NPIS Shielded Power Inductors

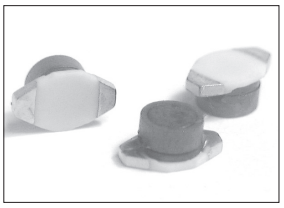
NPIS__R Series

FEATURES

- SHIELDED POWER INDUCTOR
- HIGH CURRENT, SMALL SIZE (UP TO 8 AMPS)
- SURFACE MOUNTABLE CONSTRUCTION
- HIGH INDUCTANCE (UP TO 1000µH)
- TAPED AND REELED FOR AUTOMATIC INSERTION
- FOR USE IN DC/DC CONVERTERS

RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details



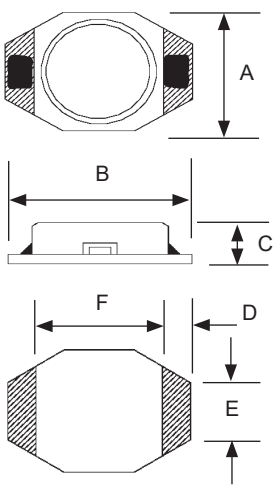
CHARACTERISTICS

Case Size	NPIS16R	NPIS31R	NPIS52R
Inductance Range	1 ~ 100µH	1.0 ~ 47µH	10 ~ 1000µH
Ambient Operating Temperature Range	-40°C ~ +105°C		
Maximum Component Temperature (Ambient + Self-Heating)	+135°C	+145°C	
Temperatrue Rise at Irms	+30°C max.	+40°C max.	
Inductance Change at Isat	-30% typical (NPIS16R), -10% typical (All Other Case Sizes)		
Inductance Tolerance	20% (M), ±30% (Y)		
Resistance to Solder Heat	260°C for 10 seconds		

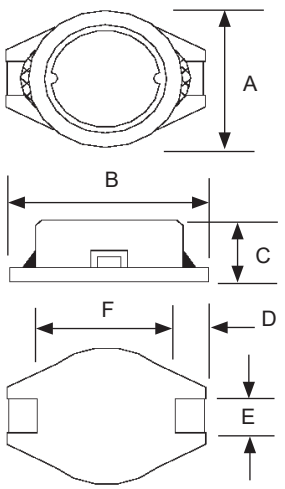
DIMENSIONS (mm)

Series	A	B	C	D	E	F	G	H	I
NPIS16R	4.45 Max	6.6 Max	2.92 Max	1.02 ± 0.2	1.27 ± 0.2	4.32 ± 0.3	4.06	3.56	1.4
NPIS31R	9.40 Max.	12.95 Max.	5.08 Max.	2.54 ± 0.5	2.54 ± 0.5	7.62 ± 0.5	7.37	2.79	2.92
NPIS52R	15.24 Max.	18.54 Max.	7.62 Max.	2.54 ± 0.5	2.54 ± 0.5	12.7 ± 0.5	12.45	2.79	2.92

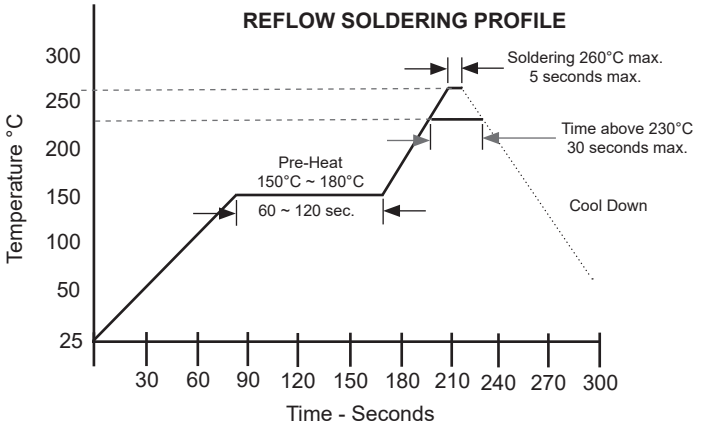
NPIS16R



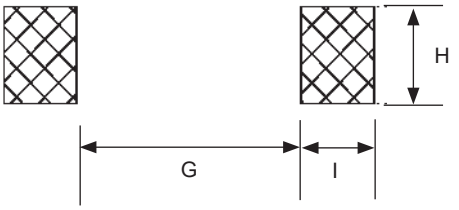
NPIS31R AND 52R



REFLOW SOLDERING PROFILE



LAND PATTERN



Part Number	STANDARD VALUES - CASE SIZE 16 (4.45 x 6.6 x 2.92mm)				
	Inductance Value (µH)	SRF (Typical) MHz	DC Resistance (Ω)	DC Current Isat/Irms (Amps)	Test Frequency
NPIS16R1R0MTRF	1.0 ± 20%	250	0.040	3.0	100KHz
NPIS16R1R5MTRF	1.5 ± 20%	125	0.045	2.3	
NPIS16R2R2MTRF	2.2 ± 20%	120	0.050	1.8	
NPIS16R3R3MTRF	3.3 ± 20%	120	0.055	1.6	
NPIS16R4R7MTRF	4.7 ± 20%	105	0.060	1.4	
NPIS16R6R8MTRF	6.8 ± 20%	50	0.065	1.2	
NPIS16R100MTRF	10 ± 20%	38	0.075	1.0	
NPIS16R150MTRF	15 ± 20%	33	0.090	0.80	
NPIS16R220MTRF	22 ± 20%	25	0.110	0.70	
NPIS16R330MTRF	33 ± 20%	20	0.190	0.60	
NPIS16R470MTRF	47 ± 20%	20	0.230	0.50	
NPIS16R680MTRF	68 ± 20%	15	0.290	0.40	
NPIS16R101MTRF	100 ± 20%	10	0.480	0.30	

Maximum +30°C temperature rise at Irms. Typical -30% inductance change at Isat.

PART NUMBER SYSTEM

NPIS 16 R 101 M TR F

- F — Termination Finish: F = RoHS Compliant (100%Sn)
- TR — Packaging: TR = Tape & Reel
- M — Inductance Tolerance Code: K=10%, L=15%M=±20%
- 101 — Inductance Code (µH): 1st two digits are significant, 3rd digit is multiplier for values from 10µH and up.
- R — Construction Code (see drawing for details)
- 16 — Size Code (see table for details)
- NPIS — Series

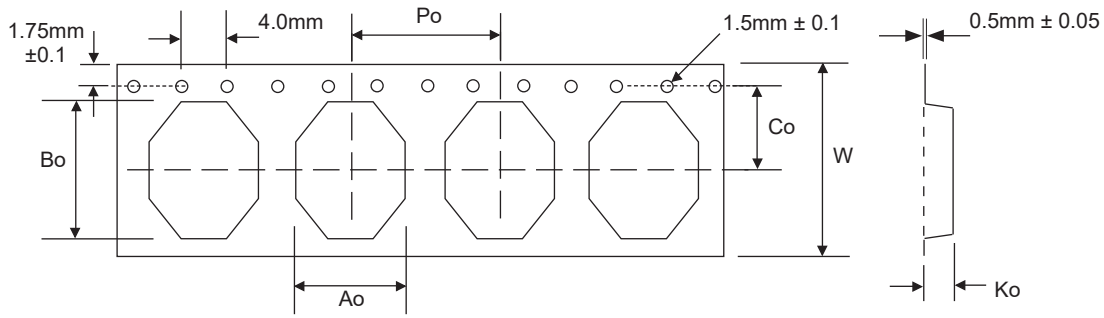
Part Number	STANDARD VALUES - CASE SIZE 31 (9.40 x 12.95 x 5.08mm)					
	Inductance Value (µH)	SRF (Typical) MHz	DC Resistance (Ω)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPIS31R1R0MTRF	1.0 ± 20%	140	0.021	5.0	5.6	100KHz
NPIS31R1R5MTRF	1.5 ± 20%	120	0.022	4.5	5.2	
NPIS31R2R2MTRF	2.2 ± 20%	80	0.032	3.8	5.0	
NPIS31R3R3MTRF	3.3 ± 20%	70	0.039	3.3	3.9	
NPIS31R4R7MTRF	4.7 ± 20%	40	0.054	2.7	3.2	
NPIS31R6R8MTRF	6.8 ± 20%	38	0.075	2.2	2.8	
NPIS31R100MTRF	10 ± 20%	35	0.101	2.0	2.4	
NPIS31R150MTRF	15 ± 20%	25	0.085	1.5	2.0	
NPIS31R220MTRF	22 ± 20%	19	0.207	1.3	1.6	
NPIS31R330MTRF	33 ± 20%	15	0.334	1.1	1.4	
NPIS31R470MTRF	47 ± 20%	13	0.472	0.80	1.0	

Maximum +40°C temperature rise at Irms. Typical -10% inductance change at Isat.

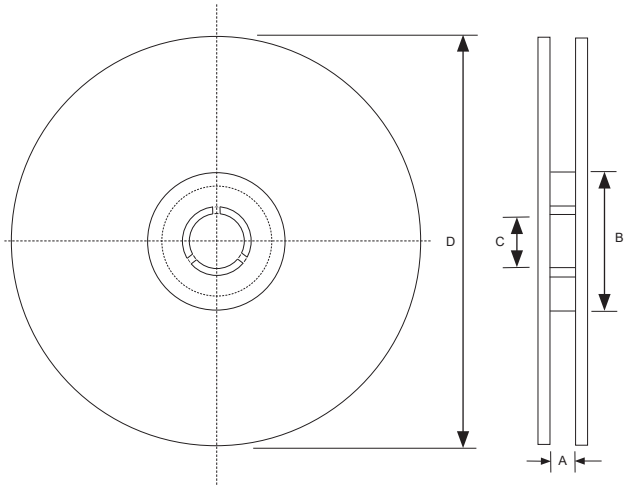
Part Number	STANDARD VALUES - CASE SIZE 52 (15.24 x 18.54 x 7.62mm)					
	Inductance Value (µH)	SRF (Typical) MHz	DC Resistance (Ω)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPIS52R100MTRF	10 ± 20%	30	0.040	3.9	8.0	100KHz
NPIS52R150MTRF	15 ± 20%	20	0.048	3.4	7.0	
NPIS52R220MTRF	22 ± 20%	18	0.059	3.1	6.0	
NPIS52R330MTRF	33 ± 20%	14	0.075	2.8	5.0	
NPIS52R470MTRF	47 ± 20%	10	0.097	2.4	4.0	
NPIS52R680MTRF	68 ± 20%	9.0	0.138	2.0	3.0	
NPIS52R101MTRF	100 ± 20%	7.0	0.207	1.7	2.4	
NPIS52R151MTRF	150 ± 20%	6.0	0.293	1.3	2.1	
NPIS52R221MTRF	220 ± +0%	5.0	0.470	1.1	1.9	
NPIS52R331MTRF	330 ± 20%	4.0	0.780	0.86	1.1	
NPIS52R471MTRF	470 ± 20%	3.0	1.08	0.73	1.1	
NPIS52R681MTRF	680 ± 20%	2.5	1.40	0.64	0.96	
NPIS52R102MTRF	1000 ±20%	2.0	2.01	0.53	0.80	

Maximum +40°C temperature rise at Irms. Typical -10% inductance change at Isat.

Case Size	TAPE DIMENSIONS					
	Ao	Bo	Ko	Co	W	Po
NPIS16R						
NPIS31R						
NPIS52R						



Tape Width	REEL DIMENSIONS (mm)			
	A(mm)	B(mm)	C(mm)	D(mm)
16mm				
24mm				
32mm				



Size	REEL QUANTITY PER CASE SIZE		
	NPIS16R	NPIS31R	NPIS52R
Quantity per reel			
Tape Width	16mm	24mm	32mm