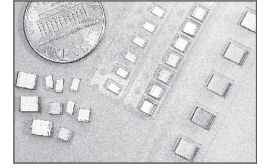


## FEATURES

- STACKED METALLIZED POLYESTER FILM CONSTRUCTION
- STANDARD EIA 1206, 1210, 1913 AND 2416 SIZES
- EXCELLENT MOISTURE RESISTANCE
- STABLE TEMPERATURE, FREQUENCY AND BIAS CHARACTERISTICS
- REFLOW SOLDERING APPLICABLE
- TAPE AND REEL PACKAGING



**NSWC IS  
RECOMMENDED  
FOR NEW DESIGNS**

**RoHS  
Compliant**  
includes all homogeneous materials  
\*See Part Number System for Details

SPECIFICATIONS	Case Sizes			
	1206	1210	1913	2416
Capacitance Range	1000pF ~ .056μF	5600pF ~ .1μF	.015μF ~ .22μF	0.12μF ~ 0.47μF
Voltage Ratings*	16Vdc(12Vrms), 50Vdc(40Vrms), 100Vdc(75Vrms)			
Capacitance Tolerance	±5% (J)			
Temperature Range	-55°C ~ +105°C			
Dissipation Factor (20°C)	1.0% max @ 1 KHz			
Insulation Resistance (20°C)	3 Gigohms Minimum			
Dielectric Withstanding Voltage	175% of Rated Voltage (5 Seconds) 150% of Rated Voltage (60 Seconds)			
Temperature Characteristic	±4% ΔC Maximum Over Temperature Range			
Dielectric Absorption	0.20 ~ 0.30% Typical			

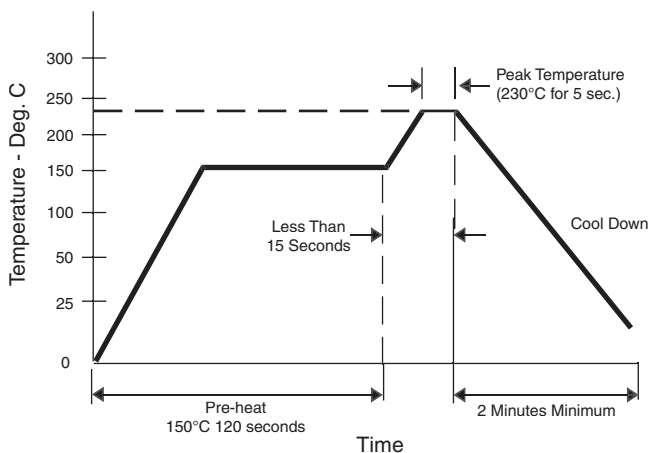
\* -AC Voltage Ratings (Vrms) From 60 hz to 10Khz. Contact NIC For Derating At Higher Frequencies.

## ENVIRONMENTAL CHARACTERISTICS

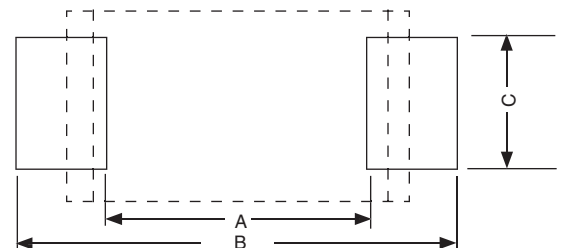
Life Test At +105°C: 1000 Hours at 125% of Rated Voltage	Capacitance Change	Within +1/-6% of Initial Value	
	Dissipation Factor	1.1% Maximum	
	Insulation Resistance	1 Gigohm Minimum	
Resistance to Soldering Heat: +260°C Peak for 5 Seconds After 90 Seconds at +155°C	Capacitance Change	Within ±5% of Initial Value	
	Dissipation Factor	1.1% Maximum	
	Insulation Resistance	1 Gigohm Minimum	
Humidity Load Life*: (1) 1000 Hours, +40°C (2) 500 Hours, +60°C	Capacitance Change	(1) +8/-5%	(2) ±10% of Initial Value
	Dissipation Factor	(1) 1.5% Max.	(2) 2.0% Max.
	Insulation Resistance	(1) 100 Megohm Minimum	(2) 10 Megohm Minimum
Solderability with 10% Wt Rosin-Methanol Flux		90% Minimum Coverage After 5 Second Dip into 235°C Solder Pot	

\* At 90 ~ 95% Relative Humidity and Rated Voltage

## RECOMMENDED REFLOW PROFILE



## RECOMMENDED LAND PATTERN



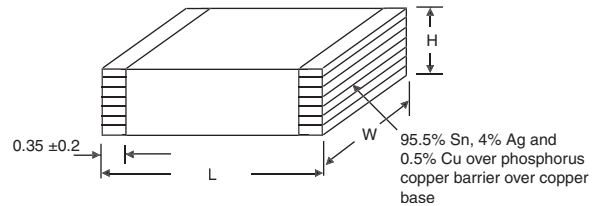
EIA Size	A	B	C
1206	2.2	3.8	1.4
1210	2.2	3.8	2.3
1913	2.6	6.6	3.0
2416	3.8	7.8	3.8

## STANDARD VALUES SIZE CODE

Cap $\mu$ F	Code	Voltage (Vdc)		
		16	50	100
.001	102			B2
.0012	122			B2
.0015	152			B2
.0018	182			B2
.0022	222			B2
.0027	272			B2
.0033	332		B1	B3
.0039	392		B1	B3
.0047	472		B1	B3
.0056	562		B1	C2
.0068	682		B1	C2
.0082	822		B2	C3
.01	103		B2	C3
.012	123	B2	C1	D1
.015	153	B2	C1	D1
.018	183	B2	C2	D1
.022	223	B2	C2	D1
.027	273	B2	C2	D1
.033	333	B3	C3	D1
.039	393	B3	C3	D1
.047	473	B3	C3	D2
.056	563	C2	D2	
.068	683	C2	D2	
.082	823	C3	D3	
.1	104	C3	D4	
.12	124	D1	E1	
.15	154	D2	E2	
.18	184	D2	E3	
.22	224	D3	E4	
.27	274	E1		
.33	334	E2		
.39	394	E3		
.47	474	E4		

## DIMENSIONS AND CASE CODES (mm)

Case Code	Length L $\pm$ 0.2	Width W	Height H $\pm$ 0.2	EIA
B1	3.2	1.6 $\pm$ 0.2	0.8	1206
B2	3.2	1.6 $\pm$ 0.2	1.0	1206
B3	3.2	1.6 $\pm$ 0.2	1.4	1206
C1	3.2	2.5 $\pm$ 0.2	1.0	1210
C2	3.2	2.5 $\pm$ 0.2	1.4	1210
C3	3.2	2.5 $\pm$ 0.2	2.0	1210
D1	4.8	3.3 $\pm$ 0.3	1.4	1913
D2	4.8	3.3 $\pm$ 0.3	2.0	1913
D3	4.8	3.3 $\pm$ 0.3	2.4	1913
D4	4.8	3.3 $\pm$ 0.3	2.8	1913
E1	6.0	4.1 $\pm$ 0.3	1.8	2416
E2	6.0	4.1 $\pm$ 0.3	2.0	2416
E3	6.0	4.1 $\pm$ 0.3	2.4	2416
E4	6.0	4.1 $\pm$ 0.3	2.8	2416



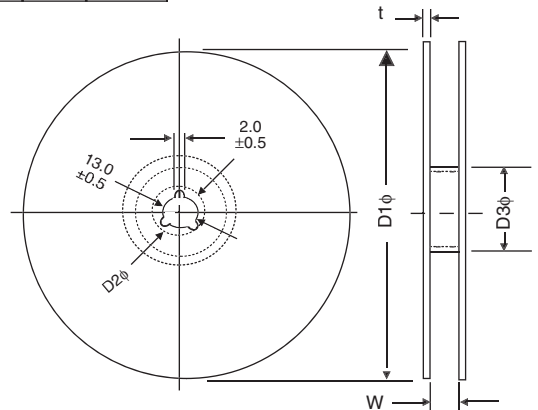
## REEL DIMENSIONS (mm)/QUANTITY PER REEL

Case Code	D1 $\pm$ 2.0	D2	D3 $\pm$ 2.0	W	t $\pm$ 0.5	Qty/Reel
B1	178	21.0 $\pm$ 0.8	60.0	9.5 $\pm$ 0.5	1.2	3,000
B2						3,000
B3						2,000
C1, C2, C3						2,000
D1, E1	330	21.0 $\pm$ 0.8	80.0	14.0 $\pm$ 1.5	2.0	3,000
D2, E2						3,000
D3, D4, E3, E4						2,000

## PART NUMBER SYSTEM

NSFC 103 J 50 TR B2 F

Series | Capacitance in pF, 1st two digits are significant, 3rd digit is no. of zeros | Voltage | Tolerance Code: J =  $\pm$ 5% | Tape & Reel | Size Code | RoHS Compliant



## TAPE DIMENSIONS (mm)

Case Code	A $\pm$ 0.1	B $\pm$ 0.1	C $\pm$ 0.2	t $\pm$ 0.5	W $\pm$ 0.3	F $\pm$ 0.5	P $\pm$ 0.1	D $\phi$ $\pm$ 0.2
B1	1.9	3.5	1.5	0.25	8.0	3.5	4.0	1.0
B2			1.5					
B3			1.9					
C1	2.8	3.5	1.9	0.25	8.0	3.5	4.0	1.0
C2			1.9					
C3			2.5					
D1	3.8	5.1	2.0	0.30	12.0	5.5	8.0	1.5
D2			2.6					
D3 & D4			3.4					
E1	4.6	6.3	2.7	0.30	12.0	5.5	8.0	-
E2			72.					
E3 & E4			3.5					

## EMBOSSED PLASTIC CARRIER

