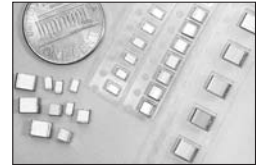


FEATURES

- 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	0.1 μ F	0.15 μ F ~ 0.068 μ F	1.0 μ F
Voltage Ratings	16Vdc		
Capacitance Tolerance	\pm 20% (M)		
Temperature Range	-40°C ~ +85°C		
Dissipation Factor (20°C)	1.5% @ 1KHz/25°C		
Insulation Resistance (20°C)	C \leq 0.33 μ F = 1000M Ω , C \geq 0.47 μ F = 300M Ω / μ F @ 10Vdc		
Dielectric Withstanding Voltage	175% of Rated Voltage (5 seconds) 150% of Rated Voltage (60 seconds)		
Temperature Characteristic	-20% ~ +5% Δ C 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
Resistance to Soldering Heat Reflow: 240°C Peak	Insulation Resistance	C \leq 0.33 μ F = 300M Ω Min., C \geq 0.47 μ F = 100M Ω / μ F
	Capacitance Change	Within +3% ~ -15% of Initial Value
	Dissipation Factor	1.65% Maximum ~ 1KHz
	Insulation Resistance	C \leq 0.33 μ F = 500M Ω Min., C \geq 0.47 μ F = 150M Ω / μ F
	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 \leq 0.33 μ F = 100M Ω Min., C \geq 0.47 μ F = 30M Ω / μ F
	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	

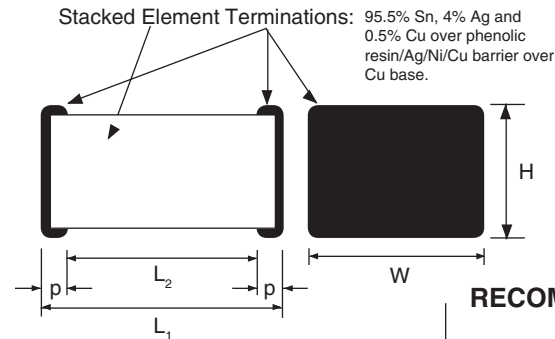
PART NUMBER SYSTEM

NSPU 104 M 16 TR A3 E

- Series
- Capacitance in pF, 1st two digits are significant, 3rd digit is no. of zeros
- Tolerance Code: M= \pm 20%
- Voltage
- Tape & Reel
- Size Code
- RoHS compliant

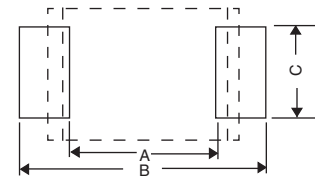
STANDARD VALUES AND CASE SIZES (mm)

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

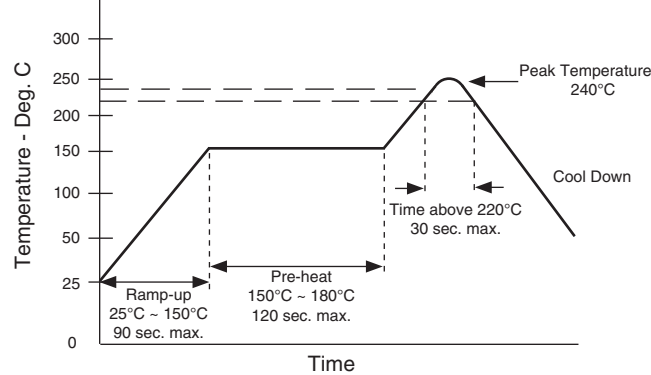


LAND PATTERN DIMENSIONS (mm)

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 than 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					

