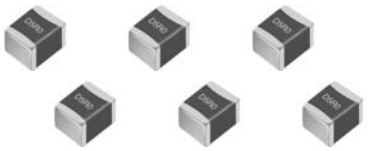
1111P (.110 x .110)

◆Product Features



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

◆Product Application

Typical Functional Applications: Bypass, Coupling, Tuning, Feedback, Impedance Matching and D.C. Blocking.

Typical Circuit Applications: UHF/Microwave RF Power Amplifiers, Mixers, Oscillators, Low Noise Amplifiers, Filter Networks, Timing Circuits and Delay Lines.

◆1111P Capacitance Table

Cap.pF	Code	Tol.	WVDC V	Cap.pF	Code	Tol.	WVDC V	Cap.pF	Code	Tol.	WVDC V	Cap.pF	Code	Tol.	WVDC V
0.2	0R2	A, B, C, D	500V Code 501 or 1500V Code 152	2.7	2R7	A, B, C, D	500V Code 501 or 1500V Code 152	22	220	F, G, J, K,	500V Code 501 or 1500V Code 152	180	181	F, G, J, K,	300V Code 301
0.3	0R3			3.0	3R0			24	240			200	201		
0.4	0R4			3.3	3R3			27	270			220	221		200V Code 201 600V Code 601
0.5	0R5			3.6	3R6			30	300			240	241		
0.6	0R6			3.9	3R9			33	330			270	271		
0.7	0R7			4.3	4R3			36	360			300	301		
0.8	0R8			4.7	4R7			39	390			330	331		
0.9	0R9			5.1	5R1			43	430			360	361		
1.0	1R0			5.6	5R6			47	470			390	391		
1.1	1R1			6.2	6R2			51	510		500V Code 501 or 1000V Code 102	430	431		
1.2	1R2			6.8	6R8			56	560			470	471		
1.3	1R3			7.5	7R5			62	620			510	511		100V Code 101
1.4	1R4			8.2	8R2			68	680			560	561		
1.5	1R5			9.1	9R1			75	750			620	621		
1.6	1R6			10	100	F, G, J, K,		82	820			680	681		50V Code 500 or 100V Code 101
1.7	1R7			11	110			91	910			750	751		
1.8	1R8			12	120			100	101			820	821		
1.9	1R9			13	130			110	111		300V Code 301 or 1000V Code 102	910	911		
2.0	2R0			15	150			120	121			1000	102		
2.1	2R1			16	160			130	131						
2.2	2R2			18	180			150	151						
2.4	2R4			20	200			160	161						

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

Passive Plus

Traditional High Q (>10,000) Low ESR Capacitors (P90 TC)

1111P (.110 x.110)

◆Part Numbering

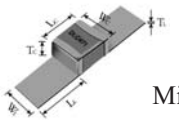
1111P 101 J W 501 X T

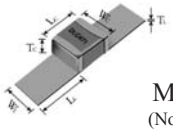
- **Series**
- **Rated Capacitance (See capacitance table)**
- **Capacitance Tolerance**
- **Termination Type**
- **Rated Voltage**
- **Laser Marking**
- **Packaging Type**
  - **T: Termination type is W and P Tape & Reel Packaging(7") 500, 1000,2000 pcs/reel**
  - **C: Except W and P Waffle Packaging**

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

◆1111P Lead Type and Dimensions

unit:inch(millimeter)

Series	Term. Code	Type / Outlines	Capacitor Dimensions			Overlap and Lead Dimensions				Overlap and Lead Material
			Length (L_C)	Width (W_C)	Thickness (T_C)	Overlap (B)	Length (L_L)	Width (W_L)	Thickness (T_L)	
1111P	W	 Chip	.110+.020 ~.010 (2.79+0.51 ~—0.25)	.110 ± .010 (2.79 ±0.25)	.10 (2.54) max	.024 (0.6) max	–	–	–	Plated Nickel, Plated 100% Sn, RoHS Compliant
1111P	MS	 Microstrip	.135 ± .015 (3.43 ±0.38)	.110 ± .010 (2.79 ±0.25)	.10 (2.54) max	–	.250 6.35 min	.093 ± .005 (2.36 ±0.13)	.008± .001 (0.2± 0.025)	Silver-plated Copper
									.004± .001 (0.1± 0.025)	100% Silver

Series	Term. Code	Type / Outlines	Capacitor Dimensions			Overlap and Lead Dimensions				Overlap and Lead Material
			Length (L_C)	Width (W_C)	Thickness (T_C)	Overlap (B)	Length (L_L)	Width (W_L)	Thickness (T_L)	
1111P	P (non-mag)	 Chip (Non-Magnetic)	.110+.020 ~.010 (2.79+0.51 ~—0.25)	.110 ± .010 (2.79 ±0.25)	.10 (2.54) max	.024 (0.6) max	–	–	–	Copper Plated 100% Sn, Non-Mag, RoHS Compliant
1111P	MN (non-mag)	 Microstrip (Non-Magnetic)	.135 ± .015 (3.43 ±0.38)	.110 ± .010 (2.79 ±0.25)	.10 (2.54) max	–	.250 6.35 min	.093 ± .005 (2.36 ±0.13)	.008± .001 (0.2± 0.025)	Silver-plated Copper
									.004± .001 (0.1± 0.025)	100% Silver

Note: non-mag is no magnetism.

◆Performance

Item	Specifications
Quality Factor (Q)	＞ 10,000 at 1 MHz
Insulation Resistance (IR)	0.2 pF to 470 pF: 10^6 Megohms min. @ +25℃ at rated WVDC. 10^5 Megohms min. @ +125℃ at rated WVDC. 510 pF to 1000 pF: 10^5 Megohms min. @ +25℃ at rated WVDC. 10^4 Megohms min. @ +125℃ at rated WVDC.
Dielectric Withstanding Voltage (DWV)	250% of Voltage for 5 seconds, Rated Voltage≤500VDC 150% of Voltage for 5 seconds, 500VDC＜ Rated Voltage≤1250VDC 120% of Voltage for 5 seconds, Rated Voltage＞1250VDC
Operating Temperature Range	0.2pF to 330pF≤500V: −55℃ to +175℃. Other: −55℃ to +125℃.
Temperature Coefficient (TC)	+90±20ppm/℃
Capacitance Drift	±0.02% or ±0.02pF, whichever is greater.
Piezoelectric Effects	None

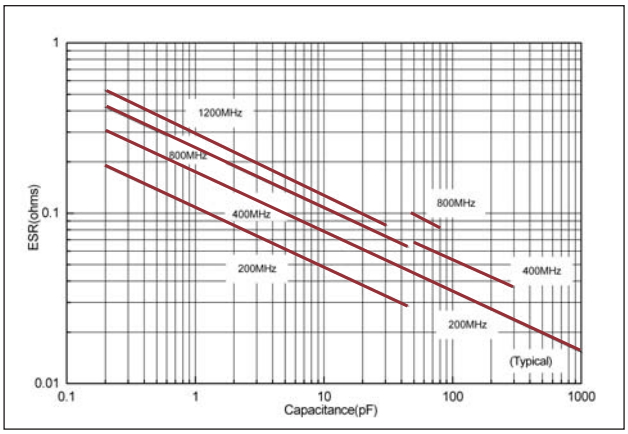
Capacitors are designed and manufactured to meet the requirements of MIL-PRF-55681 and MIL-PRF-123.

◆Environmental Tests

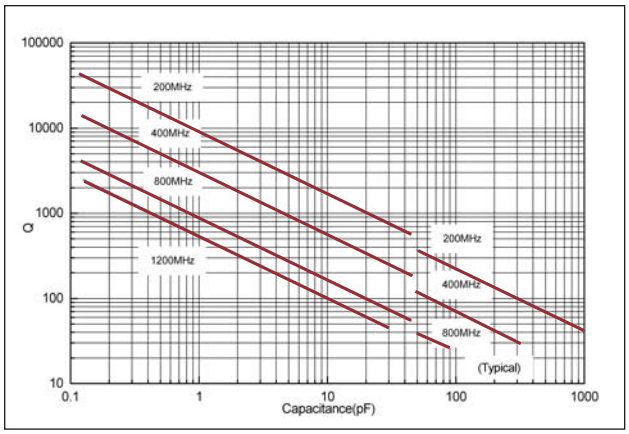
Item	Specifications	Method
Thermal Shock	DWV: the initial value IR: Shall not be less than 30% of the initial value Capacitance change: no more than 0.5% or 0.5pF.	MIL-STD-202, Method 107, Condition A. At the maximum rated temperature (-55℃ and 125℃) stay 30 minutes. The time of removing shall not be 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.	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 0.2%	MIL-STD-202, Method 108, for 2000 hours, at 125℃. 200% of Voltage for Capacitors, Rated Voltage≤500VDC 120% of Voltage for Capacitors, 500VDC＜ Rated Voltage≤1250VDC 100% of Voltage for Capacitors, Rated Voltage＞1250VDC

◆1111P Performance Curve

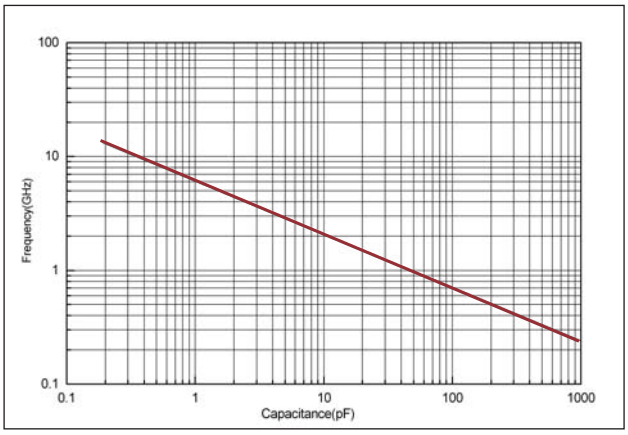
ESR vs Capacitance



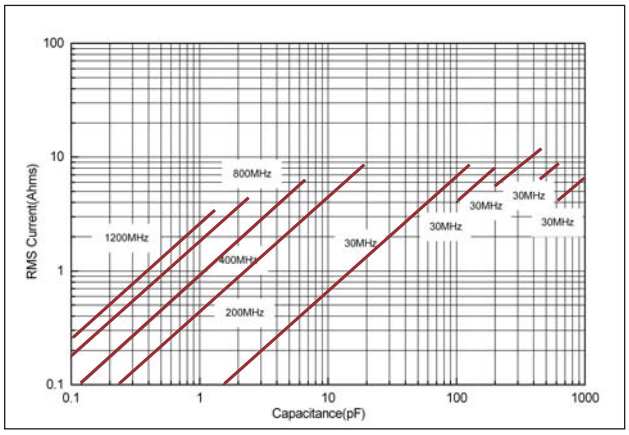
Q vs Capacitance



Series Resonance vs Capacitance



Current Rating vs Capacitance



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

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

Note: If the thermal resistance of mounting surface is 20°C/W.

then a power dissipation of 3 W will result in the current limited

we can calculate the current limited $I = \sqrt{\frac{P_{dissipation}}{ESR}}$