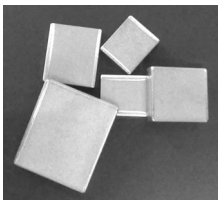


FEATURES

- **HIGH CAPACITANCE (22μF) AND VOLTAGE (8KV)**
- X7R DIELECTRIC (NPO in DEVELOPMENT)
- IDEAL FOR HIGH CAPACITY SMPS AND DC-DC CONVERTERS
- DESIGN FOR REFLOW SOLDERING
- CASE SIZES 3530 TO 6560

Temperature Coefficient	X7R
Capacitance Range	1000pF ~ 22μF
Capacitance Tolerance	10% (K) & 20% (M)
Operating Temperature Range	-55°C ~ +125°C
Temperature Characteristics	±15% Δ Cap.
Rated Voltages	50Vdc ~ 8KVdc
Dissipation Factor	≤ 2.5%
Aging Rate	2.5% per decade
insulation Resistance	10Gigohm or 100Megohm/μF whichever is less @ +25°C
Dielectric Withstanding Voltage	1. Rated Voltage ≤ 500V: 200% of Rated Voltage for 5 ± 1 sec., 50mA max. 2. Rated Voltage > 500 < 1KV: 150% of Rated Voltage for 5 ± 1 sec., 50mA max. 3. 1KV ≤ Rated Voltage ≤ 5KV: 120% of Rated Voltage for 5 ± 1 sec., 50mA max. 4. 5KV < Rated Voltage ≤ 8KV: 100% of Rated Voltage for 5 ± 1 sec., 50mA max. (immersed in insulating fluid)
Test Conditions (EIA-198-2E)	1KHz, 1.0V ±0.1Vrms (ALC on)

X7R DIELECTRIC - STANDARD CASE SIZES AND VALUES

EIA Case Size	3530	3640	4540	5550	6560
Length (L) ± 0.51	8.89	9.14	11.43	13.97	16.51
Width (W) ± 0.51	7.62	10.16	10.16	12.70	15.24
Thickness max. (T)	5.08	5.08	5.08	5.08	5.08
Termination Width min. (P)	0.30	0.30	0.30	0.30	0.30
Working Voltage (VDC)	Maximum Capacitance Value (μF) per Case Size*				
50V	6.8μF	8.2μF	12μF	18μF	22μF
100V	4.7μF	5.6μF	6.8μF	8.2μF	18μF
200V	2.2μF	2.2μF	2.2μF	2.7μF	10μF
500V	0.47μF	0.56μF	1.0μF	1.2μF	4.7μF
1KV	0.22μF	0.27μF	0.33μF	0.39μF	1.0μF
2KV	0.047μF	0.068μF	0.1μF	0.12μF	0.33μF
3KV	0.015μF	0.022μF	0.068μF	0.082μF	0.22μF
4KV	0.0056μF	0.015μF	0.027μF	0.033μF	0.1μF
5KV	0.0022μF	0.01μF	0.022μF	0.027μF	0.047μF
8KV	See Note*	0.0012μF	0.0015μF	0.0018μF	0.0022μF

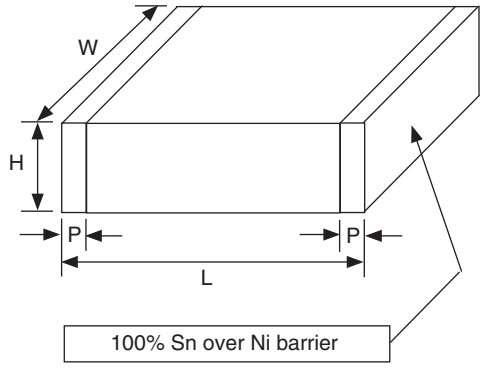
*Note: Contact NIC regarding other case sizes and values not shown.

PART NUMBER SYSTEM

NMC-W 3530 X7R 473 J 5KV T F

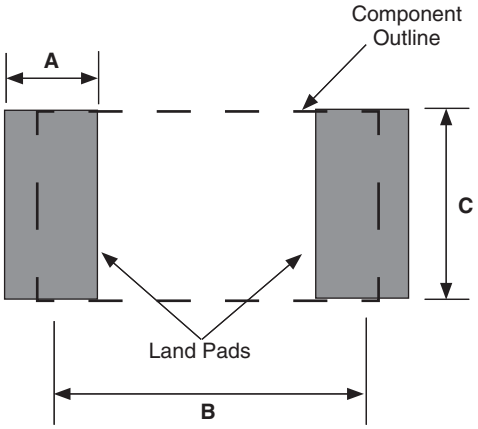
- F — RoHS compliant
- T — T = Tray Packaging
- 5KV — Voltage (Vdc)
- J — Capacitance Tolerance Code (see chart)
- 473 — Capacitance Code, expressed in pF, first 2 digits are significant, 3rd digit is no. of zeros
- X7R — Temperature Characteristic
- 3530 — Size Code (see chart)
- NMC-W — Series

CONSTRUCTION

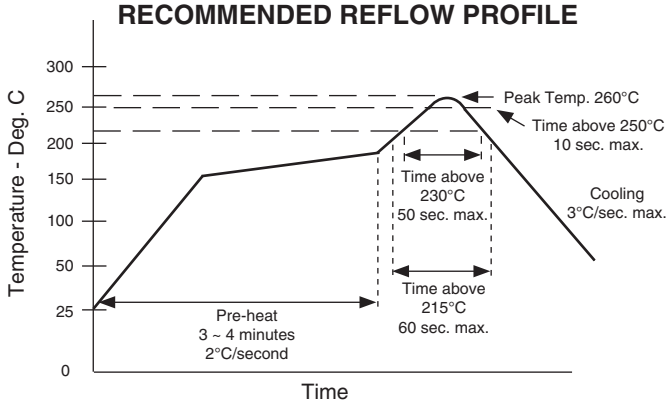


RECOMMENDED LAND PATTERN DIM. (mm)

Dimension	Size				
	3530	3640	4540	5550	6560
A	1.85	1.85	1.85	1.85	1.85
B	8.10	8.40	10.70	13.20	15.80
C	8.00	10.55	10.55	13.10	15.65



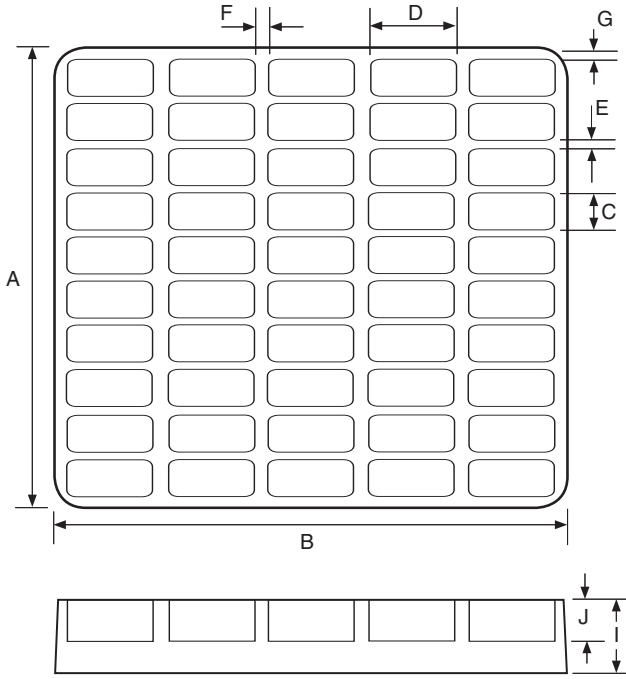
RECOMMENDED REFLOW PROFILE



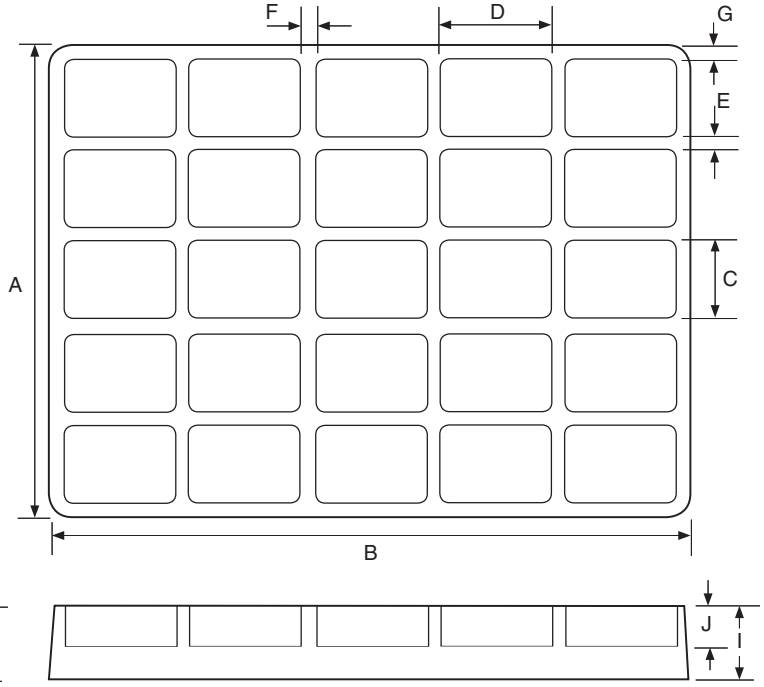
PCB ASSEMBLY PROCESS NOTES
• To prevent external surface flashover of MLCCs with voltage rating ≥ 5KV application of a polymer spray coating with high dielectric strength, temperature resistivity and self-drying characteristic by applied.
• Component (MLCC) transfer (from tray to PCB surface) by plastic tip tweezers is recommended. Metal tip tweeters are not suggested, as may cause damage to MLCC chip body
• Component transfer (from tray to PCB) by vacuum pencil is not recommended
• Reflow soldering is recommended solder attach process (see suggested reflow soldering profile above)
• Do not use forced cooling of PCB or MLCC as risk for damage or thermal cracking to MLCC
• Wave - Flow soldering is not recommended as risk for thermal cracking of MLCC
• Hand soldering is not recommended for mass production
• If hand soldering is used for bread boarding or prototyping, suggest hand soldering user follow NIC hand soldering guideline: LINK: www.niccomp.com/help/techinfo/ceramic_caps/handsoldering.pdf

TRAY DIMENSIONS AND QUANTITY

FIFTY (50) PIECE TRAY
CASE SIZE 3530 ~ 4045



TWENTY-FIVE (25) PIECE TRAY
CASE SIZE 5550 ~ 6560



Tray Dimension	3530	3640	4540	5550	6560
A	137			126	
B	123			171	
C	14			21	
D	21			30	
E	3.0			3.5	
F	3.0			3.5	
G	3.0			3.5	
I	20			20	
J	12.0			12.0	
Tray Quantity	50 pieces			25 pieces	