NPI Power Inductors

NPI__W Series

FEATURES

- HIGH CURRENT, SMALL SIZE (UP TO 8.6 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	NPI16W	NPI31W	NPI34W	NPI52W
Inductance Range	1 ~ 1000µH	1.0 ~ 1000µH	10 ~ 1000µH	1 ~ 1000µH
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			

DIMENSIONS (mm)

Series	A	B	C	D	E	F	G (Ref)	H (Ref)	I (Ref)
NPI16W	4.45 Max	6.60 Max	2.92 Max	1.02 ± 0.2	1.27 ± 0.2	4.32 ± 0.3	4.06	3.56	1.4
NPI31W	9.30 ± 0.2	12.80 ± 0.2	5.00 ± 0.3	2.40 ± 0.2	2.50 ± 0.2	7.60 ± 0.3	7.3	2.8	3
NPI34W	9.30 ± 0.2	12.80 ± 0.2	11.0 ± 0.5	2.40 ± 0.2	2.50 ± 0.2	7.60 ± 0.3	7.3	2.8	3
NPI52W	15.0 ± 0.3	18.40 ± 0.3	7.00 ± 0.5	2.40 ± 0.2	2.20 ± 0.2	13.30 ± 0.3	12.7	2.8	3

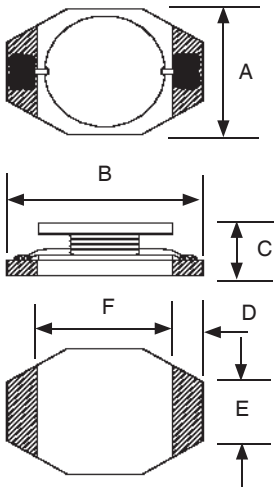
PART NUMBER SYSTEM

NPI 31 W 4R7 M TR F

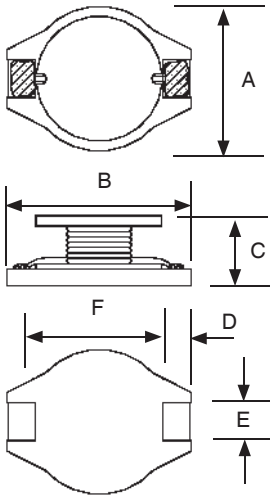
- F — RoHS Compliant
- TR — Packaging: TR = Tape & Reel
- M — Inductance Tolerance Code: M=±20%
- 4R7 — Inductance Code (µH): 1st two digits are significant, 3rd digit is multiplier for values from 10µH and up.
- W — Construction Code (see drawing for details)
- 31 — Size Code (see table for details)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

CONSTRUCTION

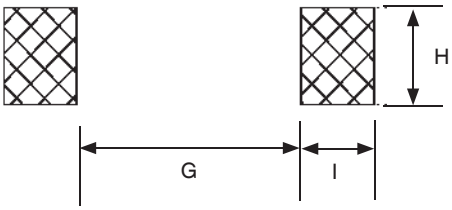
NPI16W



NPI30W, 31W, 34W AND 52W



LAND PATTERN



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

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 Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPI16W1R0MTRF	1.0 ± 20%	130	0.05	2.9	2.9	
NPI16W1R5MTRF	1.5 ± 20%	115	0.05	2.8	2.6	
NPI16W2R2MTRF	2.2 ± 20%	90	0.07	2.4	2.3	
NPI16W3R3MTRF	3.3 ± 20%	70	0.08	2.0	2.0	
NPI16W4R7MTRF	4.7 ± 20%	50	0.09	1.5	1.5	
NPI16W6R8MTRF	6.8 ± 20%	45	0.13	1.4	1.2	
NPI16W100MTRF	10 ± 20%	35	0.16	1.1	1.1	
NPI16W150MTRF	15 ± 20%	30	0.23	1.0	0.90	
NPI16W220MTRF	22 ± 20%	20	0.37	0.80	0.70	
NPI16W330MTRF	33 ± 20%	15	0.51	0.60	0.58	100KHz
NPI16W470MTRF	47 ± 20%	14	0.64	0.50	0.50	
NPI16W680MTRF	68 ± 20%	11	0.86	0.40	0.50	
NPI16W101MTRF	100 ± 20%	9.0	1.27	0.30	0.31	
NPI16W151MTRF	150 ± 20%	6.0	2.00	0.25	0.27	
NPI16W221MTRF	220 ± 20%	5.5	3.11	0.20	0.22	
NPI16W331MTRF	330 ± 20%	5.0	3.80	0.16	0.18	
NPI16W471MTRF	470 ± 20%	4.0	6.78	0.15	0.16	
NPI16W681MTRF	680 ± 20%	3.0	9.20	0.12	0.14	
NPI16W102MTRF	1000 ± 20%	2.0	13.8	0.07	0.10	

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

Part Number	STANDARD VALUES - CASE SIZE 31 (10.0 x 12.7 x 5.0mm)					
	Inductance Value (µH)	SRF (Typical) MHz	DC Resistance (Ω)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPI31W1R0MTRF	1.0 ± 20%	150	0.009	6.8	9.0	
NPI31W1R5MTRF	1.5 ± 20%	100	0.010	6.4	8.0	
NPI31W2R2MTRF	2.2 ± 20%	85	0.012	6.1	7.0	
NPI31W3R3MTRF	3.3 ± 20%	60	0.015	5.4	5.8	
NPI31W4R7MTRF	4.7 ± 20%	45	0.018	4.8	5.2	
NPI31W6R8MTRF	6.8 ± 20%	35	0.027	4.4	4.3	
NPI31W100MTRF	10 ± 20%	25	0.038	3.9	3.4	
NPI31W150MTRF	15 ± 20%	20	0.046	3.1	3.0	
NPI31W220MTRF	22 ± 20%	18	0.085	2.7	2.5	
NPI31W330MTRF	33 ± 20%	14	0.10	2.1	2.0	100KHz
NPI31W470MTRF	47 ± 20%	11	0.14	1.8	1.8	
NPI31W680MTRF	68 ± 20%	10	0.20	1.5	1.4	
NPI31W101MTRF	100 ± 20%	7.0	0.28	1.3	1.1	
NPI31W151MTRF	150 ± 20%	6.5	0.40	1.0	0.9	
NPI31W221MTRF	220 ± 20%	5.0	0.61	0.8	0.8	
NPI31W331MTRF	330 ± 20%	4.0	1.02	0.6	0.6	
NPI31W471MTRF	470 ± 20%	3.0	1.27	0.5	0.5	
NPI31W681MTRF	680 ± 20%	2.5	2.02	0.4	0.4	
NPI31W102MTRF	1000 ± 20%	2.0	3.00	0.3	0.3	

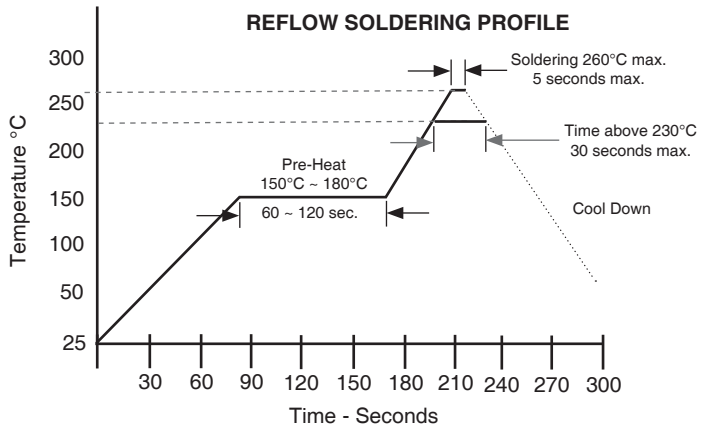
Maximum +40°C temperature rise at Irms. Typical -10% inductance change at Isat.

Part Number	STANDARD VALUES - CASE SIZE 34 (10.0 x 12.7 x 11mm)					
	Inductance Value (µH)	SRF (Typical) MHz	DC Resistance (Ω)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPI34W100MTRF	10 ± 20%	23	0.040	3.50	7.0	100KHz
NPI34W150MTRF	15 ± 20%	14	0.050	3.20	5.8	
NPI34W220MTRF	22 ± 20%	8.5	0.066	2.90	4.8	
NPI34W330MTRF	33 ± 20%	7.0	0.080	2.35	3.8	
NPI34W470MTRF	47 ± 20%	6.5	0.110	2.10	3.4	
NPI34W680MTRF	68 ± 20%	4.5	0.170	1.90	2.7	
NPI34W101MTRF	100 ± 20%	4.0	0.220	1.55	2.2	
NPI34W151MTRF	150 ± 20%	3.0	0.340	1.35	1.9	
NPI34W221MTRF	220 ± 20%	2.5	0.440	1.00	1.5	
NPI34W331MTRF	330 ± 20%	2.3	0.700	0.90	1.3	
NPI34W471MTRF	470 ± 20%	2.0	0.950	0.75	1.0	
NPI34W681MTRF	680 ± 20%	1.5	1.20	0.55	0.9	
NPI34W102MTRF	1000 ± 20%	1.3	2.00	0.50	0.7	

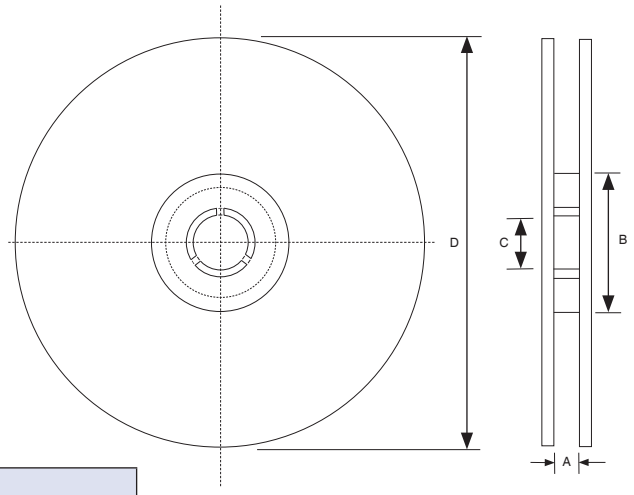
Maximum +40°C temperature rise at Irms. Typical -10% inductance change at Isat.

Part Number	STANDARD VALUES - CASE SIZE 52 (15.0 x 18.4 x 7.0mm)					
	Inductance Value (µH)	SRF (Typical) MHz	DC Resistance (Ω)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPI52W1R0MTRF	1.0 ± 20%	140	0.009	8.6	20	100KHz
NPI52W1R5MTRF	1.5 ± 20%	110	0.012	7.5	18	
NPI52W2R2MTRF	2.2 ± 20%	75	0.014	7.1	16	
NPI52W3R3MTRF	3.3 ± 20%	70	0.018	6.2	14	
NPI52W4R7MTRF	4.7 ± 20%	55	0.019	5.8	13	
NPI52W5R6MTRF	5.6 ± 20%	45	0.020	5.3	12	
NPI52W8R2MTRF	8.2 ± 20%	23	0.025	4.7	11	
NPI52W100MTRF	10 ± 20%	21	0.031	4.3	10	
NPI52W150MTRF	15 ± 20%	16	0.036	4.0	8.0	
NPI52W220MTRF	22 ± 20%	13	0.047	3.5	7.0	
NPI52W330MTRF	33 ± 20%	11	0.066	3.0	5.5	
NPI52W470MTRF	47 ± 20%	9.0	0.086	2.6	4.5	
NPI52W680MTRF	68 ± 20%	6.5	0.13	2.3	3.5	
NPI52W101MTRF	100 ± 20%	5.7	0.19	1.8	3.0	
NPI52W151MTRF	150 ± 20%	4.5	0.25	1.5	2.6	
NPI52W221MTRF	220 ± 20%	3.7	0.38	1.2	2.4	
NPI52W331MTRF	330 ± 20%	3.0	0.56	1.0	1.9	
NPI52W471MTRF	470 ± 20%	2.7	0.85	0.82	1.4	
NPI52W681MTRF	680 ± 20%	2.2	1.10	0.72	1.2	
NPI52W102MTRF	1000 ± 20%	2.0	1.80	0.56	1.0	
NPI52W472MTRF	4700 ± 20%	-	7.50	0.25	0.35	

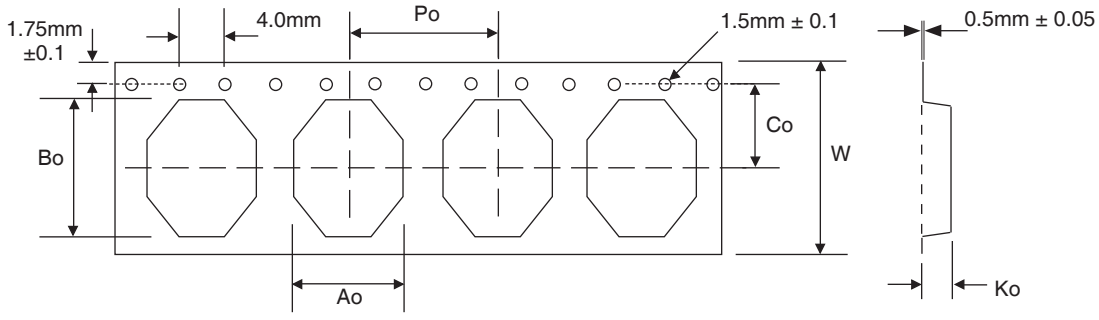
Maximum +40°C temperature rise at Irms. Typcial -10% inductance change at Isat.



Case Size	TAPING DIMENSIONS (mm)					
	Ao	Bo	Co	Ko	W	Po
NPI16W	4.60	6.70	4.25	3.20	12.0	8.0
NPI31W	10.00	13.50	11.50	5.60	24.0	12.0
NPI34W	10.00	13.50	11.50	11.6	24.0	20.0
NPI52W	15.40	18.70	14.25	7.60	32.0	20.0



Tape Width	REEL DIMENSIONS (mm)			
	A(mm)	B(mm)	C(mm)	D(mm)
16mm	16.5±0.1	100±1	13±0.5	330
24mm	24.5±0.1			
32mm	32.5±0.1			



Size	REEL QUANTITY PER CASE SIZE				
	NPI16W	NPI22W	NPI31W	NPI34W	NPI52W
Quantity per reel	2500	1000	500	225	250
Tape Width	16mm	24mm	24mm	32mm	32mm