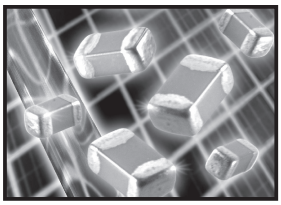
NMC-M Series
Surface Mount Ceramic Capacitors

ROHS/REACH COMPLIANT HALOGEN FREE

NIC COMPONENTS Performance Passives By Design



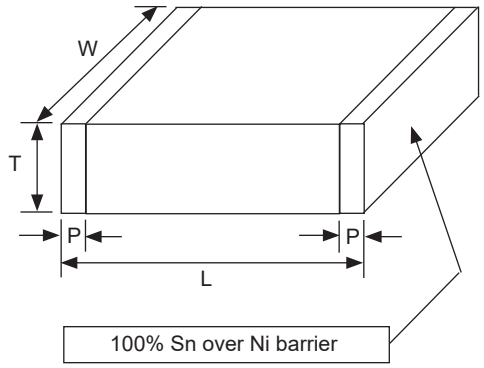
FEATURES
- LOWER ESR - HIGH Q at HIGH FREQUENCY
- STABLE NPO CHARACTERISTICS OVER TEMPERATURE AND VOLTAGE
- EIA 0402 AND 0603 CASE SIZES
- IDEAL FOR WIRELESS DATA AND VOICE COMMUNICATIONS APPLICATIONS WLANs, HIPERLAN, 802.11A, 802.11B, Wi-Fi, BLUETOOTH,TELEMATICS, PCS, LMDS AND CELLULAR

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.

DIMENISONS (mm)

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



PART NUMBER SYSTEM

NMC-M 0603 NPO 100 J 50 TRP F

- F — RoHS Compliant
- TRP — Tape & Reel (Punched carrier)
- 50 — Voltage (Vdc)
- J — Capacitance Tolerance Code (see chart)
- 100 — Capacitance Code, expressed in pF, first 2 digits are significant, 3rd digit is no. of zeros, “R” indicates decimal for under 10pF
- NPO — Temperature Characteristic
- 0603 — Size Code (see chart)
- NMC-M — Series

0402 25 VOLT STANDARD VALUES AND CHARACTERISTICS

NIC PART NUMBER	CAPACITANCE VALUE (pF)	AVAILABLE TOLERANCE	Q FACTOR (MIN. @ 1GHz)	ESR Ω (@ 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 Ω (@ 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

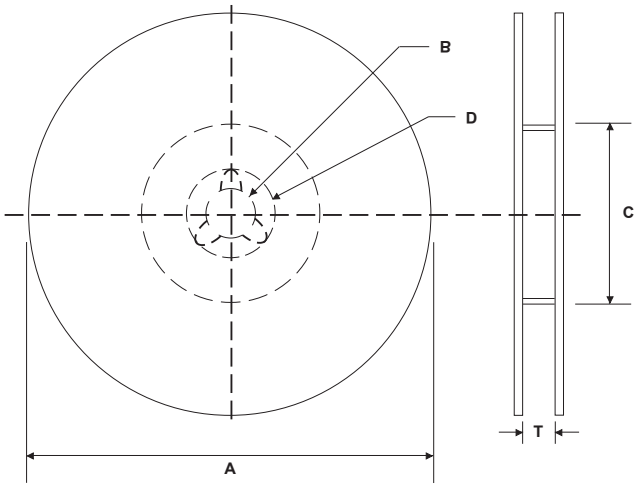
*Typical ESR

0603 50 VOLT STANDARD VALUES AND CHARACTERISTICS

NIC PART NUMBER	CAPACITANCE VALUE (pF)	AVAILABLE TOLERANCE	Q FACTOR (MIN. @ 1GHz)	ESR Ω (@ 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



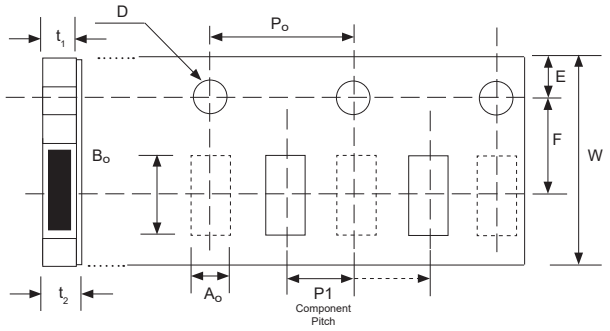
REEL DIMENSIONS (mm)

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	0402	0603
Tape Size	8mm	8mm
Min. Qty Per Reel	10,000	4,000
Max. Qty Per Reel	10,000	4,000

PUNCHED CARRIER TAPE DIMENSIONS (mm)

Type	A_o	B_o	W	F	E	P1	P0	D0	T1 max.	T2 max.	Mounting Hole
0402	0.65 ± 0.05	1.15 ± 0.05	8.0 ± 0.3	3.5 ± 0.05	1.75 ± 0.1	2.0 ± 0.05	4.0 ± 0.1	1.5 +0.1/-0.0	1.1	1.4	Angular Punch Hole
0603	1.1 ± 0.2	1.9 ± 0.2				4.0 ± 0.10					

PUNCHED CARRIER TAPE