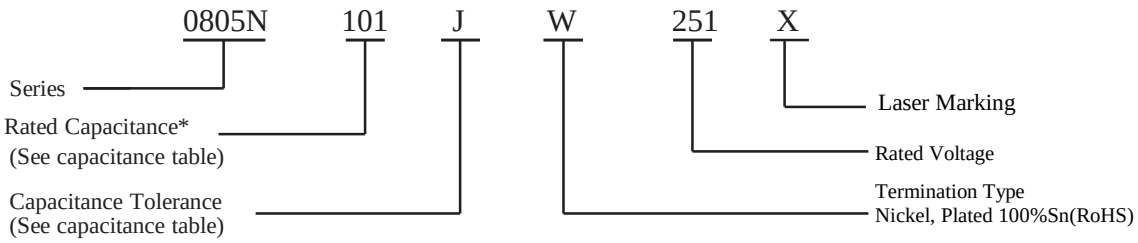
0805N (.080" x .050")

◆0805N Capacitance & Rated Voltage Table

Cap. pF	Code	Tol.	Rated WVDC	Cap. pF	Code	Tol.	Rated WVDC	Cap. pF	Code	Tol.	Rated WVDC
0.1	0R1	A,B, C,D	250V Code 251	3.0	3R0	A,B, C,D	250V Code 251	30	300	F,G, J,K	250V Code 251
0.2	0R2			3.3	3R3			33	330		
0.3	0R3			3.6	3R6			36	360		
0.4	0R4			3.9	3R9			39	390		
0.5	0R5			4.3	4R3			43	430		
0.6	0R6			4.7	4R7			47	470		
0.7	0R7			5.1	5R1			51	510		
0.8	0R8			5.6	5R6			56	560		
0.9	0R9			6.2	6R2			62	620		
1.0	1R0			6.8	6R8	B,C		68	680		
1.1	1R1			7.5	7R5			75	750		
1.2	1R2			8.2	8R2			82	820		
1.3	1R3			9.1	9R1			91	910		
1.4	1R4			10	100	F,G, J,K		100	100		
1.5	1R5			11	110			110	111		
1.6	1R6			12	120			120	121		
1.7	1R7			13	130			130	131		
1.8	1R8			15	150			150	151		
1.9	1R9			16	160			160	161		
2.0	2R0			18	180			180	181		
2.1	2R1			20	200			200	201		
2.2	2R2			22	220			220	221		
2.4	2R4			24	240						
2.7	2R7			27	270						

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

◆ Part Numbering

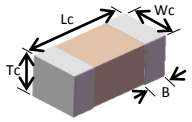


*When capacitance is less than 1.0, use "R" for decimal

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

◆ 0805N Chip Dimensions

unit:inch(millimeter)

Series	Term. Code	Type/Outlines	Capacitor Dimensions				Plated Material
			Length Lc	Width Wc	Thickness Tc	Overlap B	
0805N	W		.080±.008 (2.03±0.20)	.050±.008 (1.27±0.20)	.040± .006 (1.02±0.15)	0.020±.010 (0.50±0.25)	Sn/Ni (RoHS)

Remark: for Non-Magnetic NP0 products please refer to page 94.

◆ Design Kits

These capacitors are 100% RoHS. Kits are available in Magnetic termination and contain 10 (ten) pieces per value; number of values per kit varies, depending on case size and capacitance.

Kits	Description	Values	Tolerances
DKD0805N01	0805N .1pF - 2.0pF	0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.2, 1.5, 1.6, 1.8, 2.0pF	+/-.1pF
DKD0805N02	0805N 1.0pF - 10pF	1.0, 1.2, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, 3.0, 3.3, 3.9, 4.7, 5.6, 6.8, 8.2pF,	+/-.1pF
		10pF	+/-5%
DKD0805N03	0805N 10pF - 100pF	10, 12, 15, 18, 20, 22, 24, 27, 30, 33, 39, 47, 56, 68, 82, 100pF	+/-5%
DKD0805N04	0805N 10pF - 220pF	10, 15, 18, 20, 24, 27, 30, 39, 47, 56, 68, 82, 100, 120, 150, 180, 220pF	+/-5%

◆ Performance

Item	Specifications
Quality Factor (Q)	2,000 min.
Insulation Resistance (IR)	10^5 Megohms min. @ +25 ℃ at rated WVDC. 10^4 Megohms min. @ +125 ℃ at rated WVDC.
Rated Voltage	250V
Dielectric Withstanding Voltage (DWV)	250% of rated Voltage for 5 seconds.
Operating Temperature Range	-55℃ to +175℃
Temperature coefficient (TC)	0±30ppm/℃
Capacitance Drift	±0.02% or ±0.02pF, whichever is greater.
Piezoelectric Effects	None

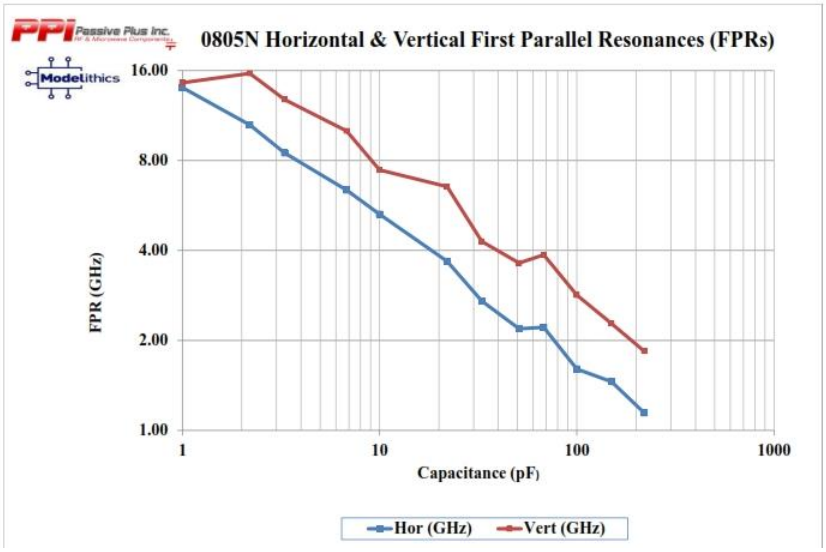
◆ Environmental Tests

Item	Specifications	Method
Terminal Adhesion	Termination should not pull off. Ceramic should remain undamaged.	Linear pull force exerted on axial leads soldered to each terminal. 2.0lbs.
Resistance To soldering heat	No mechanical damage Capacitance change: -1.0% ~+2.0% Q>500 I.R. >10 G Ohms Breakdown voltage: 2.5 x WVDC	Preheat device to 150 ℃-180 ℃ for 60 sec. Dip in 260℃±5℃solder for 10±1 sec. Measure after 24±2 hour cooling period.
Thermal Shock	No mechanical damage Capacitance change: ±0.5% or 0.5pF max Q>2000 I.R. >10 G Ohms Breakdown voltage: 2.5 x WVDC	MIL-STD-202, Method 107, Condition A. At the maximum rated temperature(-55 ℃ and 175 ℃) stay 30 minutes. The time of removing shall not be more than 3 minutes. Perform the five cycles.
Humidity, Steady State	No mechanical damage Capacitance change: ±0.5% or 0.5pF max. Q>300 I.R. >1 G Ohms Breakdown voltage: 2.5 x WVDC	MIL-STD-202, Method 106.
Low Voltage Humidity	No mechanical damage Capacitance change: ±0.3% or 0.3pF max. Q>300 I.R. >1 G Ohms Breakdown voltage: 2.5 x WVDC	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	No mechanical damage Capacitance change: ±2.0% or 0.5pF max. Q>500 I.R. >1 G Ohms Breakdown voltage: 2.5 x WVDC	MIL-STD-202, Method 108, for 1000 hours, at 175 ℃. 200% Rated voltage D.C. applied.

◆ 0805N Electrical Performance

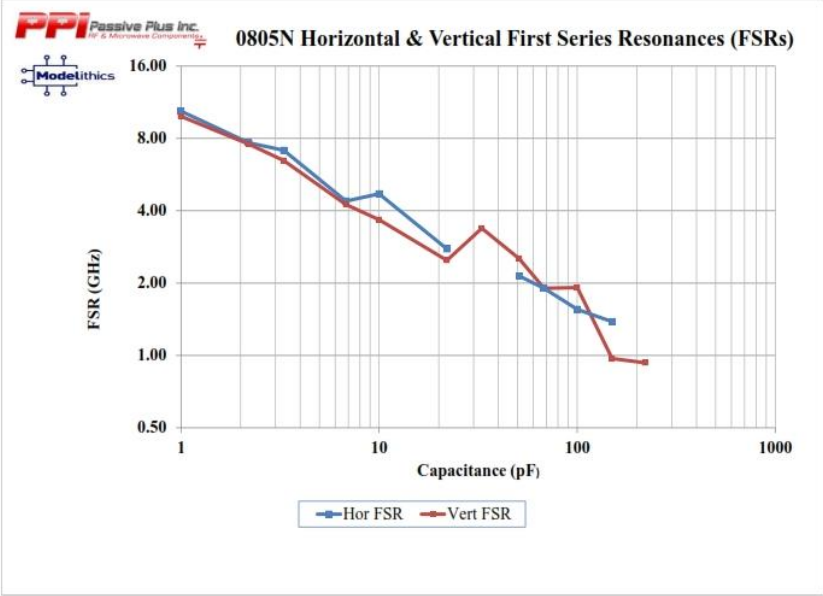
ESR vs. Frequency

First Parallel Resonant Frequency vs. Capacitance



The First Parallel Resonance, FPR, is defined as the lowest frequency at which a suckout or notch appears in |S21|. It is generally independent of substrate thickness or dielectric constant, but does depend on capacitor orientation. A horizontal orientation means the capacitor electrode planes are parallel to the plane of the substrate; a vertical orientation means the electrode planes are perpendicular to the substrate.

First Series Resonant Frequency vs. Capacitance



The First Series Resonance, FSR, is defined as the lowest frequency at which the imaginary part of the input impedance, Im[Zin], equals zero. Should Im[Zin] or the real part of the input impedance, Re[Zin], not be monotonic with frequency at frequencies lower than those at which Im[Zin] = 0, the FSR shall be considered as undefined. FSR is dependent on internal capacitor structure; substrate thickness and dielectric constant; capacitor orientation, as defined alongside the FPR plot; and mounting pad dimensions.

Definitions and Measurement conditions:

The definitions on the charts are for a capacitor in a series configuration, i.e., mounted across a gap in a microstrip trace with a 50-Ohm termination. The measurement conditions are: substrate -- Rogers RO3003; substrate dielectric constant = 3.00; substrate thickness (mils) = 23; gap in microstrip trace (mils) = 23.6; microstrip trace width (mils) = 57.1; **Reference planes at sample edges**.

All data has been derived from electrical models created by Modelithics, Inc., a specialty vendor contracted by PPI. The models are derived from measurements on a large number of parts disposed on several different substrates.

S-Parameters can be found on the PPI Website -- http://www.passiveplus.com/index.php

◆ Recommended Land Pattern Dimensions

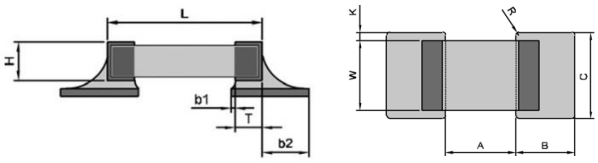
When mounting the capacitor to substrate, it's important to carefully consider that the amount of solder (size of fillet) used has a direct effect upon the capacitor once it's mounted.

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.

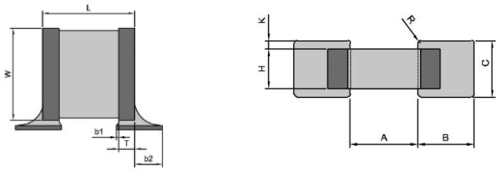
● Horizontal Mounting

Orientation	EIA	A	B	C
Horizontal	0805	1.10	1.10	1.40



● Vertical Mounting

Orientation	EIA	A	B	C
Vertical	0805	1.10	1.10	1.40



◆ Tape & Reel Specifications

Orientation	EIA	A0	B0	K0	W	P0	P1	T	F	QTY Min	QTY/ REEL	Tape Material
Horizontal	0805N	1.60	1.60	2.40	8.00	4.00	4.00	0.20	3.50	500	500	Paper

● Horizontal Orientation