

FEATURES

- STACKED METALLIZED POLYPHENYLENE SULFIDE (PPS) FILM
- STANDARD EIA 0603, 0805, 1206, 1210, 1913 AND 2416 SIZES
- WIDE TEMPERATURE RANGE UP TO +125°C (100pF ~ 0.1μF)
- HIGH HEAT AND MOISTURE RESISTANT
- VERY STABLE TEMPERATURE, FREQUENCY, VOLTAGE, BIAS AND DIELECTRIC ABSORPTION CHARACTERISTICS
- SUITABLE FOR REFLOW (100pF ~ 0.1μF) & FLOW (0.12μF ~ 0.22μF) SOLDERING
- TAPE AND REEL PACKAGING



SURFACE MOUNT

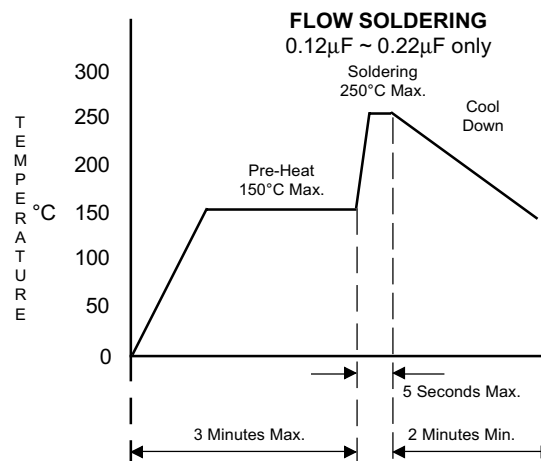
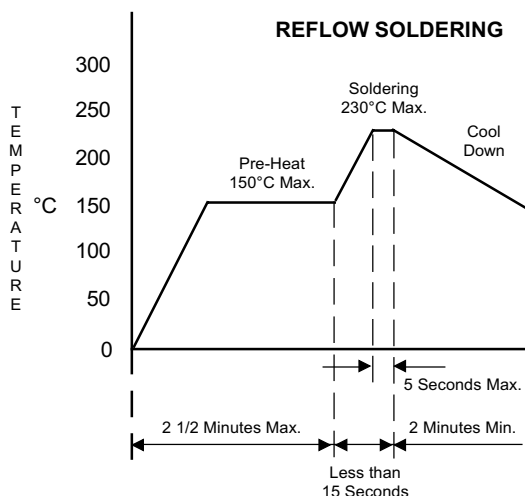
SPECIFICATIONS	Case Sizes					
	0603	0805	1206	1210	1913	2416
Capacitance Range	100pF ~ 0.0027μF	100pF ~ .01μF	3300pF ~ .047μF	.012μF ~ .1μF	.047μF ~ .1μF	0.12μF ~ 0.22μF
Voltage Ratings	16Vdc (12Vrms), 50Vdc (40Vrms)					
Capacitance Tolerance	±5% Std, ±2% Opt					
Temperature Range	-55°C ~ +125°C (0.12μF ~ 0.22μF voltage derated above 105°C)					
Dissipation Factor (20°C)	0.6% max @ 1 KHz					
Insulation Resistance (20°C)	3 Gigohms Minimum					
Dielectric Withstanding Voltage	150% of Rated Voltage 60 Seconds 175% of Rated Voltage for 5 Seconds (except 1913 and 2416 case sizes)					
Temperature Characteristic	±3% ΔC Maximum Over Temperature Range					
Dielectric Absorption	0.05 ~ 0.10% Typical					

ENVIRONMENTAL CHARACTERISTICS

Life Test At +125°C 1000 Hours at 125% of Rated Voltage	Capacitance Change	Within ±2% of Initial Value
	Dissipation Factor	0.66% Maximum
	Insulation Resistance	1 Gigohm Minimum
Resistance to Soldering Heat: +260°C Peak for 5 Seconds (0.047μF ~ 0.22μF)	Capacitance Change	Within ±3% of Initial Value
	Dissipation Factor	0.66% Maximum
	Insulation Resistance	1 Gigohm Minimum
Humidity Load Life (Note 1): (1) 1000 Hours, +40°C (2) 500 Hours, +60°C	Capacitance Change	Within ±2% of Initial Value
	Dissipation Factor	0.90% Maximum
	Insulation Resistance	(1) 1 Gigohm Minimum (2) 0.5 Gigohm Minimum
Solderability with 10% Wt Rosin-Methanol Flux	90% Minimum Coverage After 5 Second Dip into 235°C Solder Pot	

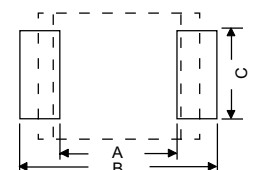
**NSHC IS
RECOMMENDED
FOR NEW DESIGNS**

RECOMMENDED SOLDERING PROFILES



RECOMMENDED LAND PATTERN (mm)

EIA Size	A	B	C
0603	0.6	2.0	0.7
0805	0.8	2.4	1.1
1206	1.8	3.6	1.4
1210	1.8	3.6	2.3
1913	2.6	6.6	3.0
2416	3.8	7.8	3.8



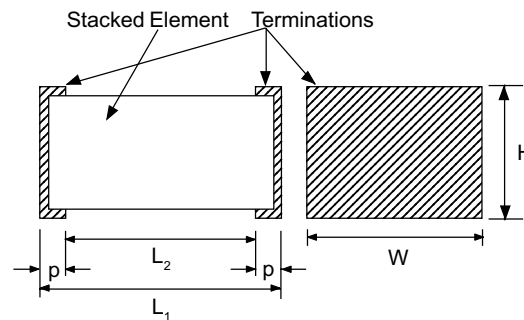
STANDARD PRODUCTS AND SIZE CODE

Cap.	Code	Working Voltage (Vdc)	
		16	50
100 pF	101	J1	A1
120	121	J1	A1
150	151	J1	A1
180	181	J1	A1
220	221	J1	A1
270	271	J1	A1
330	331	J1	A1
390	391	J1	A1
470	471	J1	A1
560	561	J1	A1
680	681	J1	A1
820	821	J1	A1
0.001 μ F	102	J1	A1
0.0012	122	J1	A1
0.0015	152	J1	A1
0.0018	182	J1	A1
0.0022	222	J1	A1
0.0027	272	J1	A1
0.0033	332	A1	B1
0.0039	392	A1	B1
0.0047	472	A1	B1
0.0056	562	A1	B1
0.0068	682	A1	B1
0.0082	822	A2	B2
0.01	103	A2	B2
0.012	123	B1	C1
0.015	153	B1	C1
0.018	183	B1	C2
0.022	223	B1	C2
0.027	273	B2	C2
0.033	333	B2	C3
0.039	393	B3	C3
0.047	473	B3	D1
0.056	563	C2	D2
0.068	683	C2	D2
0.082	823	C3	D3
0.1	104	C3	D4
0.12	124		E1
0.15	154		E3
0.18	184		E4
0.22	224		E5

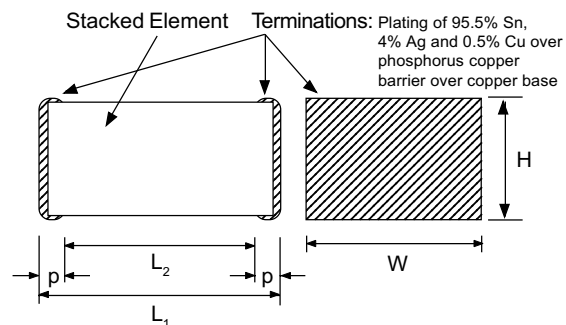
DIMENSION (mm) AND CASE CODE

Case Code	Length $L \pm 0.2$	Width W	Height $H \pm 0.2$	p	EIA Code
J1	1.6	0.8 ± 0.15	0.7 ± 0.15	0.35 ± 0.20	0603
A1	2.0	1.25 ± 0.2	0.9	0.45 ± 0.25	0805
A2			1.1		
B1	3.2	1.6 ± 0.2	0.9	0.65 ± 0.30	1206
B2			1.1		
B3			1.5		
C1	3.2	2.5 ± 0.2	1.1		1210
C2			1.5		
C3			2.1		
D1	4.8	3.3 ± 0.3	1.4	0.35 ± 0.20	1913
D2			2.0		
D3			2.4		
D4			2.8		
E1	6.0	4.1 ± 0.3	1.8		2416
E3			2.4		
E4			2.8		
E5			3.2		

OUTLINE DRAWING (J1 ~ C3 CASE SIZES)



OUTLINE DRAWING (D1 ~ E5 CASE SIZES)



PART NUMBERING SYSTEM

NSHC 103 J 16 TR A2 E
 | | | | | |
 Series Capacitance in pF, 1st two digits are significant, 3rd digit is no. of zeros
 |
 Tolerance Code: J= $\pm 5\%$, G= $\pm 2\%$
 |
 Voltage
 |
 Tape & Reel
 |
 Size Code
 |
 Lead Free (Optional)