



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

1313C (1.30" x 1.30")

≠ **Product Features**

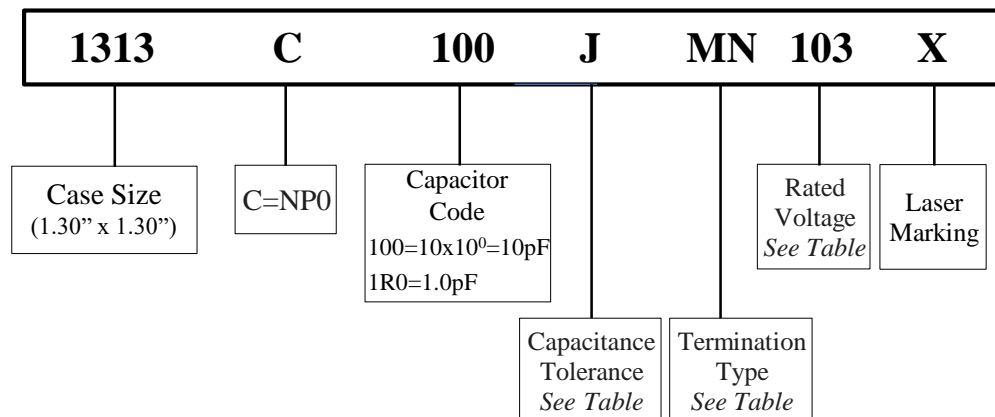
- High Q
- High RF Current/Voltage
- Ultra Stable Performance
- Capacitance Range:
200pF to 120000pF
- Working Voltage: 10000V

≠ **Typical Circuit Applications**

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



≠ **Part Numbering**



≠ **Capacitance Tolerance Codes**

Code	G	J	K
Tol.	±2%	±5%	±10%

≠ **Voltage Codes**

Voltage	Code
1000V	102
3000V	302
5000V	502
10000V	103



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

1313C (1.30" x 1.30")

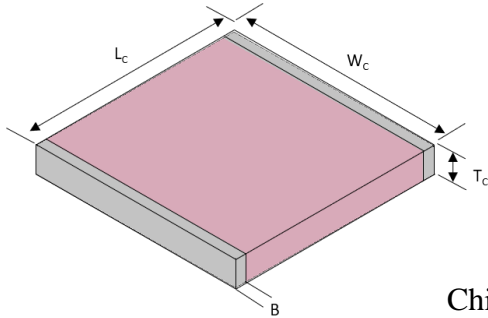
≠ 1313C Capacitance Values

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

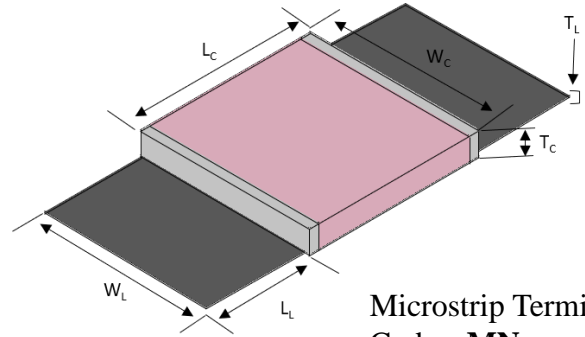


Cap. pF	Code	Tol.	Rated WVDC	Cap. pF	Code	Tol.	Rated WVDC	Cap. pF	Code	Tol.	Rated WVDC
200	201			1800	182			12000	123		
220	221			2200	222		10kV	15000	153		
270	271			2700	272		Code 103	22000	223		3000V
300	301			3300	332			33000	333		Code 302
330	331			4700	472			47000	473		
390	391			5100	512	G,J,K		56000	563	J,K	
470	471	G,J,K	10kV	5600	562		5000V	68000	683		
560	561		Code 103	6800	682		Code 502	82000	823		1000V
680	681			7500	752			100000	104		Code 102
820	821			10000	103			120000	124		
1000	102										
1200	122										
1500	152										

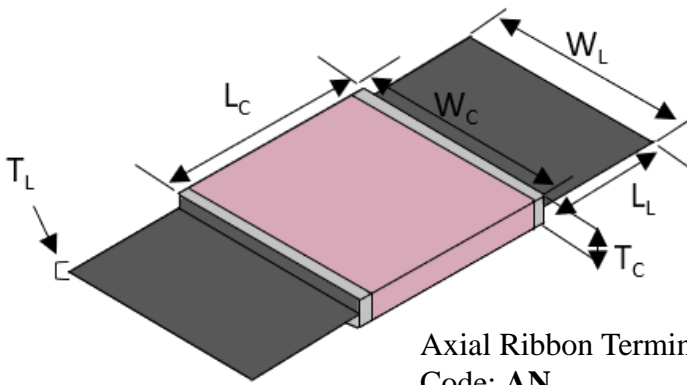
≠ Termination Types and Codes



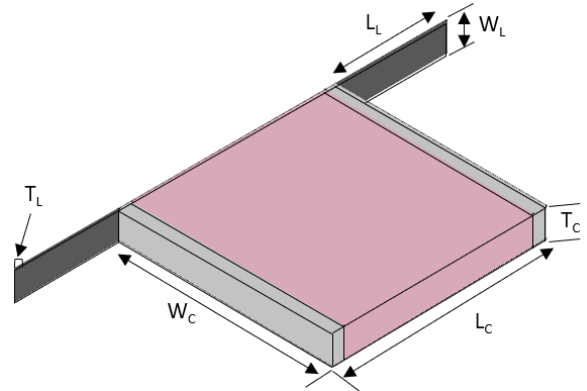
Chip Termination:
Codes: **L, P**



Microstrip Termination:
Codes: **MN**







Axial Ribbon Termination:
Code: **AN**



Radial Wire Termination:
Codes: **FN**

Termination Code	Magnetic Termination
L	90% Sn10%Pb Tin/Lead Solder over Nickel Plating

Termination Code	⊘ Non-Magnetic Terminations ⊘
P 	100% Sn Solder of Copper Plating
MN 	
AN 	Silver-Plated Copper
FN 	

Note: "Non-Magnetic" means no magnetic materials.



⊕ Termination Types For Termination Types images, see previous page

Unit: inch (millimeter)

Terminations								
Code	Term.	Capacitor Dimensions				Lead Dimensions		
		Length Lc	Width Wc	Thickness Tc	Overlap B	Length LL	Width WL	Thickness TL
⊕ P	Chip				0.063 (1.60) max	-	-	-
L	Chip (Tin/Lead)	1.30 -0.010+0.015	1.30±0.010	0.173±0.008				
⊕ MN	Microstrip	(33.02 - 0.25+0.38)	(33.02±0.25)	(4.40±0.20) max		0.787 ± 0.02 (20.0 ± 0.50)	1.299 ± 0.020 (33.0 ± 0.50)	0.012 ± 0.001 (0.30 ± 0.025)
⊕ AN	Axial Ribbon				-			
⊕ FN	Radial Ribbon					0.669 ± 0.012 (17.0 ± 0.30)	0.157 ± 0.008 (4.0 ± 0.20)	0.012 ± 0.001 (0.30 ± 0.025)

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



⚡ Electrical Specifications

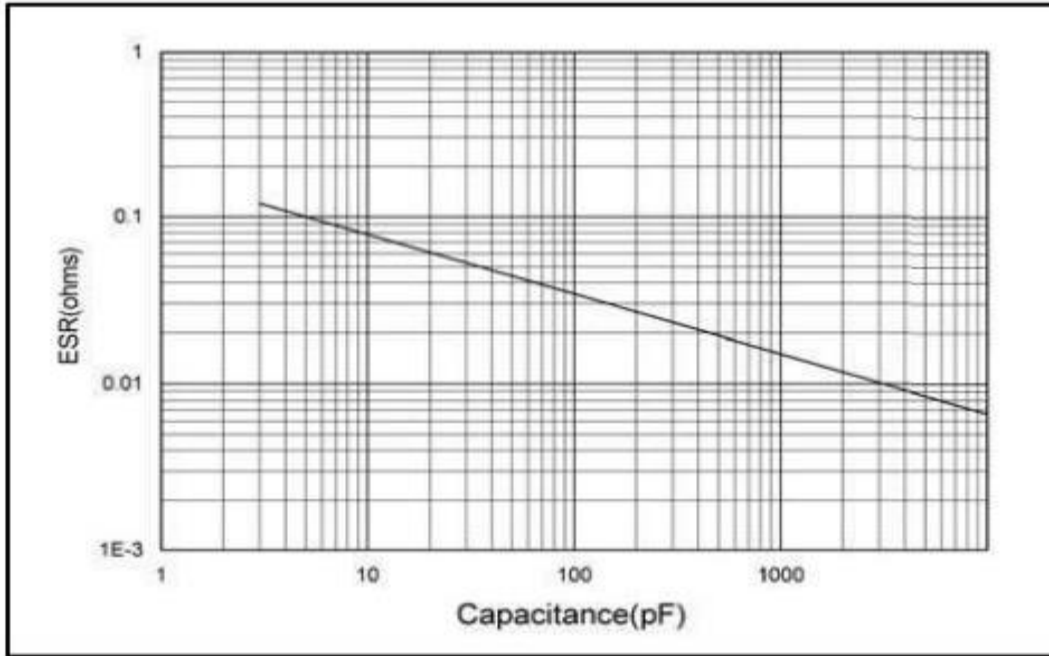
Quality Factor (Q)	No less than 1000pF, Q value more than 2000, Test Frequency 1MHz; More than 1000pF, Q value more than 2000, Test Frequency 1MHz
Insulation Resistance (IR)	Test Voltage: 500V 10 ⁵ Megaohms min. @ +25°C rated WVDC 10 ⁴ Megaohms min. @ +125°C rated WVDC
Rated Voltage	See Rated Voltage 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

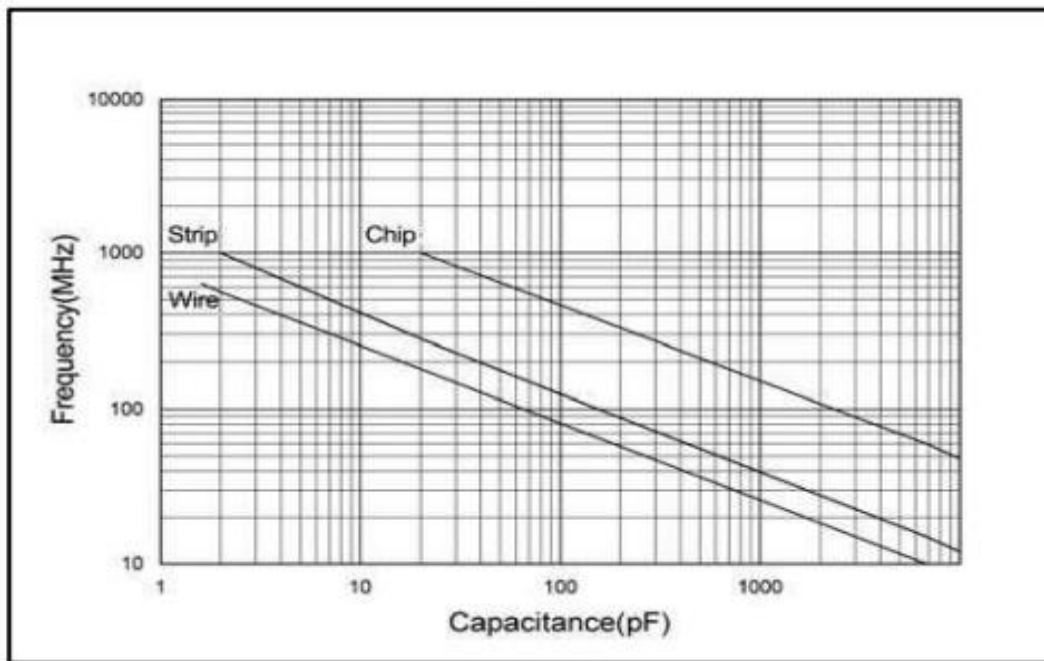
	Specification	Test Parameters
Thermal Shock	DWV: The initial value IR: Shall not be less than 30% of the initial value. Capacitance Change:	MIL-STD-202, Method 107, Condition A. At the maximum rated temperature (-55°C and 125°C) stay 30 minutes, the time of removing shall not be more than 3 minutes. Perform five cycles.
Moisture Resistance	No more than 0.5% or 0.5pF, whichever is greater.	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





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

1313C (1.30" x 1.30")

⚡ Rated Current vs. Frequency

