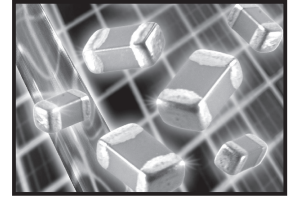


### FEATURES

- LOWER ESR - HIGH Q at HIGH FREQUENCY
- STABLE NPO CHARACTERISTICS OVER TEMPERATURE AND VOLTAGE
- EIA 0201, 0402 AND 0603 CASE SIZES
- IDEAL FOR WIRELESS DATA AND VOICE COMMUNICATIONS APPLICATIONS  
WLANs, HIPERLAN, 802.11A, 802.11B, Wi-Fi, BLUETOOTH, TELEMATICS, PCS, LMDS AND CELLULAR



SPECIFICATIONS	NPO
Capacitance Range	0.1pF ~ 22pF
Capacitance Tolerance	±0.1pF(B), ±0.25pF(C), ±0.5pF(D) ±1%(F), ±2%(G), ±5% (J)
Operating Temperature Range	-55°C ~ +125°C
Temperature Characteristics	0 ± 30PPM/°C
Rated Voltage	25Vdc, 50Vdc
Dissipation Factor	0.001 max. (1MHz, +25°C)
Insulation Resistance	10,000 Megohms min. @ +25°C
Dielectric Withstanding Voltage	125Vdc for 5 ± 1 seconds

Note: Reflow soldering allowed for all case sizes. Contact NIC for wave soldering restrictions.

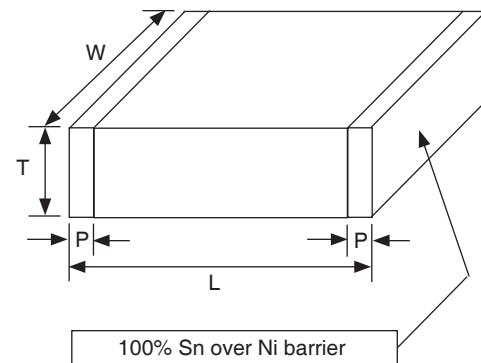
### RoHS Compliant

Includes all homogeneous materials

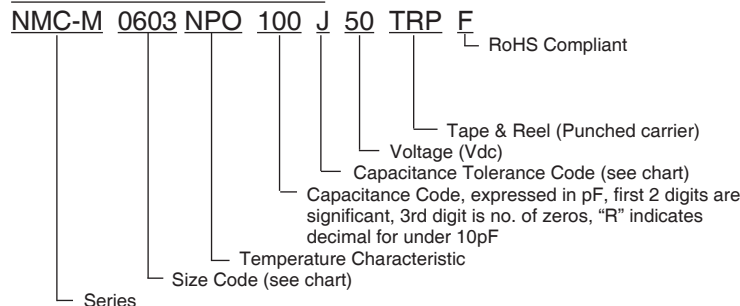
\*See Part Number System for Details

### DIMENSIONS (mm)

EIA Case Size	0201	0402	0603
Length (L)	0.6 ± 0.03	1.0 ± 0.05	1.6 ± 0.15
Width (W)	0.3 ± 0.03	0.5 ± 0.05	0.8 ± 0.15
Thickness (T)	0.33 max.	0.6 max.	1.0 max.
Termination Width (P)	0.10 ~ 0.20	0.10 ~ 0.30	0.25 ~ 0.60



### PART NUMBER SYSTEM



## 0201 25 VOLT STANDARD VALUES AND CHARACTERISTICS

NIC PART NUMBER	CAPACITANCE VALUE (pF)	AVAILABLE TOLERANCE	Q FACTOR (MIN. @ 1GHz)	ESR $\Omega$ (@ 1GHz)*
NMC-M0201NPO0R1_25TRPF	0.1	B, C	350	0.900
NMC-M0201NPO0R2_25TRPF	0.2	B, C	350	0.900
NMC-M0201NPO0R3_25TRPF	0.3	B, C	350	0.900
NMC-M0201NPO0R4_25TRPF	0.4	B, C	350	0.900
NMC-M0201NPO0R5_25TRPF	0.5	B, C	350	0.800
NMC-M0201NPO0R6_25TRPF	0.6	B, C	350	0.700
NMC-M0201NPO0R7_25TRPF	0.7	B, C	350	0.600
NMC-M0201NPO0R8_25TRPF	0.8	B, C	350	0.500
NMC-M0201NPO0R9_25TRPF	0.9	B, C	350	0.500
NMC-M0201NPO1R0_25TRPF	1.0	B, C	350	0.400
NMC-M0201NPO1R1_25TRPF	1.1	B, C	300	0.400
NMC-M0201NPO1R2_25TRPF	1.2	B, C	300	0.350
NMC-M0201NPO1R3_25TRPF	1.3	B, C	300	0.300
NMC-M0201NPO1R5_25TRPF	1.5	B, C	300	0.300
NMC-M0201NPO1R6_25TRPF	1.6	B, C	300	0.300
NMC-M0201NPO1R8_25TRPF	1.8	B, C	300	0.300
NMC-M0201NPO2R0_25TRPF	2.0	B, C	250	0.300
NMC-M0201NPO2R2_25TRPF	2.2	B, C	250	0.250
NMC-M0201NPO2R4_25TRPF	2.4	B, C	250	0.250
NMC-M0201NPO2R7_25TRPF	2.7	B, C	250	0.250
NMC-M0201NPO3R0_25TRPF	3.0	B, C	200	0.250
NMC-M0201NPO3R3_25TRPF	3.3	B, C	200	0.250
NMC-M0201NPO3R9_25TRPF	3.9	B, C	200	0.200
NMC-M0201NPO4R7_25TRPF	4.7	B, C	200	0.150
NMC-M0201NPO5R6_25TRPF	5.6	B, C, D	120	0.150
NMC-M0201NPO6R8_25TRPF	6.8	B, C, D	120	0.150
NMC-M0201NPO8R2_25TRPF	8.2	B, C, D	120	0.150
NMC-M0201NPO100_25TRPF	10	F, G, J	120	0.150

\*Typical ESR



### 0402 25 VOLT STANDARD VALUES AND CHARACTERISTICS

NIC PART NUMBER	CAPACITANCE VALUE (pF)	AVAILABLE TOLERANCE	Q FACTOR (MIN. @ 1GHz)	ESR $\Omega$ (@ 1GHz)*
NMC-M0402NPO0R1B25TRPF	0.1	B	500	3.183
NMC-M0402NPO0R2B25TRPF	0.2	B	500	1.592
NMC-M0402NPO0R3B25TRPF	0.3	B	500	1.061
NMC-M0402NPO0R4B25TRPF	0.4	B	500	0.796
NMC-M0402NPO0R5B25TRPF	0.5	B	500	0.637
NMC-M0402NPO0R6B25TRPF	0.6	B	500	0.531
NMC-M0402NPO0R7B25TRPF	0.7	B	500	0.455
NMC-M0402NPO0R8B25TRPF	0.8	B	500	0.398
NMC-M0402NPO0R9B25TRPF	0.9	B	500	0.354
NMC-M0402NPO1R0B25TRPF	1.0	B	350	0.455
NMC-M0402NPO1R1B25TRPF	1.1	B	350	0.413
NMC-M0402NPO1R2B25TRPF	1.2	B	350	0.379
NMC-M0402NPO1R3B25TRPF	1.3	B	350	0.350
NMC-M0402NPO1R5B25TRPF	1.5	B	350	0.303
NMC-M0402NPO1R6B25TRPF	1.6	B	350	0.284
NMC-M0402NPO1R8B25TRPF	1.8	B	350	0.253
NMC-M0402NPO2R0B25TRPF	2.0	B	250	0.318
NMC-M0402NPO2R2B25TRPF	2.2	B	250	0.289
NMC-M0402NPO2R4B25TRPF	2.4	B	250	0.265
NMC-M0402NPO2R7B25TRPF	2.7	B	250	0.236
NMC-M0402NPO3R0B25TRPF	3.0	B	250	0.212
NMC-M0402NPO3R3C25TRPF	3.3	C	200	0.241
NMC-M0402NPO3R9C25TRPF	3.9	C	180	0.227
NMC-M0402NPO4R7C25TRPF	4.7	C	150	0.226
NMC-M0402NPO5R6C25TRPF	5.6	C	120	0.237
NMC-M0402NPO6R8C25TRPF	6.8	C	100	0.234
NMC-M0402NPO8R2C25TRPF	8.2	C	80	0.243
NMC-M0402NPO100C25TRPF	10	C	80	0.199
NMC-M0402NPO120J25TRPF	12	J	60	0.211
NMC-M0402NPO150J25TRPF	15	J	40	0.265

\*Typical ESR

### 0402 50 VOLT STANDARD VALUES AND CHARACTERISTICS

NIC PART NUMBER	CAPACITANCE VALUE (pF)	AVAILABLE TOLERANCE	Q FACTOR (MIN. @ 1GHz)	ESR $\Omega$ (@ 1GHz)*
NMC-M0402NPO0R1B50TRPF	0.1	B	300	2.112
NMC-M0402NPO0R2B50TRPF	0.2	B	300	1.324
NMC-M0402NPO0R3B50TRPF	0.3	B	300	0.911
NMC-M0402NPO0R4B50TRPF	0.4	B	300	0.884
NMC-M0402NPO0R5B50TRPF	0.5	B	300	0.851
NMC-M0402NPO0R6B50TRPF	0.6	B	300	0.751
NMC-M0402NPO0R7B50TRPF	0.7	B	300	0.723
NMC-M0402NPO0R8B50TRPF	0.8	B	300	0.679
NMC-M0402NPO0R9B50TRPF	0.9	B	300	0.659
NMC-M0402NPO1R0B50TRPF	1.0	B	300	0.652
NMC-M0402NPO1R1B50TRPF	1.1	B	300	0.584
NMC-M0402NPO1R2B50TRPF	1.2	B	250	0.481
NMC-M0402NPO1R3B50TRPF	1.3	B	250	0.453
NMC-M0402NPO1R5B50TRPF	1.5	B	350	0.422
NMC-M0402NPO1R6B50TRPF	1.6	B	250	0.422
NMC-M0402NPO1R8B50TRPF	1.8	B	250	0.399
NMC-M0402NPO2R0B50TRPF	2.0	B	200	0.356
NMC-M0402NPO2R2B50TRPF	2.2	B	200	0.354
NMC-M0402NPO2R4B50TRPF	2.4	B	200	0.321
NMC-M0402NPO2R7B50TRPF	2.7	B	200	0.322
NMC-M0402NPO3R0B50TRPF	3.0	B	200	0.321
NMC-M0402NPO3R3C50TRPF	3.3	C	200	0.288
NMC-M0402NPO3R9C50TRPF	3.9	C	180	0.244
NMC-M0402NPO4R7C50TRPF	4.7	C	150	0.218
NMC-M0402NPO5R6C50TRPF	5.6	C	150	0.201
NMC-M0402NPO6R8C50TRPF	6.8	C	150	0.201
NMC-M0402NPO8R2C50TRPF	8.2	C	100	0.203
NMC-M0402NPO100C50TRPF	10	C	100	0.202
NMC-M0402NPO120J50TRPF	12	J	60	0.165
NMC-M0402NPO150J50TRPF	15	J	40	0.149
NMC-M0402NPO180J50TRPF	18	J	40	0.138
NMC-M0402NPO220J50TRPF	22	J	40	0.121

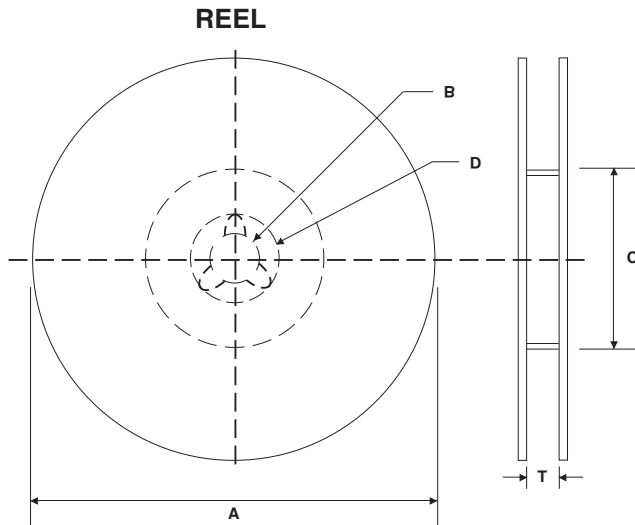
\*Typical ESR

## 0603 50 VOLT STANDARD VALUES AND CHARACTERISTICS

NIC PART NUMBER	CAPACITANCE VALUE (pF)	AVAILABLE TOLERANCE	Q FACTOR (MIN. @ 1GHz)	ESR $\Omega$ (@ 1GHz)*
NMC-M0603NPO0R4B50TRPF	0.4	B	300	1.326
NMC-M0603NPO0R5B50TRPF	0.5	B	300	1.061
NMC-M0603NPO0R6B50TRPF	0.6	B	300	0.884
NMC-M0603NPO0R7B50TRPF	0.7	B	300	0.757
NMC-M0603NPO0R8B50TRPF	0.8	B	300	0.663
NMC-M0603NPO0R9B50TRPF	0.9	B	300	0.589
NMC-M0603NPO1R0B50TRPF	1.0	B	300	0.530
NMC-M0603NPO1R1B50TRPF	1.1	B	300	0.482
NMC-M0603NPO1R2B50TRPF	1.2	B	250	0.530
NMC-M0603NPO1R5B50TRPF	1.5	B	250	0.424
NMC-M0603NPO1R8B50TRPF	1.8	B	200	0.442
NMC-M0603NPO2R0B50TRPF	2.0	B	200	0.397
NMC-M0603NPO2R2_50TRPF	2.2	B, C	100	0.723
NMC-M0603NPO2R4_50TRPF	2.4	B, C	100	0.663
NMC-M0603NPO2R7_50TRPF	2.7	B, C	100	0.589
NMC-M0603NPO3R0_50TRPF	3.0	B, C	100	0.530
NMC-M0603NPO3R6_50TRPF	3.6	B, C	100	0.442
NMC-M0603NPO3R6_50TRPF	3.9	B, C	100	0.408
NMC-M0603NPO4R3_50TRPF	4.3	B, C	100	0.370
NMC-M0603NPO4R7_50TRPF	4.7	B, C	100	0.338
NMC-M0603NPO5R1_50TRPF	5.1	C, D	80	0.390
NMC-M0603NPO5R6_50TRPF	5.6	C, D	80	0.355
NMC-M0603NPO6R2_50TRPF	6.2	C, D	80	0.320
NMC-M0603NPO6R8_50TRPF	6.8	C, D	80	0.292
NMC-M0603NPO7R5_50TRPF	7.5	C, D	80	0.265
NMC-M0603NPO8R2_50TRPF	8.2	C, D	80	0.242
NMC-M0603NPO9R1_50TRPF	9.1	C, D	80	0.218
NMC-M0603NPO100_50TRPF	10	F, G, J	80	0.198
NMC-M0603NPO120_50TRPF	12	F, G, J	70	0.189
NMC-M0603NPO150_50TRPF	15	F, G, J	60	0.176
NMC-M0603NPO180_50TRPF	18	F, G, J	50	0.176
NMC-M0603NPO200_50TRPF	20	F, G, J	30	0.265
NMC-M0603NPO220_50TRPF	22	F, G, J	30	0.241

\*Typical ESR





### 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 ≥1mm will be taped on embossed plastic carrier. Parts with a thickness of less than 1mm will be taped on paper carrier

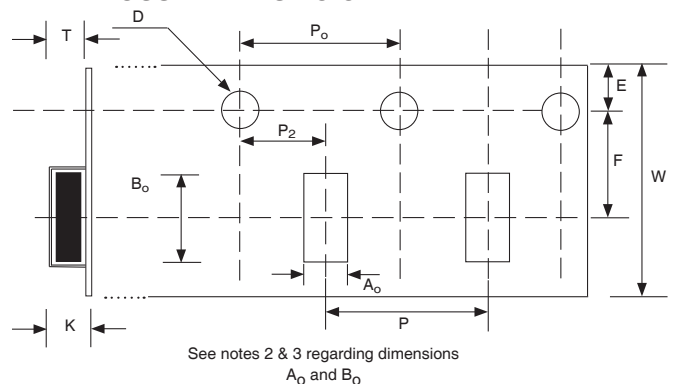
### EMBOSSED PLASTIC CARRIER TAPE DIMENSIONS (mm)

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>	0.3	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

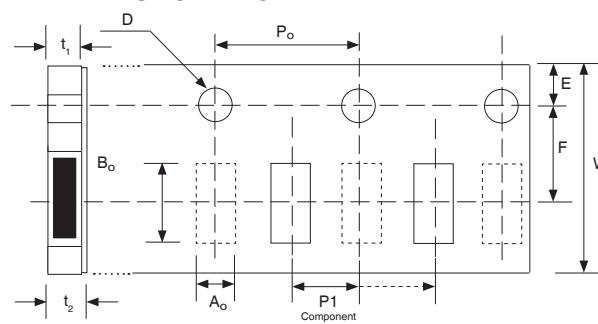
### EMBOSSED PLASTIC CARRIER TAPE



### 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				4.0 ± 0.10			0.45	0.80	
0402	0.65 ± 0.05	1.15 ± 0.05									
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



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[NPIS43LS220MTRF](#) [NDTM476K35F2F](#) [NTC-T475K50TRDF](#) [NCD222M1KVZ5UKF](#) [NRLR472M63V25X40SF](#) [NTP157M10TRD\(40\)F](#)  
[NPIM74C3R3MTRF](#) [NPI104C100MTRF](#) [NRLM102M100V25X25F](#) [NRLM223M50V 35X50F](#)