

1111C/P (.110" x.110")

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◆ 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



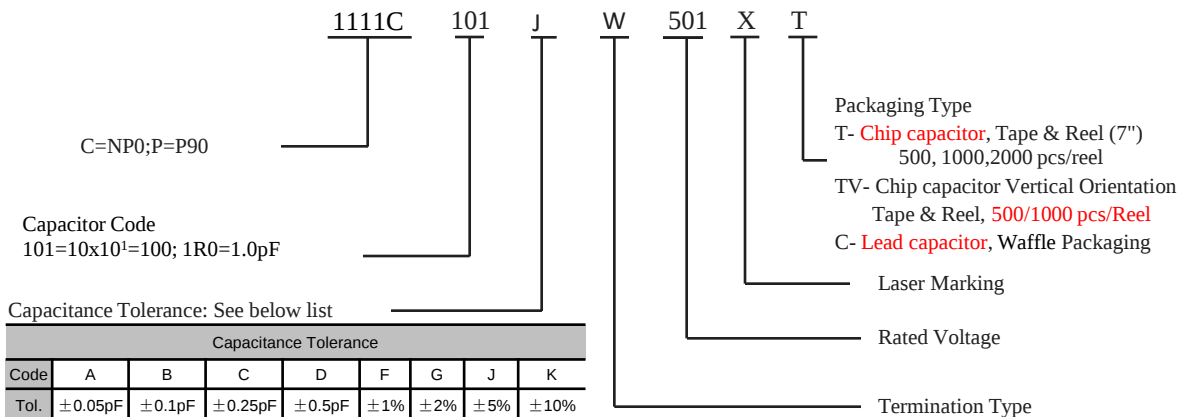
◆ 1111C/P Capacitance Table

NPO=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
0.1	0R1	A,B,	500V Code 501 or 1500V Code 152	3.6	3R6	A,B, C,D	500V Code 501 or 1500V Code 152	43	430	F,G, J,K	500V Code 501 or 1500V Code 152	510	511	F,G, J,K	100V Code 101 or 200V Code 201
0.2	0R2			3.9	3R9			47	470			560	561		
0.3	0R3			4.3	4R3			51	510			620	621		
0.4	0R4			4.7	4R7			56	560			680	681		
0.5	0R5	A,B, C,D		5.1	5R1	62		620	750			751			
0.6	0R6			5.6	5R6	68		680	820			821			
0.7	0R7			6.2	6R2	75		750	910			911			
0.8	0R8			6.8	6R8	82		820	1000			102			
0.9	0R9			7.5	7R5	91		910	1100			112			
1.0	1R0			8.2	8R2	100		101	1200			122			
1.1	1R1			9.1	9R1	110		111	1500			152			
1.2	1R2			10	100	120		121	1800			182			
1.3	1R3			11	110	130		131	2200		222				
1.4	1R4			12	120	150		151	2700		272				
1.5	1R5			13	130	160		161	3000		302				
1.6	1R6			15	150	180		181	3300		332				
1.7	1R7			16	160	200		201	3900		392				
1.8	1R8			18	180	220		221	4700		472				
1.9	1R9			20	200	240		241	5100		512				
2.0	2R0			22	220	270		271	5600		562				
2.1	2R1			24	240	300		301	6200		622				
2.2	2R2			27	270	330		331	6800		682				
2.4	2R4	30		300	360	361		7500	752						
2.7	2R7	33		330	390	391		8200	822						
3.0	3R0	36		360	430	431		9100	912						
3.3	3R3	39		390	470	471		10000	103		50V Code 500				

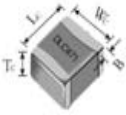
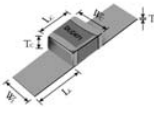
Remark: special capacitance, tolerance and WVDC are available, consult with PASSIVE PLUS.

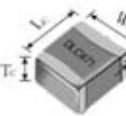
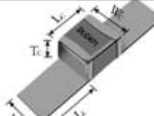
◆ Part Numbering



◆ 1111C/P Lead Type and Dimensions

unit:inch(millimeter)

Series	Term. Code	Type/ Outlines	Capacitor Dimensions				Overlap and Lead Dimensions			Plated Material
			Length Lc	Width Wc	Thick. Tc	Overlap B	Length LL	Width WL	Thickness TL	
1111C 1111P	W	 Chip	.110 +.020 to -.010 (2.79 +0.51 to -.25)	.110 ±.010 (2.79± 0.25)	.10 (2.54) max	.024 (0.60) Max	-	-	-	Plated Nickel Plated 100%Sn, RoHS Compliant
1111C 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			Plated Material
			Length Lc	Width Wc	Thick. Tc	Overlap B	Length LL	Width WL	Thickness TL	
1111C 1111P	W	 Chip (non-mag)	.110 +.020 to -.010 (2.79 +0.51to -.25)	.110 ±.010 (2.79± 0.25)	.10 (2.54) max	.024 (0.60) Max	-	-	-	Copper Plated 100%Sn, RoHS Compliant
1111C 1111P	MS	 Microstrip (non-mag)	.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)	At 1MHz, Test capacitance and Q value. Less than 10pF, Q more than 2000; More than 10pF, Q more than 5000;
Insulation Resistance (IR)	0.1 pF to 470 pF: 10 ⁶ Megohms min. @ +25 °C at rated WVDC. 10 ⁵ Megohms min. @ +125 °C at rated WVDC. 510 pF to 10000 pF: 10 ⁵ Megohms min. @ +25 °C at rated WVDC. 10 ⁴ Megohms min. @ +125 °C 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 5 seconds, 500VDC < Rated Voltage ≤ 1250VDC 120% of Voltage for 5 seconds, Rated Voltage > 1250VDC
Operating Temperature Range	0.1pF to 330pF ≤ 500V: -55 °C to +175 °C, Other: -55 °C to +125 °C
Temperature coefficient (TC)	P: +90 ± 20ppm/°C; C: 0 ± 30ppm/°C
Capacitance Drift	± 0.02% or ± 0.02pF, whichever is greater.
Piezoelectric Effects	None
Termination Type	See Termination Type Table.

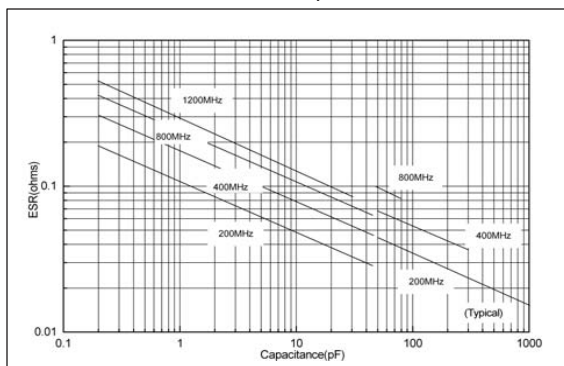
Capacitors are designed and manufactured to meet the requirements of MIL-PRF-55681 and MIL-PRF-123.

◆ Environmental Tests

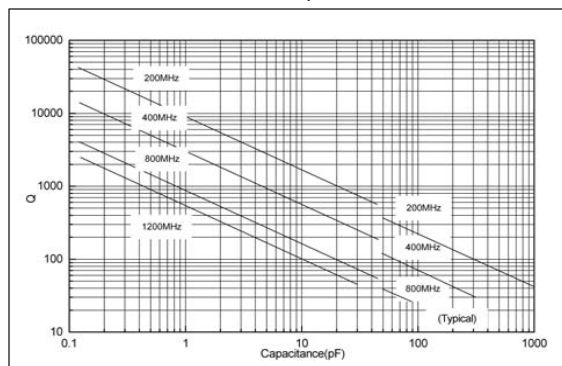
Item	Specifications	Method
Thermal shock	DWV: the initial value IR: Shall not be less than 30% of the initial value Capacitance change: no more than 0.5% or 0.5pF, whichever is greater.	MIL-STD-202, Method 107, Condition A. At the maximum rated temperature(-55°C and 125°C) stay 30min, The time of removing 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°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% of Voltage for Capacitors, Rated Voltage > 1250VDC.

◆ 1111C/P Performance Curve

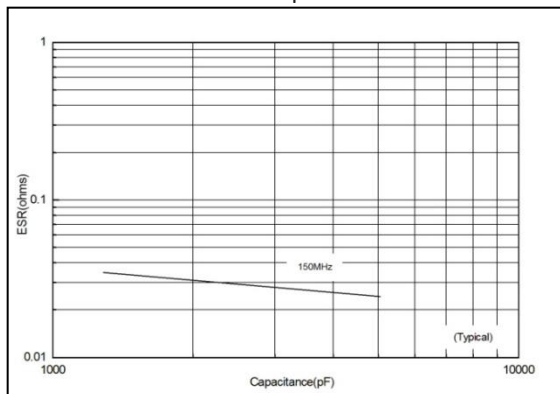
1111C/P ESR vs Capacitance



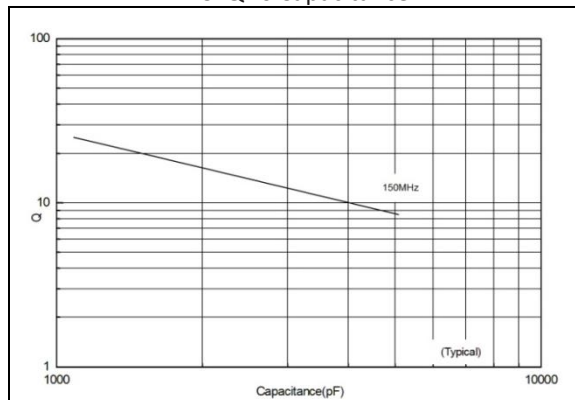
1111C/P Q vs Capacitance



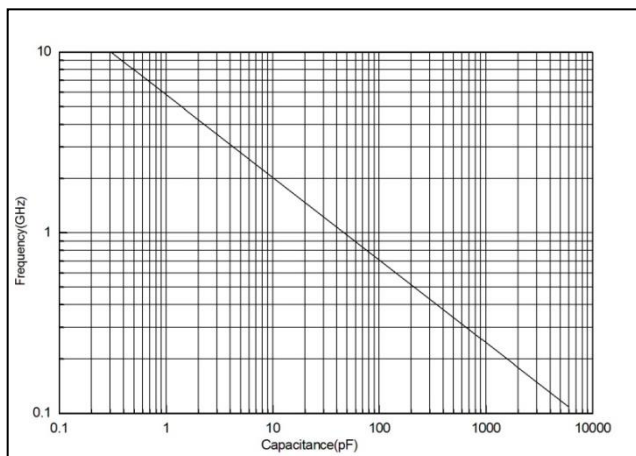
1111C ESR vs Capacitance



1111C Q vs Capacitance

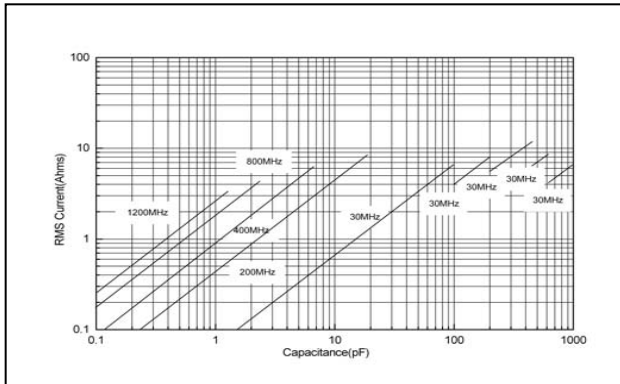


1111C/P Series Resonance vs Capacitance

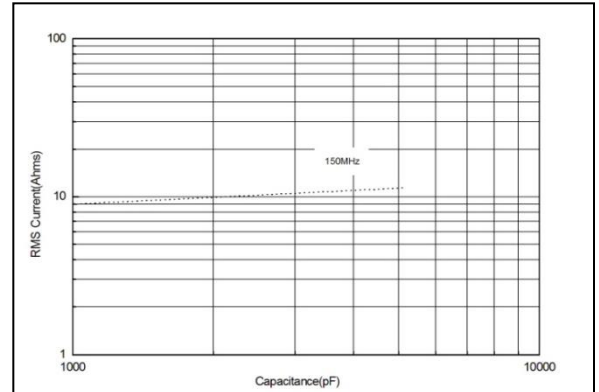


◆ 1111C/P Performance Curve

1111C/P Current Rating vs Capacitance



1111C 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 20 °C /W. then

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

calculate the current limited:

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

◆ Tape & Reel Specifications

ORIENTATION	EIA	A0	B0	K0	W	P0	P1	T	F	Qty/reel	Tape Material
Horizontal	1111	2.85	3.90	1.95	8.00	4.00	4.00	0.22	3.50	2000	Plastic
Vertical	1111	2.00	3.50	2.70	12.00	4.00	4.00	0.40	5.50	1500	Plastic
Vertical	1111	2.96	3.60	2.40	8.00	4.00	4.00	0.22	3.50	1500	Plastic

◆ Design Kits

These capacitors are 100% RoHS. Kits are available in Magnetic and Non-Magnetic that contain 10 (ten) pieces per value; 16 values per kit.

Design Kit	Description	Values (pF)	No. of values	Tolerances
DKD1111C01 DKD1111P01	1.0pF - 10pF	1.0, 1.2, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, pF	16	± 0.1pF
		3.0,3.3,3.9, 4.7, 5.6, 6.8, 8.2pF		± 0.25pF
		10pF		± 5%
DKD1111C02 DKD1111P02	10pF -100pF	10, 12, 15, 18, 20, 22, 24, 27, 30, 33, 39, 47, 56, 68, 82, 100pF	16	± 5%
DKD1111C03 DKD1111P03	100pF-1000pF	100, 120, 150, 180, 200, 220, 240, 270, 300, 330, 390, 470, 560, 680, 820,1000 pF	16	± 5%
DKD1111C04 DKD1111P04	1000pF-10000pF	1000, 1200, 1500, 1800, 2000, 2200, 2400, 2700, 3000, 3300, 3900, 4700, 5600, 6800, 8200,10000 pF	16	± 5%
DKD1111C05 DKD1111P05	1.0pF - 10pF Non-magnetic	1.0, 1.2, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, pF	16	± 0.1pF
		3.0,3.3,3.9, 4.7, 5.6, 6.8, 8.2pF		± 0.25pF
		10pF		± 5%
DKD1111C06 DKD1111P06	10pF - 100pF Non-magnetic	10, 12, 15, 18, 20, 22, 24, 27, 30, 33, 39, 47, 56, 68, 82, 100pF	16	± 5%
DKD1111C07 DKD1111P07	100pF- 1000pF Non-magnetic	100, 120, 150, 180, 200, 220, 240, 270, 300, 330, 390, 470, 560, 680, 820,1000 pF	16	± 5%
DKD1111C08 DKD1111P08	1000pF- 10000pF Non-magnetic	1000, 1200, 1500, 1800, 2000, 2200, 2400, 2700, 3000, 3300, 3900, 4700, 5600, 6800, 8200,10000 pF	16	± 5%

