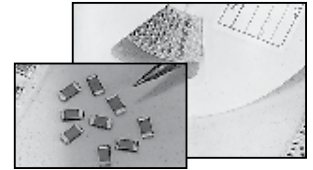


### FEATURES

- CLASS II DIELECTRIC, TEMPERATURE STABLE
- EXCELLENT FREQUENCY CHARACTERISTICS, NON-LINEAR CAPACITANCE CHANGE
- NICKEL BARRIER TERMINATIONS AND EXCELLENT MECHANICAL STRENGTH

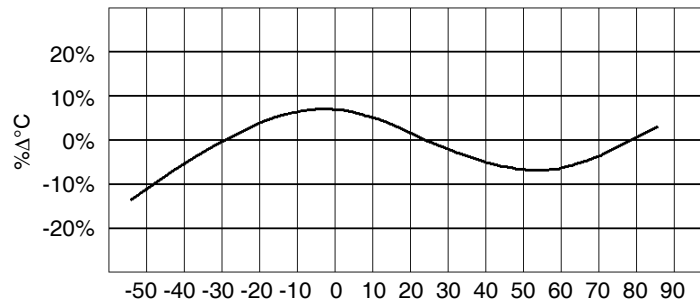
**Expanded  
01005  
Case Size**



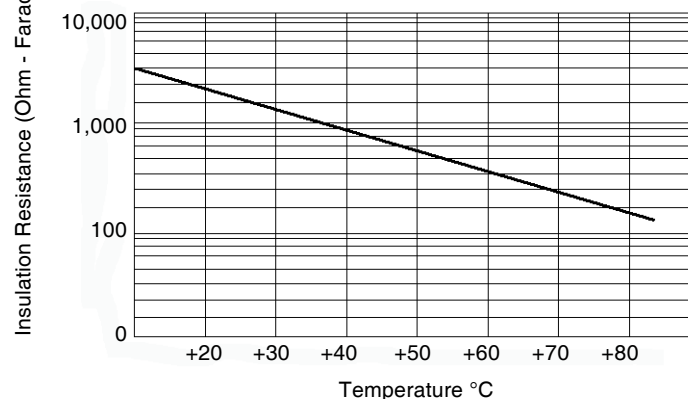
### CHARACTERISTICS

Capacitance Range	100pF ~ 0.82μF (see high CV datasheet for higher capacitance values)
Capacitance Tolerance	±10% (K), ±20% (M)
Operating Temperature Range	-55°C ~ +85°C
Temperature Characteristics	±15%Δ max. over temperature range (with 0 Vdc applied)
Rated Voltages	6.3Vdc, 10Vdc, 16Vdc & 25Vdc (see NMC-H Series for higher voltages)
Dissipation Factor	3.5% max. (≤ 0.1μF, 25Vdc), 5% max. (all 16Vdc & >0.1μF, 25Vdc), 7.5% (10Vdc), 10% (6.3Vdc) @ 1.0Vrms and 1KHz, +25°C
Insulation Resistance	10,000Megohms min. or 500Megohm/μF min. whichever is less @ +25°C
Dielectric Withstanding Voltage	250% of Rated Voltage for 5 ±1 seconds, 50mA maximum current
Test Conditions (EIA-198-2E)	1KHz, 1.0V ±0.2Vrms

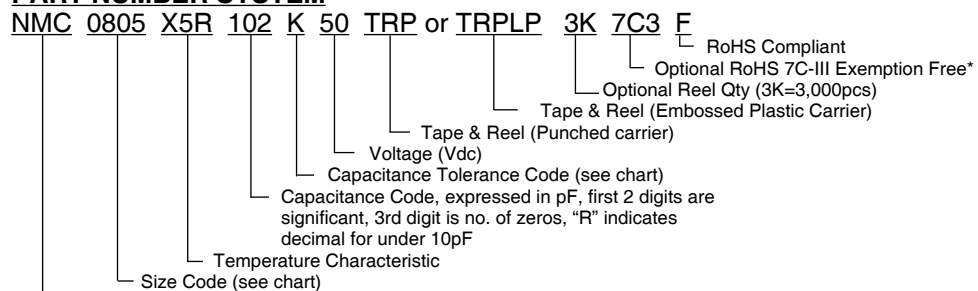
Typical X5R Temperature Coefficient



Insulation Resistance vs. Temperature



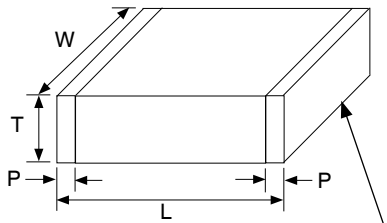
### PART NUMBER SYSTEM



\* - Part Number Level Identification of X5R MLCCs that do not take RoHS exemption 7C-III

EIA Case Size	01005	
Length (L)	0.4±0.02	
Width (W)	0.2±0.02	
Thickness max. (T)	0.22	
Termination Width (P)	0.1±0.03	
Capacitance	Working Voltage (Vdc)	
	6.3	10
100pF		
150pF		
220pF		
330pF		
470pF		
680pF		
1,000pF		
1,500pF		
2,200pF		
3,300pF		
4,700pF		
6,800pF		
10,000pF		

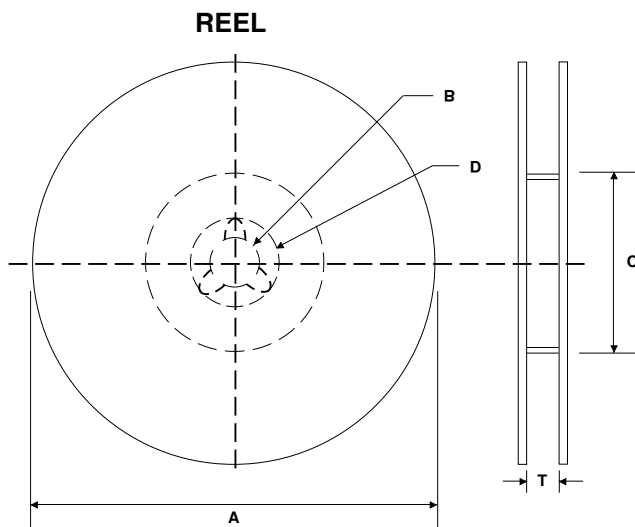
EIA Case Size	0201		0402			0603			
	Length (L)	Width (W)	Thickness max. (T)	Termination Width (P)	Working Voltage (Vdc)				
Capacitance	6.3	10	6.3	10	16	6.3	10	16	25
0.0012µF									
0.0015µF									
0.0018µF									
0.0022µF									
0.0027µF									
0.0033µF									
0.0039µF									
0.0047µF									
0.0056µF									
0.0068µF									
0.0075µF									
0.0082µF									
0.01µF									
0.015µF									
0.018µF									
0.022µF									
0.027µF									
0.033µF									
0.036µF									
0.039µF									
0.047µF									
0.056µF									
0.068µF									
0.075µF									
0.082µF									
0.1µF									
0.15µF									
0.18µF									
0.22µF									
0.27µF									
0.33µF									
0.36µF									
0.39µF									
0.47µF									
0.68µF									
0.82µF									



100% Sn over Ni barrier

(CONSULT FACTORY FOR CAPACITANCE VALUES NOT LISTED)

**See NMC High Capacitance datasheet for higher capacitance values or NMC-H High Voltage datasheet for higher voltage ratings**



### REEL DIMENSIONS (mm)

Reel Diameter (A)	B	C	D	T max.
7" (178 ± 2.0)	13 ± 0.5	50 min.	21 ± 1.0	8.4 +1.0/-0 (1812 case size 12.4 +2.0/-0)
10" (250 ± 2.0)		100 ± 1.0		
13" (330 ± 2.0)		100 ± 1.0		

### 7 INCH REEL QUANTITIES\*

Size	01005	0201	0402	0603	0805	1206	1210	1812
Tape Size	8mm	8mm	8mm	8mm	8mm	8mm	8mm	12mm
Min. Qty Per Reel	20,000	20,000	10,000	4,000	4,000	4,000	2,000	1,000
Max. Qty Per Reel	20,000	20,000	10,000	4,000	5,000	5,000	5,000	2,000

\*Quantity dependent on chip thickness. Contact NIC for reel quantities on larger diameter reels.

### CARRIER TAPE MATERIAL

Parts with a thickness of  $\geq 1\text{mm}$  will be taped on embossed plastic carrier. Parts with a thickness of less than 1mm will be taped on paper carrier

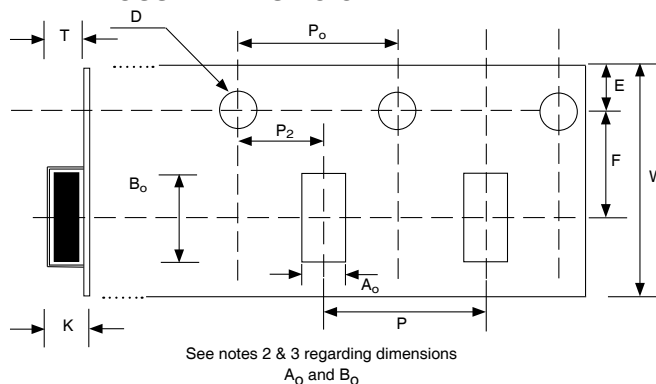
### EMBOSSED PLASTIC CARRIER TAPE DIMENSIONS (mm)

Tape Size	W	F	E	P <sub>0</sub>	P <sub>2</sub>	D	K max.	T max.	P
8mm	8.0 ± 0.2	3.5 ± 0.05	1.75 ± 0.10	4.0 ± 0.1	2.0 ± 0.5	1.5 <sup>+0.1</sup> <sub>-0.0</sub>	3.0	2.0	4.0 ± 0.1
12mm	12 ± 0.2	5.5 ± 0.05						4.5	8.0 ± 0.1

#### Notes:

- Specifications are in compliance with EIA RS481-1-A "Taping of surface Mount Components for Automatic Placement"
- Dimensions A<sub>0</sub> (max.) equals component width dimension plus 0.5mm
- Dimension B<sub>0</sub> (max.) equals component length dimension plus 0.5mm

### EMBOSSED PLASTIC CARRIER TAPE



### PUNCHED CARRIER TAPE DIMENSIONS (mm)

Type	A <sub>0</sub>	B <sub>0</sub>	W	F	E	P1	P0	D0	T1 max.	T2 max.	Mounting Hole
01005	0.25 ± 0.04	0.45 ± 0.04	8.0 ± 0.3	3.5 ± 0.05	1.75 ± 0.1	2.0 ± 0.05	4.0 ± 0.1	1.5 <sup>+0.1</sup> <sub>-0.0</sub>	0.27	0.36	Angular Punch Hole
0201	0.37 ± 0.03	0.67 ± 0.05				0.45			0.80		
0402	0.65 ± 0.05	1.15 ± 0.05				1.1			1.4		
0603	1.1 ± 0.2	1.9 ± 0.2									
0805	1.65 ± 0.2	2.4 ± 0.2									
1206	2.0 ± 0.2	3.6 ± 0.2									

### PUNCHED CARRIER TAPE

