and Voltage

By Buyer's requirements using existing drawings, mechanical sketches, or we can help with capable modeling of assemblies thermal rise predictions.

UHF/RF High Q Power Transmitter Capacitors (NP0 TC)
Multi-Layer Ceramic Capacitors

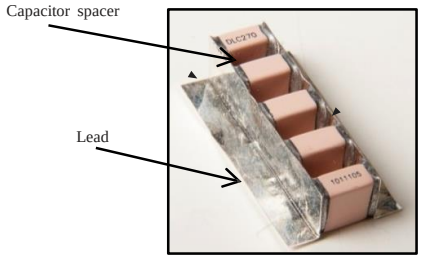
Custom Capacitor Assemblies

Typical Assembly Configurations

Parallel Assemblies

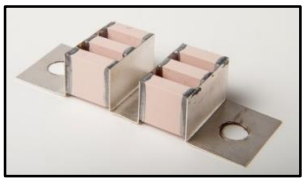
unit:inch (millimeter)

	1111C/P	22225C/P	3838C/P	6040C	7676C
Lead Material	Silver plated Copper or Silver				
Lead Thickness	.004 or .010 (0.1 or 0.25)			.010 or .020 (0.25 or 0.51)	
Lead Length (max.)	.50 (12.7)	.75 (19.8)		2.0 (50.8)	
Capacitor Spacer (typ.)	.050 or .078 (1.3 or 2)			.090 (2.3)	.050 or .157 (1.3 or 4)
Mounting Configuration	Horizontal / Vertical				



Marking shown for illustration purposes only. Actual marking may differ.

3838 Series/Parallel Combination



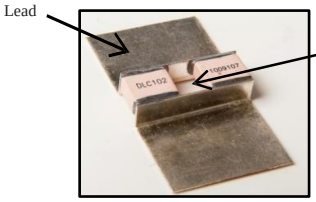
Series Assemblies

unit:inch (millimeter)

	22225C/P	3838C/P	6040C	7676C
Lead Type	L Bracket			
Lead Material	Silver plated Copper or Silver			
Lead Thickness	.010 (0.25)		.010 or .020 (0.25 or 0.51)	
Lead Length (max.)	.75 (19.8)	1.0 (25.4)		
Capacitor Spacer (typ.)	.050 or .157 (1.3 or 4)			
Mounting Configuration	Horizontal			

- Epoxy Molding Available

Other Assemblies: By Buyer's requirement. Contact PPI.



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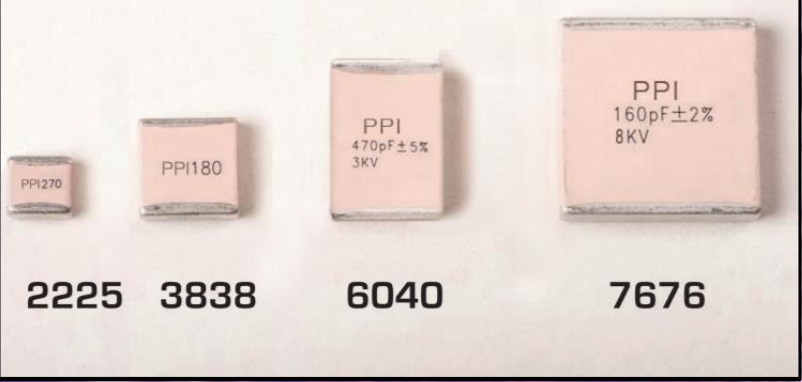

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RF & Microwave Components

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