NPI Power Inductors

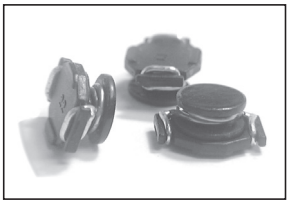
NPI__P Series

FEATURES

- ULTRA HIGH CURRENT (UP TO 30 AMPS)
- SURFACE MOUNTABLE CONSTRUCTION
- INDUCTANCE VALUES UP TO 15µH)
- TAPED AND REELED FOR AUTOMATIC INSERTION
- FOR USE IN DC/DC CONVERTERS, STEPDOWN CONVERTERS

RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details



CHARACTERISTICS

Case Size	NPI31P	NPI52P
Inductance Range	0.33 ~ 4.7µH	0.78 ~ 15µH
Ambient Operating Temperature Range	-40°C ~ +85°C	
Maximum Component Temperature (Ambient + Self-Heating)	+125°C	
Temperature Rise at Irms	40°C max.	
Inductance Change at Isat	-10% typical	
Inductance Tolerance	20% (M)	
Resistance to Solder Heat	260°C for 10 seconds	

PART NUMBER SYSTEM

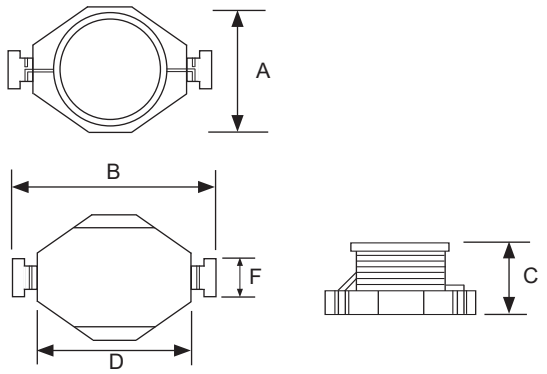
NPI 31 P 4R7 M TR F

- F — Termination Finish: F = RoHS Compliant (100%Sn)
- TR — Packaging: TR = Tape & Reel
- M — Inductance Tolerance Code: M=±20%
- 4R7 — Inductance Code (µH): 1st two digits are significant, R is decimal point, 3rd digit is multiplier for values from 10µH and up.
- P — Construction Code (see drawing for details)
- 31 — Size Code (see table for details)
- NPI — Series

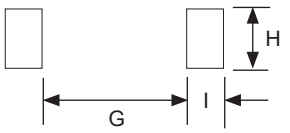
DIMENSIONS (mm)

Series	A	B	C	G (Ref)	H (Ref)	I (Ref)
NPI31P	9.9*	13.2*	6.4*	8.6*	4.1*	1.6*
NPI52P	15.2*	18.5*	12.0	14.0*	6.4*	1.9*

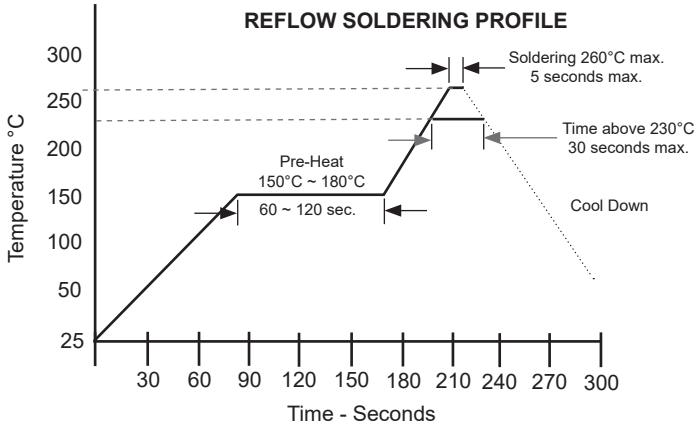
CONSTRUCTION



LAND PATTERN



REFLOW SOLDERING PROFILE



*Specifications reflect recent product changes. For more information refer to PCN announcement [Link]

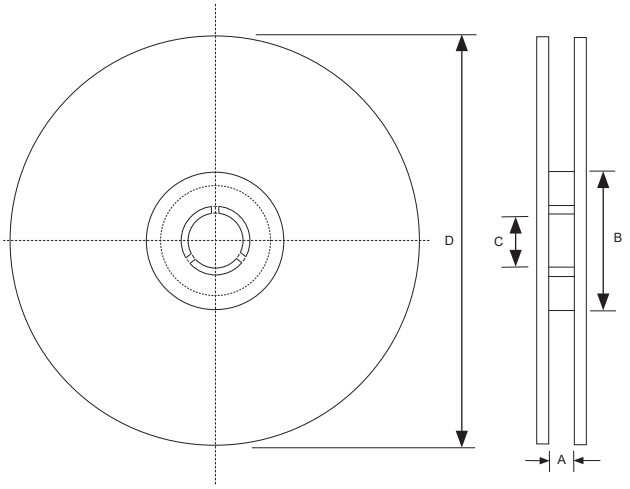
Part Number	STANDARD VALUES - CASE SIZE 31 (13.2 x 9.9 x 6.4mm*)					
	Inductance Value (µH)	SRF (Typical) MHz	DC Resistance (Ω)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPI31PR33MTRF	0.33 ± 20%	300	0.002	16	20	100KHz
NPI31PR68MTRF	0.68 ± 20%	200	0.005	12	13	
NPI31P1R0MTRF	1.0 ± 20%	100	0.012	10	11	
NPI31P1R5MTRF	1.5 ± 20%	90	0.008	9.0	9.0	
NPI31P2R2MTRF	2.2 ± 20%	90	0.011	7.4	7.8	
NPI31P2R7MTRF	2.7 ± 20%	65	0.012	6.6	7.0	
NPI31P3R3MTRF	3.3 ± 20%	65	0.014	5.9	6.4	
NPI31P4R7MTRF	4.7 ± 20%	45	0.018	4.8	5.4	

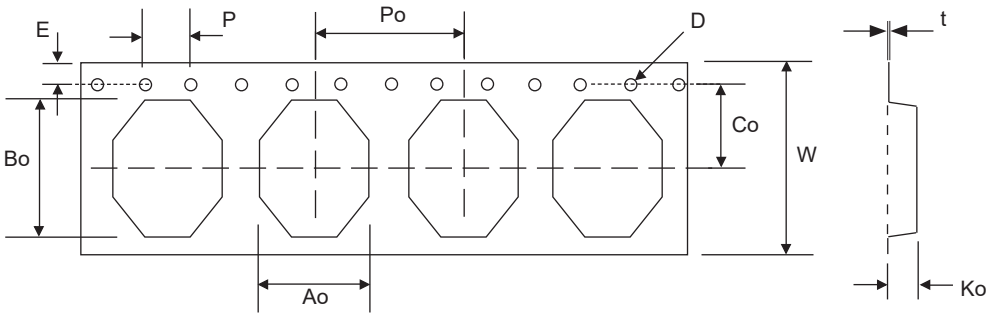
Maximum +40°C temperature rise at Irms. Typical -10% inductance change at Isat.

Part Number	STANDARD VALUES - CASE SIZE 52 (18.5 x 15.2 x 12.00mm*)					
	Inductance Value (µH)	SRF (Typical) MHz	DC Resistance (Ω)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPI52PR78MTRF	0.78 ± 20%	156	0.0026	15	30	100KHz
NPI52P1R5MTRF	1.5 ± 20%	100	0.0040	15	25	
NPI52P2R2MTRF	2.2 ± 20%	60	0.0100	12	20	
NPI52P3R3MTRF	3.3 ± 20%	55	0.0140	10	17	
NPI52P3R9MTRF	3.9 ± 20%	35	0.0170	9.0	15	
NPI52P4R7MTRF	4.7 ± 20%	35	0.0260	8.4	13	
NPI52P6R0MTRF	6.0 ± 20%	35	0.0320	7.5	12	
NPI52P7R8MTRF	7.8 ± 20%	28	0.0180	7.5	11	
NPI52P100MTRF	10 ± 20%	28	0.0260	6.0	10	
NPI52P150MTRF	15 ± 20%	20	0.0320	4.4	8.0	

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

Tape Width	REEL DIMENSIONS (mm)			
	A(mm)	B(mm)	C(mm)	D(mm)
24mm	24.5±0.1	100 ± 1.0	13.0 ± 0.5	330
32mm	32.5±0.1			



Size	REEL QUANTITY PER CASE SIZE	
	NPI31P	NPI52P
Quantity per reel	600	250
Tape Width	24mm	32mm

Case Size	TAPING DIMENSIONS (mm)									
	Ao ± 0.1	Bo ± 0.1	Co ± 0.1	D + 0.1/-0	E + 0.1/-0	Ko ± 0.1	P ± 0.1	Po ± 0.1	W ± 0.3	t ± 0.05
NPI31P	10.0	13.5	11.5	1.5	1.75	5.6	4.0	16.0	24	0.4
NPI52P	16.5	23.0	14.2			7.5		20.0	32