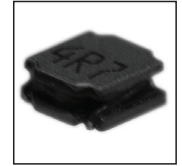


FEATURES

- SHIELDED POWER INDUCTOR
- HIGH CURRENT (UP TO 7.8 AMPS)
- 30% LOWER DCR THAN NPIS_LS SERIES
- ROBUST CONSTRUCTION
- TAPED AND REELED FOR AUTOMATIC INSERTION
- FOR USE IN DC/DC CONVERTERS

RoHS Compliant
includes all homogeneous materials



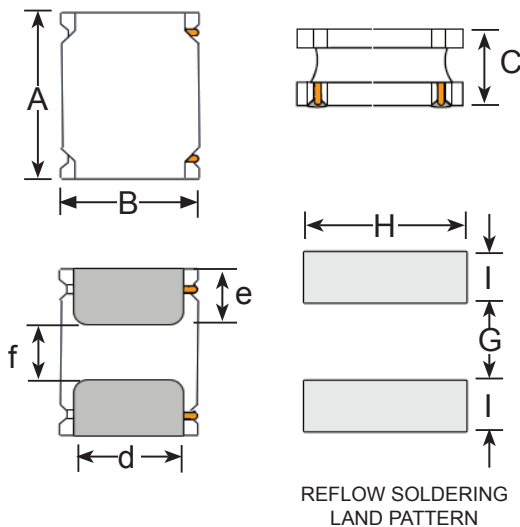
*See Part Number System for Details

CHARACTERISTICS

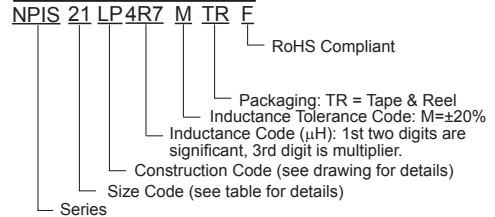
Case Size	NPIS26LP	NPIS22LP	NPIS20LP	NPIS21LP	NPIS32LP
Inductance Range	0.16 ~ 10 μ H	0.16 ~ 33 μ H	0.24 ~ 22 μ H	0.16 ~ 22 μ H	1.0 ~ 22 μ H
Case Size	NPIS35LP	NPIS41LP	NPIS48LP	NPIS83LP	
Inductance Range	0.47 ~ 22 μ H	0.47 ~ 10 μ H	1.0 ~ 330 μ H	1.0 ~ 47 μ H	
Ambient Operating Temperature Range	-40°C ~ +125°C (including self-heating)				
Temperature Rise at Irms	Maximum +40°C Temperature Rise				
Inductance Change at Isat	Maximum -30% Inductance Drop From Initial Measured Value				
Inductance Tolerance	\pm 20% (M)				
Resistance to Solder Heat	+260°C for 10 seconds				

DIMENSIONS (mm)

Series	A	B	C	d	e	f	G	I	H
NPIS26LP	2.0 \pm 0.2	1.6 \pm 0.2	1.0 Max.	1.2 \pm 0.2	0.60 \pm 0.2	0.80 \pm 0.2	0.7	0.7	1.7
NPIS22LP	2.0 \pm 0.1	2.0 \pm 0.1	1.2 Max.	1.5 \pm 0.2	0.60 \pm 0.2	0.80 \pm 0.2	0.65	0.7	2
NPIS20LP	2.5 \pm 0.2	2.0 \pm 0.2	1.0 Max.	1.5 \pm 0.2	0.80 \pm 0.2	0.80 \pm 0.2	0.8	0.85	2
NPIS21LP	2.5 \pm 0.2	2.0 \pm 0.2	1.2 Max.	1.5 \pm 0.2	0.80 \pm 0.2	0.80 \pm 0.2	0.8	0.85	2
NPIS32LP	3.0 \pm 0.2	3.0 \pm 0.2	1.2 Max.	2.5 \pm 0.2	0.75 \pm 0.2	1.5 \pm 0.2	1.5	0.8	2.7
NPIS35LP	3.0 \pm 0.2	3.0 \pm 0.2	1.5 Max.	2.5 \pm 0.2	0.75 \pm 0.2	1.5 \pm 0.2	1.5	0.8	2.7
NPIS41LP	4.0 \pm 0.2	4.0 \pm 0.2	1.2 Max.	3.3 \pm 0.2	0.95 \pm 0.2	2.1 \pm 0.2	1.9	1.1	3.7
NPIS48LP	4.0 \pm 0.2	4.0 \pm 0.2	1.8 Max.	3.3 \pm 0.2	0.95 \pm 0.2	2.1 \pm 0.2	1.9	1.1	3.7
NPIS83LP	8.0 \pm 0.3	8.0 \pm 0.3	3.0 Max.	6.3 \pm 0.3	2.00 \pm 0.3	4.0 \pm 0.3	3.8	2.2	7.5



PART NUMBER SYSTEM



NPIS26LP Size

Series	Standard Values - Case Size 26 (2.0×1.6×1.0mm)					
	Inductance (μH)	Test Conditions	DCR (Ω)		Isat (Amps)	Irms (Amps)
			Max.	Typ.	Max.	Max.
NPIS26LPR16MTRF	0.16 ± 20%	1MHz, 1V	0.031	0.026	4.3	3.2
NPIS26LPR24MTRF	0.24 ± 20%		0.040	0.033	3.7	2.9
NPIS26LPR33MTRF	0.33 ± 20%		0.040	0.033	2.5	2.9
NPIS26LPR47MTRF	0.47 ± 20%		0.059	0.049	2.3	2.35
NPIS26LPR68MTRF	0.68 ± 20%		0.076	0.063	1.95	2.05
NPIS26LP1R0MTRF	1.0 ± 20%		0.114	0.095	1.65	1.45
NPIS26LP1R5MTRF	1.5 ± 20%		0.174	0.145	1.35	1.25
NPIS26LP2R2MTRF	2.2 ± 20%		0.264	0.22	1.20	1.10
NPIS26LP3R3MTRF	3.3 ± 20%		0.335	0.279	0.90	0.88
NPIS26LP4R7MTRF	4.7 ± 20%		0.479	0.399	0.70	0.74
NPIS26LP6R8MTRF	6.8 ± 20%		0.816	0.68	0.60	0.52
NPIS26LP100MTRF	10 ± 20%		1.02	0.85	0.50	0.45

Maximum +40°C temperature rise at Irms. Maximum -30% inductance drop from initial measured value at Isat.

NPIS22LP Size

Series	Standard Values - Case Size 22 (2.0×2.0×1.2mm)					
	Inductance (μH)	Test Conditions	DCR (Ω)		Isat (Amps)	Irms (Amps)
			Max.	Typ.	Max.	Max.
NPIS22LPR16MTRF	0.16 ± 20%	1MHz, 1V	0.031	0.026	5.2	2.5
NPIS22LPR24MTRF	0.24 ± 20%		0.042	0.035	4.7	2.2
NPIS22LPR33MTRF	0.33 ± 20%		0.042	0.035	3.5	2.2
NPIS22LPR47MTRF	0.47 ± 20%		0.05	0.042	3.55	2
NPIS22LPR68MTRF	0.68 ± 20%		0.06	0.05	2.95	1.8
NPIS22LP1R0MTRF	1 ± 20%		0.088	0.073	2.7	1.5
NPIS22LP1R5MTRF	1.5 ± 20%		0.112	0.093	2.0	1.3
NPIS22LP2R2MTRF	2.2 ± 20%		0.127	0.106	1.4	1.2
NPIS22LP3R3MTRF	3.3 ± 20%		0.276	0.23	1.2	0.85
NPIS22LP4R7MTRF	4.7 ± 20%		0.294	0.245	0.97	0.82
NPIS22LP6R8MTRF	6.8 ± 20%		0.479	0.399	0.82	0.64
NPIS22LP100MTRF	10 ± 20%		0.785	0.654	0.72	0.49
NPIS22LP150MTRF	15 ± 20%		1.368	1.14	0.55	0.38
NPIS22LP220MTRF	22 ± 20%		1.68	1.4	0.40	0.35
NPIS22LP330MTRF	33 ± 20%		2.16	1.8	0.35	0.30

Maximum +40°C temperature rise at Irms. Maximum -30% inductance drop from initial measured value at Isat.



NPIS20LP Size

Series	Standard Values - Case Size 20 (2.5×2.0×1.0mm)						
	Inductance (μH)	Test Conditions	DCR (Ω)		Isat (Amps)	Irms (Amps)	SRF (MHz)
			Max.	Typ.	Max.	Max.	Min.
NPIS20LPR24MTRF	0.24 ± 20%	1MHz, 1V	0.034	0.028	3.6	2.75	360
NPIS20LPR33MTRF	0.33 ± 20%		0.043	0.036	3.8	2.4	270
NPIS20LPR47MTRF	0.47 ± 20%		0.044	0.037	2.4	2.4	170
NPIS20LPR68MTRF	0.68 ± 20%		0.061	0.051	2.75	2.1	110
NPIS20LP1R0MTRF	1.0 ± 20%		0.08	0.067	2.05	1.8	84
NPIS20LP1R5MTRF	1.5 ± 20%		0.108	0.09	1.7	1.55	60
NPIS20LP2R2MTRF	2.2 ± 20%		0.137	0.114	1.55	1.4	56
NPIS20LP3R3MTRF	3.3 ± 20%		0.228	0.17	1.1	1.1	39
NPIS20LP4R7MTRF	4.7 ± 20%		0.323	0.269	1.0	0.91	28
NPIS20LP6R8MTRF	6.8 ± 20%		0.451	0.376	0.82	0.76	25
NPIS20LP100MTRF	10 ± 20%		0.584	0.487	0.65	0.67	20
NPIS20LP150MTRF	15 ± 20%		0.954	0.795	0.55	0.50	19
NPIS20LP220MTRF	22 ± 20%		1.548	1.29	0.45	0.40	15

Maximum +40°C temperature rise at Irms. Maximum -30% inductance drop from initial measured value at Isat.

NPIS21LP Size

Series	Standard Values - Case Size 21 (2.5×2.0×1.2mm)						
	Inductance (μH)	Test Conditions	DCR (Ω)		Isat (Amps)	Irms (Amps)	SRF (MHz)
			Max.	Typ.	Max.	Max.	Min.
NPIS21LPR16MTRF	0.16 ± 20%	1MHz, 1V	0.022	0.018	6.5	4.05	380
NPIS21LPR24MTRF	0.24 ± 20%		0.022	0.018	4.0	4.05	260
NPIS21LPR33MTRF	0.33 ± 20%		0.029	0.024	4.0	3.35	230
NPIS21LPR47MTRF	0.47 ± 20%		0.036	0.03	3.7	3.0	170
NPIS21LPR68MTRF	0.68 ± 20%		0.061	0.051	3.0	2.1	150
NPIS21LP1R0MTRF	1.0 ± 20%		0.044	0.037	1.7	2.2	85
NPIS21LP1R2MTRF	1.2 ± 20%		0.078	0.065	2.2	1.95	75
NPIS21LP1R5MTRF	1.5 ± 20%		0.078	0.065	2.0	1.95	75
NPIS21LP2R2MTRF	2.2 ± 20%		0.096	0.08	1.8	1.8	55
NPIS21LP3R3MTRF	3.3 ± 20%		0.144	0.12	1.15	1.4	43
NPIS21LP4R7MTRF	4.7 ± 20%		0.21	0.175	1.1	1.12	36
NPIS21LP6R8MTRF	6.8 ± 20%		0.36	0.3	0.80	0.95	25
NPIS21LP100MTRF	10 ± 20%		0.522	0.435	0.70	0.79	21
NPIS21LP150MTRF	15 ± 20%		1.0	0.83	0.65	0.57	18
NPIS21LP180MTRF	18 ± 20%		1.0	0.83	0.65	0.63	14
NPIS21LP220MTRF	22 ± 20%		1.09	0.91	0.45	0.55	11

Maximum +40°C temperature rise at Irms. Maximum -30% inductance drop from initial measured value at Isat.



NPIS32LP Size

Series	Standard Values - Case Size 32 (3.0x3.0x1.2mm)						
	Inductance (μH)	Test Conditions	DCR (Ω)		Isat (Amps)	Irms (Amps)	SRF (MHz)
			Max.	Typ.	Max.	Max.	Min.
NPIS32LP1R0MTRF	1.0 ± 20%	100KHz, 1V	0.04	0.032	2.2	2.3	74
NPIS32LP2R2MTRF	2.2 ± 20%		0.09	0.075	1.5	1.4	51
NPIS32LP3R3MTRF	3.3 ± 20%		0.134	0.112	1.23	1.4	62
NPIS32LP100MTRF	10 ± 20%		0.372	0.310	0.75	0.75	22
NPIS32LP220MTRF	22 ± 20%		0.84	0.70	0.50	0.50	14

Maximum +40°C temperature rise at Irms. Maximum -30% inductance drop from initial measured value at Isat.

NPIS35LP Size

Series	Standard Values - Case Size 35 (3.0x3.0x1.5mm)						
	Inductance (μH)	Test Conditions	DCR (Ω)		Isat (Amps)	Irms (Amps)	SRF (MHz)
			Max.	Typ.	Max.	Max.	Min.
NPIS35LPR47MTRF	0.47 ± 20%	100KHz, 1V	0.022	.0218	2.4	3.0	216
NPIS35LP1R0MTRF	1.0 ± 20%		0.04	0.033	2.7	2.2	92
NPIS35LP1R5MTRF	1.5 ± 20%		0.048	0.04	2.0	2.0	70
NPIS35LP2R2MTRF	2.2 ± 20%		0.06	0.05	1.5	1.8	55
NPIS35LP3R3MTRF	3.3 ± 20%		0.084	0.07	1.3	1.5	51
NPIS35LP4R7MTRF	4.7 ± 20%		0.155	0.096	1.1	1.3	35
NPIS35LP6R8MTRF	6.8 ± 20%		0.144	0.12	0.80	0.90	27
NPIS35LP100MTRF	10 ± 20%		0.276	0.23	0.75	0.84	21
NPIS35LP150MTRF	15 ± 20%		0.36	0.30	0.60	0.73	18
NPIS35LP220MTRF	22 ± 20%		0.54	0.45	0.52	0.60	14

Maximum +40°C temperature rise at Irms. Maximum -30% inductance drop from initial measured value at Isat.



NPIS41LP Size

Series	Standard Values - Case Size 41 (4.0×4.0×1.2mm)						
	Inductance (μH)	Test Conditions	DCR (Ω)		Isat (Amps)	Irms (Amps)	SRF (MHz)
			Max.	Typ.	Max.	Max.	Min.
NPIS41LPR47MTRF	0.47 ± 20%	100KHz, 1V	0.032	0.02	3.5	2.9	193
NPIS41LPR82MTRF	0.82 ± 20%		0.042	0.035	3.0	2.5	121
NPIS41LP1R0MTRF	1.0 ± 20%		0.050	0.042	2.8	2.2	100
NPIS41LP1R5MTRF	1.5 ± 20%		0.05	0.042	2.1	2.2	72
NPIS41LP1R8MTRF	1.8 ± 20%		0.066	0.055	2.1	2.0	73
NPIS41LP2R2MTRF	2.2 ± 20%		0.066	0.055	1.7	2.0	61
NPIS41LP2R7MTRF	2.7 ± 20%		0.084	0.070	1.9	1.7	57
NPIS41LP3R3MTRF	3.3 ± 20%		0.084	0.070	1.4	1.7	55
NPIS41LP3R6MTRF	3.6 ± 20%		0.09	0.075	1.2	1.7	49
NPIS41LP4R3MTRF	4.3 ± 20%		0.108	0.09	1.2	1.5	42
NPIS41LP4R7MTRF	4.7 ± 20%		0.108	0.09	1.2	1.8	39
NPIS41LP5R1MTRF	5.1 ± 20%		0.132	0.110	1.2	1.4	35
NPIS41LP5R6MTRF	5.6 ± 20%		0.132	0.110	1.1	1.4	35
NPIS41LP6R8MTRF	6.8 ± 20%		0.150	0.125	0.9	1.3	33
NPIS41LP100MTRF	10 ± 20%		0.204	0.170	0.8	1.1	27

Maximum +40°C temperature rise at Irms. Maximum -30% inductance drop from initial measured value at Isat.

NPIS48LP Size

Series	Standard Values - Case Size 48 (4.0×4.0×1.8mm)					
	Inductance (μH)	Test Conditions	DCR (Ω)	Isat (Amps)	Irms (Amps)	SRF (MHz)
			± 20%	Max.	Max.	Min.
NPIS48LP1R0MTRF	1.0 ± 20%	100KHz, 1V	0.027	4.00	3.20	90
NPIS48LP1R5MTRF	1.5 ± 20%		0.031	3.60	2.95	70
NPIS48LP2R2MTRF	2.2 ± 20%		0.042	3.00	2.20	60
NPIS48LP3R3MTRF	3.3 ± 20%		0.055	2.30	2.00	45
NPIS48LP4R7MTRF	4.7 ± 20%		0.070	2.00	1.70	35
NPIS48LP6R8MTRF	6.8 ± 20%		0.098	1.60	1.45	30
NPIS48LP100MTRF	10 ± 20%		0.150	1.30	1.20	25
NPIS48LP150MTRF	15 ± 20%		0.210	1.10	0.85	18
NPIS48LP220MTRF	22 ± 20%		0.290	0.90	0.70	15
NPIS48LP330MTRF	33 ± 20%		0.460	0.70	0.55	12
NPIS48LP470MTRF	47 ± 20%		0.620	0.57	0.65	11
NPIS48LP680MTRF	68 ± 20%		0.810	0.53	0.55	7.1
NPIS48LP101MTRF	100 ± 20%		1.30	0.49	0.45	5.2
NPIS48LP151MTRF	150 ± 20%		2.60	0.41	0.33	5.1
NPIS48LP221MTRF	220 ± 20%		3.20	0.33	0.25	4.2
NPIS48LP331MTRF	330 ± 20%	4.90	0.26	0.22	3.2	

Maximum +40°C temperature rise at Irms. Maximum -30% inductance drop from initial measured value at Isat.

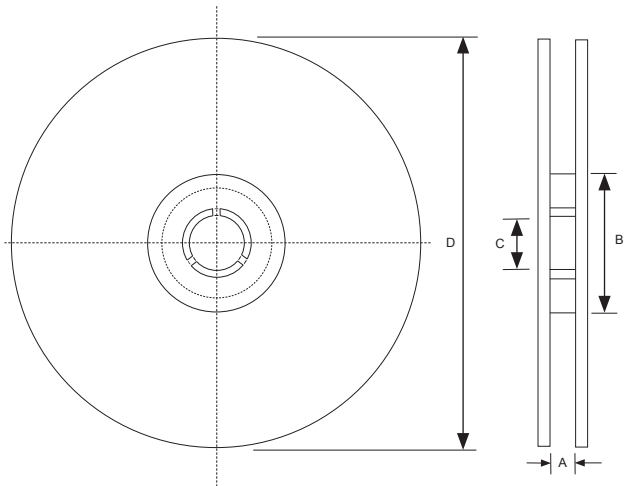
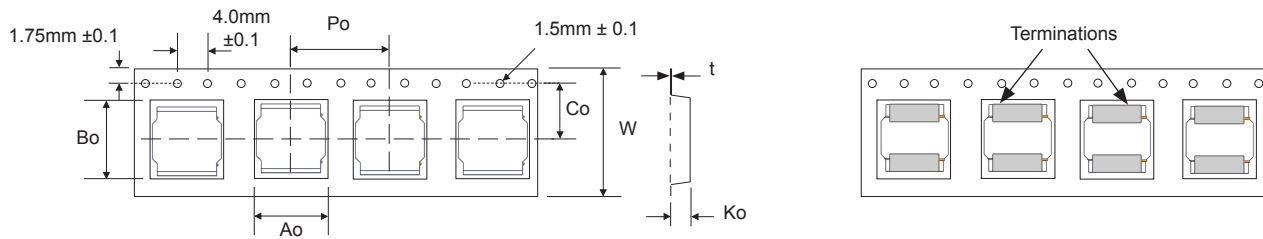


NPIS83LP Size

Series	Standard Values - Case Size 83 (8.0×8.0×3.0mm)					
	Inductance (μH)	Test Conditions	DCR (Ω)	Isat (Amps)	Irms (Amps)	SRF (MHz)
			± 20%	Max.	Max.	Min.
NPIS83LP1R0YTRF	1.0 ± 30%	100KHz, 1V	0.009	7.80	6.20	90
NPIS83LP1R5YTRF	1.5 ± 30%		0.012	6.20	5.30	70
NPIS83LP2R2MTRF	2.2 ± 20%		0.015	4.90	4.80	60
NPIS83LP3R3MTRF	3.3 ± 20%		0.019	4.20	4.30	45
NPIS83LP4R7MTRF	4.7 ± 20%		0.022	3.60	4.00	35
NPIS83LP6R8MTRF	6.8 ± 20%		0.029	3.00	3.40	30
NPIS83LP100MTRF	10 ± 20%		0.033	2.40	3.00	25
NPIS83LP150MTRF	15 ± 20%		0.060	2.00	2.20	18
NPIS83LP220MTRF	22 ± 20%		0.070	1.75	1.90	15
NPIS83LP330MTRF	33 ± 20%		0.120	1.30	1.50	12
NPIS83LP470MTRF	47 ± 20%		0.170	1.10	1.30	11

Maximum +40°C temperature rise at I_{rms}. Maximum -30% inductance drop from initial measured value at I_{sat}.

Case Size	CARRIER TAPING DIMENSIONS (mm) AND REEL QUANTITY							
	Ao	Bo	Ko	Co	W	Po	t	Quantity
NPIS26LP	1.90 ± 0.05	2.20 ± 0.05	1.2 ± 0.05	3.5 ± 0.05	8.0 ± 0.1	4.0 ± 0.1	0.25 ± 0.02	2,000
NPIS22LP	2.35 ± 0.05	2.35 ± 0.05	1.4 ± 0.05	3.5 ± 0.05	8.0 ± 0.1	4.0 ± 0.1	0.25 ± 0.03	2,000
NPIS20LP	2.45 ± 0.05	2.75 ± 0.05	1.2 ± 0.05	3.5 ± 0.05	8.0 ± 0.1	4.0 ± 0.1	0.25 ± 0.03	2,000
NPIS21LP	2.45 ± 0.05	2.75 ± 0.05	1.55 ± 0.05	3.5 ± 0.05	8.0 ± 0.1	4.0 ± 0.1	0.25 ± 0.03	2,000
NPIS32LP	3.3 ± 0.1	3.3 ± 0.1	1.6 ± 0.1	3.5 ± 0.1	8.0 ± 0.3	4.0 ± 0.1	0.25 ± 0.03	2,000
NPIS35LP			1.9 ± 0.1				0.25 ± 0.03	2,000
NPIS41LP	4.3 ± 0.1	4.3 ± 0.1	1.6 ± 0.1	5.5 ± 0.1	12.0 ± 0.3	8.0 ± 0.1	0.35 ± 0.03	4,500
NPIS48LP			2.1 ± 0.1					3,000
NPIS83LP	8.35 ± 0.1	8.35 ± 0.1	3.4 ± 0.1	7.5 ± 0.1	16.0 ± 0.3	12.0 ± 0.1	0.4 ± 0.03	1,500



Tape Width	REEL DIMENSIONS (mm)			
	A(mm)	B(mm)	C(mm)	D(mm)
NPIS26LP	8.4 +1.5/-0	58 ± 2.0	13.5 ± 0.2	178 ± 2.0
NPIS22LP				
NPIS20LP				
NPIS21LP				
NPIS32LP				
NPIS35LP	12.4 +0.2/-0	100 ± 2.0	13.0 +2/-0	330 ± 2.0
NPIS41LP				
NPIS48LP				
NPIS83LP	16.4 +0.2/-0	100 ± 2.0	13.0 +2/-0	330 ± 2.0

