Issue Date: April 29th, 2024

Subject: NSPU End of Life Notification
Notification Type: End of Life

Effected NIC Products: NSPU Series

Effective Date: April 29th, 2024
Last Order Date: December 27th, 2024 for established customers with existing business
Last Ship Date: September 20th, 2025 for established customers with existing business

Description: Due to declining market demand NIC has discontinued production of the NSPU series.

Discontinued Part Number	Capacitance (uF)	Voltage (VDC)	Case Size	Possible Alternative	Comments
NSPU104M16TRA3F	0.1	16	0805	NMC0805X7R104M50TRPF	Voltage Bias
NSPU154M16TRB4F	0.15	16	1206	NSPH154M50V1206TRF	Higher Voltage
NSPU224M16TRB4F	0.22	16	1206	NSPH224M50V1206TRF	Higher Voltage
NSPU334M16TRB5F	0.33	16	1206	NSPH334M50V1206TRF	Higher Voltage
NSPU474M16TRB6F	0.47	16	1206	NSPH474M35V1206TRF	Higher Voltage
NSPU684M16TRB6F	0.68	16	1206	NSPH684M25V1206TRF	Higher Voltage
NSPU105M16TRC4F	1.0	16	1210	NSPH105M35V1210TRF	Higher Voltage

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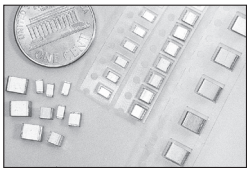
Stacked Film Capacitor Chips

NSPU Series

FEATURES

- STACKED METALLIZED ACRYLIC RESIN FILM (THERMO-CURE TYPE)
- STANDARD EIA 0805, 1206 AND 1210 SIZES
- HIGH HEAT AND MOISTURE RESISTANT
- STABLE TEMPERATURE, FREQUENCY & BIAS CHARACTERISTICS
- REFLOW SOLDERING ONLY
- TAPE AND REEL PACKAGING

NSPU IS RECOMMENDED FOR NEW DESIGNS



SPECIFICATIONS	Case Sizes		
	0805	1206	1210
Capacitance Range	0.1µF	0.15µF ~ 0.068µF	1.0µF
Voltage Ratings	16Vdc		
Capacitance Tolerance	±20% (M)		
Temperature Range	-40°C ~ +85°C		
Dissipation Factor (20°C)	1.5% @ 1KHz/25°C		
Insulation Resistance (20°C)	C ≤ 0.33µF = 1000MΩ, C ≥ 0.47µF = 300MΩ/µF @ 10Vdc		
Dielectric Withstanding Voltage	175% of Rated Voltage (5 seconds) 150% of Rated Voltage (60 seconds)		
Temperature Characteristic	-20% ~ +5% ΔC Maximum Over Temperature Range		

RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details

ENVIRONMENTAL CHARACTERISTICS

Life Test At +85°C 1,000 Hours at 125% of Rated Voltage	Capacitance Change	Within +7% ~ -20% of Initial Value
	Dissipation Factor	1.65% Maximum @ 1KHz
	Insulation Resistance	C ≤ 0.33µF = 300MΩ Min., C ≥ 0.47µF = 100MΩ/µF
Resistance to Soldering Heat Reflow: 240°C Peak	Capacitance Change	Within +3% ~ -15% of Initial Value
	Dissipation Factor	1.65% Maximum ~ 1KHz
	Insulation Resistance	C ≤ 0.33µF = 500MΩ Min., C ≥ 0.47µF = 150MΩ/µF
	Withstanding Voltage	150% of rated voltage for 60 seconds 175% of rated voltage for 5 seconds
Humidity Load Life +40°C & 90% ~ 95% RH 500 Hours @ rated voltage	Capacitance Change	Within +20%/-3% of Initial value
	Dissipation Factor	2.25% Maximum
	Insulation Resistance	C ≤ 0.33µF = 100MΩ Min., C ≥ 0.47µF = 30MΩ/µF
	Withstanding Voltage	130% of rated voltage for 60 seconds
Solderability with 25% Wt Rosin-Methanol Flux	90% Minimum Coverage After 2.5 Second Dip into 245°C Solder Pot	

PART NUMBER SYSTEM

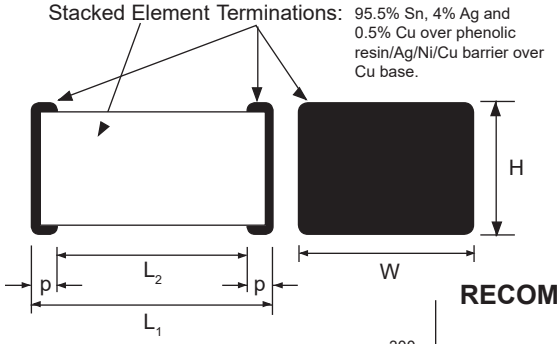
NSPU 104 M 16 TR A3 F

- F — RoHS compliant
- A3 — Size Code
- TR — Tape & Reel
- 16 — Voltage
- M — Tolerance Code: M=±20%
- 104 — Capacitance in pF, 1st two digits are significant, 3rd digit is no. of zeros
- NSPU — Series

STANDARD VALUES AND CASE SIZES (mm)

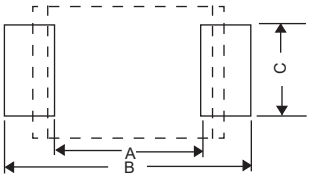
Part Number	Capacitance Value	Dimensions (mm)				EIA Size	Reel Qty
		L ± 0.2	W ± 0.2	H ± 0.2	P		
NSPU104M16TRA3F	0.1µF	2.0	1.25	1.0	0.45 ± 0.25	0805	3,000
NSPU154M16TRB4F	0.15µF	3.2	1.6	0.8	0.65 ± 0.30	1206	3,000
NSPU224M16TRB4F	0.22µF			0.8		1206	3,000
NSPU334M16TRB5F	0.33µF			1.0		1206	3,000
NSPU474M16TRB6F	0.47µF			1.4		1206	2,000
NSPU684M16TRB6F	0.68µF			1.4		1206	2,000
NSPU105M16TRC4F	1.0µF		2.5	1.4		1210	2,000

Stacked Element Terminations: 95.5% Sn, 4% Ag and 0.5% Cu over phenolic resin/Ag/Ni/Cu barrier over Cu base.

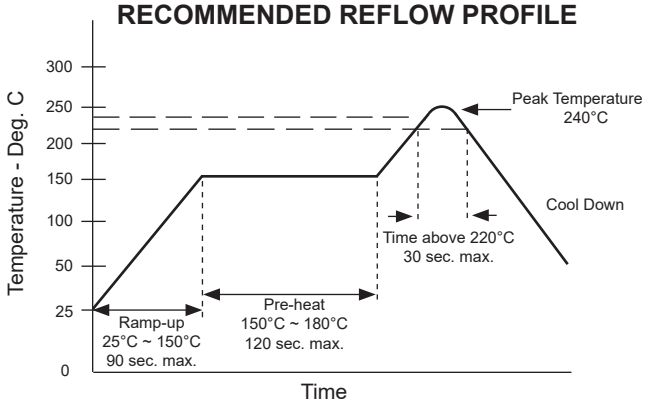


LAND PATTERN DIMENSIONS (mm)

EIA Size	A ± 0.1	B ± 0.1	C ± 0.2
0805	1.55	2.3	1.3
1206	1.9	3.5	1.5
1210	1.9	3.5	1.9



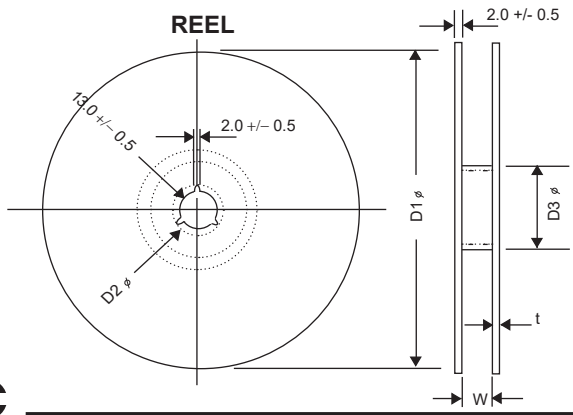
RECOMMENDED REFLOW PROFILE

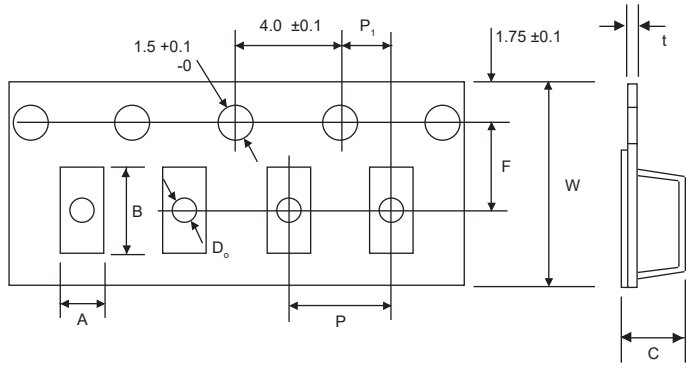


Note: These capacitors are sensitive to moisture. Capacitors should be stored in moisture barrier packaging at +25°C and a relative humidity of <70% (six months maximum). The components should be soldered within 72 hours of breaking the moisture barrier packaging seal and stored during those 72 hours at <+25°C and <70% relative humidity. If the parts are to be storage outside of the moisture barrier packaging the conditions should be <+20°C and relative humidity of less then 50%.

TAPE AND REEL DIMENSIONS (mm)

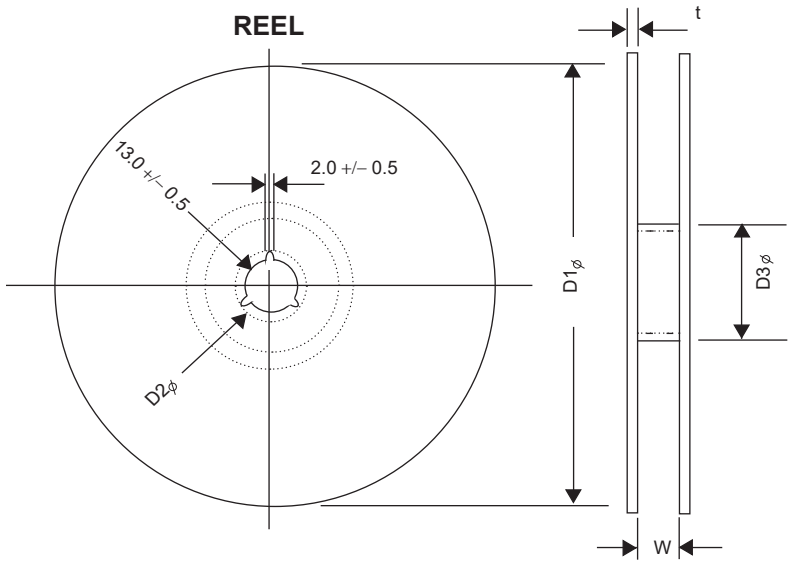
Case Code	A ± 0.1	B ± 0.1	C ± 0.2	t ± 0.05	W ± 0.3	F ± 0.05	P ± 0.1	D +0.2/-0
A3	1.55	2.3	1.3	0.25	8.0	3.5	4.0	1.0
B4, B5	1.9	3.5	1.5					
B6	1.9	3.5	1.9					
C4	2.8	3.5	1.9					





REEL DIMENSIONS (mm) AND QUANTITY

Case Code	D ± 2.0	D2 ± 0.6	D3 ± 1.0	W ± 1.0	t ± 1.0	Qty/Reel
J1	178	21.0	60.0	9.0	2.0	3,000
A3						
A4						
B4						
B5						
B6						2,000
C4						
C5						
C6						
C7						



EMBOSSED PLASTIC TAPE DIMENSIONS (mm)

Case Code	A ± 0.1	B ± 0.1	C ± 0.2	t ± 0.5	W ± 0.3	F ± 0.5	P ± 0.1	Dϕ ± 0.2
J1	1.00	1.85	1.1	0.20	8.0	3.5	4.0	1.0
A3	1.55	2.3	1.3	0.25				
A4			1.5					
B4	1.9	3.5	1.5					
B5			1.5					
B6			1.9					
C4	2.8	3.5	1.9					
C5			1.9					
C6			2.5					
C7			2.5