

# Multilayer Ceramic Chip Capacitors

NMC-H Series

## FEATURES

- UL X1/Y2 SAFETY CAPACITORS
- NPO & X7R DIELECTRICS
- FOR ACROSS THE LINE & LINE BYPASS

**RoHS  
Compliant**  
includes all homogeneous materials

\*See Part Number System for Details



SPECIFICATIONS	NPO	X7R
Operating Temperature Range	-55°C ~ +125°C	-55°C ~ +125°C
Temperature Characteristics	C<10pF ±150ppm C≥10pF ±30ppm	±15%
Dissipation Factor	C<10pF Tanδ <0.4% C≥10pF Tanδ <0.1%	±2.5% @ 1Vrms/1KHz
Insulation Resistance	100,000MegΩ or 1,000MegΩ/μF whichever is less After 1 minute at 500Vdc	100,000MegΩ or 500MegΩ/μF whichever is less After 1 minute at 500Vdc
Capacitance Range	2.0pF ~ 430pF	150pF ~ 1,500pF
Capacitance Tolerance	±5% (J)	±10% (K)
Rated Voltage	250Vac	250Vac
Impulse Voltage	5KVdc	5KVdc
Load Life Load Life 1,000 hours at 125°C (X1 @ 312.5Vac, Y2 @ 425Vac)	No visible damage after 24 ±2 hours ΔC/C ±10% or 1pF, whichever is greater Tanδ < 2 x specified value IR > 1,000MegΩ	No visible damage after 24 ±2 hours ΔC/C ±15% or ???pF, whichever is greater Tanδ ≤ 7% IR ≥ 2,000MegΩ
Dielectric Withstanding Voltage	X = 2,000Vac Y = 2,000Vac for 1 minute; 50mA max.	X = 2,000Vac Y = 2,000Vac for 1 minute; 50mA max.

### AVAILABLE VALUES (NPO) AND THICKNESS DIMENSIONS (T in mm)

Capacitance Value	NPO	
	1808	1812
2pF	1.60 ± 0.2mm	N/A
2.2		
2.7		
3.3		
3.9		
4.7		
5.0		
5.6		
6.8		
8.2		
10		
12		
15		
18		
22		
27	1.6 ± 0.2mm	
33		
39		
47		
56		
68		
82		
100		
120		
150		
180	2.0 ± 0.2mm	
220		
240		
270		
330		
390	N/A	
430		

### AVAILABLE VALUES (X7R) AND THICKNESS DIMENSIONS (T in mm)

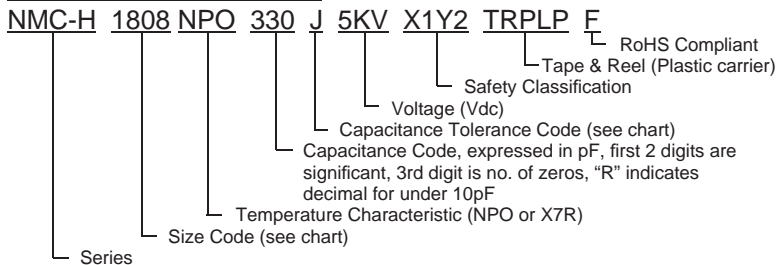
Capacitance Value	1808	1812
150pF	1.6 ± 0.20	
180		
220		
270	2.0 ± 0.20	1.6 ± 0.20
330		
390		
470		
560		
680		
820		
1000	2.0 ± 0.20	
1200		
1500		

### SAFETY APPROVALS

Agency	Standard
UL	1414



### PART NUMBER SYSTEM



### FEATURES

- **UL & TUV X2/Y3 SAFETY CAPACITORS**
- **NPO AND X7R DIELECTRICS**
- **FOR ACROSS THE LINE AND LINE BYPASS**

**RoHS**

**Compliant**

includes all homogeneous materials

\*See Part Number System for Details



SPECIFICATIONS	NPO	X7R
Operating Temperature Range	-55°C ~ +125°C	-55°C ~ +125°C
Temperature Characteristics	C<10pF ±150ppm C≥10pF ±30ppm	±15% with 0 VDC Applied
Dissipation Factor	0.3% max. @ 1MHz for <1000pF 0.1% max. @ 1KHz for ≥1000pF	±2.5% max. @ 1KHz 1.0Vrms and 25°C
Insulation Resistance	100,000MegΩ min. or 1,000MegΩ/μF whichever is less (+25°C after 1 minute at 500VDC)	100,000MegΩ or 500MegΩ/μF whichever is less (+25°C after 1 minute at 500VDC)
Capacitance Range	5pF ~ 330pF	150pF ~ 1,500pF
Capacitance Tolerance	±5% (J) ±10% (K)	±10% (K)
Rated Voltage	3KVdc/250Vac	
Load Life Load Life 1,000 hours at 125°C (X2 @ 312.5Vac, Y3 @ 425Vac)	No visible damage after 24 ± 2 hours ΔC/C ±10% or 1pF, whichever is greater, DF ≤ 200%, IR > 1,000MegΩ	No visible damage after 48 ± 4 hours ΔC/C ±15%, DF ≤ 7%, IR ≥ 2,000MegΩ
Dielectric Withstanding Voltage	X = 1,075Vac Y = 1,500Vac for 1 minute; 50mA max.	

### AVAILABLE VALUES AND THICKNESS DIMENSIONS (T in mm)

Capacitance Value	NPO	X7R
5pF	1.60 ± 0.2	
10		
12		
15		
18		
22		
27		
33		
39		
47		
56		
68		
82		
100		
120		
150	2.00 ± 0.2	1.60 ± 0.2
180		
220		
270		
330		
470		2.00 ± 0.2
560		
680		
820		
0.001μF		
0.0012		
0.0015		

### SAFETY APPROVALS

Agency	Standard
UL	1414
TUV	EN132400

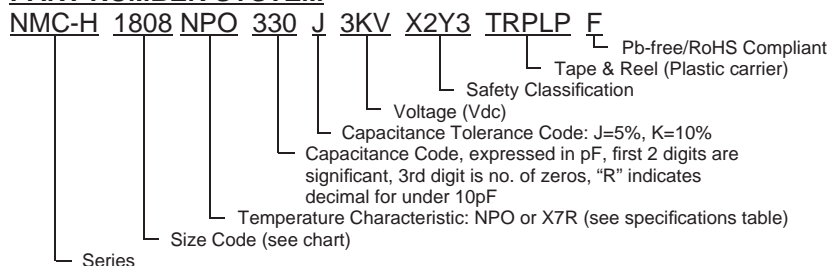


CERTIFICATE



CERTIFICATE

### PART NUMBER SYSTEM



### CASE DIMENSIONS (mm)

EIA Code	L	W	P	G
1808	4.8 ± 0.30	2.0 ± 0.30	0.30 min.	3.2 min.

### QUANTITY PER REEL (T)

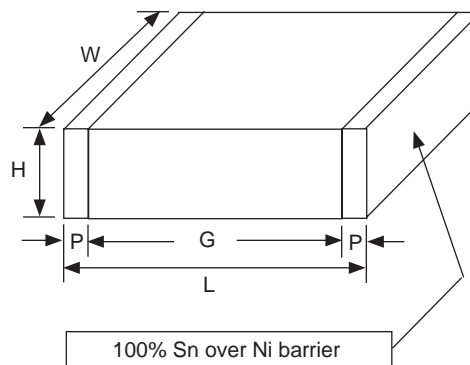
Part Thickness	Quantity
1.6 ± 0.2	2,000
2.0 ± 0.2	1,000

### CASE DIMENSIONS (mm)

EIA Code	L	W	P	G
1808	4.8 ± 0.30	2.0 ± 0.30	0.30 min.	3.2 min.
1812	4.8 ± 0.30	3.2 ± 0.30	0.30 min.	3.2 min.

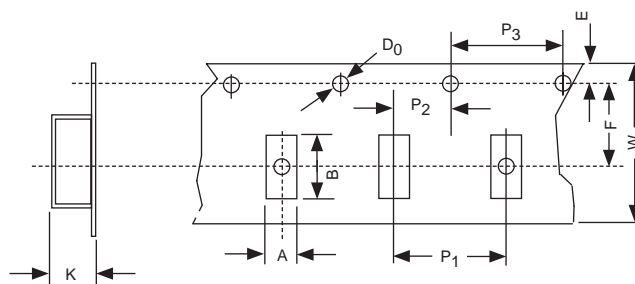
### QUANTITY PER REEL (T)

Part Thickness	Quantity	
	1808	1812
1.6 ± 0.2	2,000	1,000
2.0 ± 0.2	2,000	1,000



### EMBOSSED PLASTIC CARRIER DIMENSIONS (mm)

Type	A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>	φD <sub>o</sub>	K
1808	2.50 ± 0.30	4.90 ± 0.30	12.00 ± 0.20	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.05	1.50 ± 0.10	2.6 max.
1812	3.60 ± 0.30	4.90 ± 0.30		8.00 ± 0.10						



### REEL DIMENSIONS (mm)

Type	A	B	C	D	W
1808	180	62	13	20	8.4
1812	+0/-3.0	±1.5	±0.5	±0.5	+1.5/-0

