

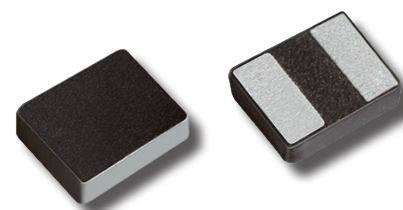
NPIM-Z Series

Ultra-High Current Power Inductors



SERIES FEATURES

- METAL COMPOSITE SHIELDED POWER INDUCTOR
- SOFT SATURATION
- ULTRA HIGH CURRENT
- LOW DCR FOR HIGH EFFICIENCY
- LOW ACOUSTIC NOISE AND LEAKAGE FLUX NOISE

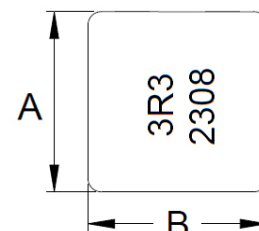
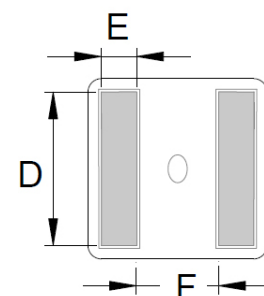


CHARACTERISTICS

Series Sizes & Inductance Ranges	NPIM42Z	NPIM42ZD	NPIM43ZD	NPIM52Z	NPIM53Z	NPIM55ZD
	0.10 ~ 1.8μH	0.47 ~ 3.3μH	0.90 ~ 3.3μH	0.15 ~ 1.5μH	0.15 ~ 4.7μH	2.2 ~ 10μH
	NPIM63Z	NPIM65Z	NPIM66Z	NPIM66ZD	NPIM72Z	NPIM73Z
	0.18 ~ 4.7μH	0.82 ~ 8.2μH	1.0 ~ 10.0μH	1.0 ~ 10.0μH	0.15 ~ 1.8μH	0.60 ~ 5.6μH
	NPIM75Z	NPIM77Z	NPIM88Z	NPIM1003ZD	NPIM1006Z	NPIM1010Z
	1.8 ~ 5.6μH	2.2 ~ 10.0μH	3.3~10μH	0.28 ~ 1.5μH	2.2 ~ 10.0μH	3.3 ~ 22μH
	NPIM1508Z	NPIM1510Z	NPIM1513Z			
	2.0 ~ 22μH	4.7~ 33μH	4.7~ 33μH			
Maximum Component Temperature (Ambient + Self-Heating)	-40°C ~ +125°C (General Product)					
	-55°C ~ +155°C (Automotive "QY" Product)					
Maximum Temperature Rise at Irms	+40°C					
Inductance Change at Isat	-30%					
Inductance Tolerance	±20%					
Resistance to Solder Heat	260°C ±5°C for 10 seconds					

SIZES & DIMENSIONS (mm)

Series	A	B	C	D	E	F
NPIM42Z	4.4 ± 0.2	4.4 ± 0.2	1.9 ± 0.2	3.4 ± 0.3	0.88 ± 0.2	1.6 ± 0.25
NPIM42ZD						
NPIM43ZD			2.8 ± 0.2			
NPIM52Z	6.0 ± 0.2	5.7 ± 0.2	1.9 ± 0.2	4.3 ± 0.3	1.1 ± 0.2	2.3 ± 0.25
NPIM53Z	6.0 ± 0.2	5.7 ± 0.2	2.9 ± 0.2	4.3 ± 0.3	1.1 ± 0.2	2.3 ± 0.25
NPIM55ZD	6.0 ± 0.2	5.7 ± 0.2	4.8 ± 0.2	4.3 ± 0.3	1.1 ± 0.2	2.3 ± 0.25
NPIM63Z	7.2 ± 0.2	6.9 ± 0.2	2.8 ± 0.2	See Spec Table	1.4 ± 0.2	2.6 ± 0.25
			2.9 ± 0.2			
NPIM65Z	7.2 ± 0.2	6.9 ± 0.2	4.8 ± 0.2		1.4 ± 0.2	2.6 ± 0.25
NPIM66Z	7.2 ± 0.2	6.9 ± 0.2	5.8 ± 0.2	5.3 ± 0.3	1.4 ± 0.2	2.6 ± 0.25
NPIM66ZD						
NPIM72Z	8.4 ± 0.3	8.0 ± 0.3	1.85 ± 0.2	See Spec Table	1.75 ± 0.2	3.15 ± 0.25
NPIM73Z	8.4 ± 0.3	8.0 ± 0.3	2.9 ± 0.2	See Spec Table	1.75 ± 0.2	3.15 ± 0.25
NPIM75Z	8.4 ± 0.3	8.0 ± 0.3	4.8 ± 0.2	See Spec Table	1.75 ± 0.2	3.15 ± 0.25
NPIM77Z	8.4 ± 0.3	8.0 ± 0.3	6.7 ± 0.3	See Spec Table	1.75 ± 0.2	3.15 ± 0.25
NPIM88Z	8.9 ± 0.3	8.5 ± 0.3	7.7 ± 0.3	See Spec Table	1.8 ± 0.2	3.5 ± 0.3
NPIM1003ZD	11.9 ± 0.3	11.0 ± 0.3	2.9 ± 0.2	9.0 ± 0.5	2.4 ± 0.2	4.4 ± 0.3
NPIM1006Z	11.9 ± 0.3	11.0 ± 0.3	5.7 ± 0.3	See Spec Table	2.4 ± 0.2	4.5 ± 0.3
NPIM1010Z	11.9 ± 0.3	11.0 ± 0.3	9.7 ± 0.3	See Spec table	2.4 ± 0.2	4.4±0.3
NPIM1508Z	17.5 ± 0.3	16.5 ± 0.3	7.7 ± 0.3	13.2 ± 0.5	3.2±0.2	7.0±0.3
NPIM1510Z	17.5 ± 0.3	16.5 ± 0.3	9.7 ± 0.3	13.2 ± 0.5	3.2±0.2	7.0±0.3
NPIM1513Z	17.5 ± 0.3	16.5 ± 0.3	12.7 ± 0.3	13.2 ± 0.5	3.2±0.2	7.0±0.3



NPIM-Z Series

Ultra-High Current Power Inductors



NPIM42Z Values

Part Number	Inductance Value (μH)	DC Resistance (mΩ) max.	+20C Rise Irms (A)	+40C Rise Irms (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	AEC-Q200 Qualified Part Number
NPIM42ZR10MTRAF	0.10	2.42	13.5	18	33	38	275	NPIM42ZR10MTRAQYF
NPIM42ZR22MTRAF	0.22	4.6	13	16.8	18.8	19.5	150	NPIM42ZR22MTRAQYF
NPIM42ZR33MTRAF	0.33	5.5	12	15.5	16.5	18	115	NPIM42ZR33MTRAQYF
NPIM42ZR36MTRAF	0.36	6.3	11	14.5	15	17	106	NPIM42ZR36MTRAQYF
NPIM42ZR40MTRAF	0.4	7.73	10	14	13.5	15.5	100	NPIM42ZR40MTRAQYF
NPIM42ZR47MTRAF	0.47	8.58	9.0	12.5	13	14.5	90	NPIM42ZR47MTRAQYF
NPIM42ZR56MTRAF	0.56	9.3	8.5	12	12.6	14	82	NPIM42ZR56MTRAQYF
NPIM42ZR60MTRAF	0.60	9.52	8.0	11.7	12.3	13.7	78	NPIM42ZR60MTRAQYF
NPIM42ZR72MTRAF	0.72	11.6	7.6	10.5	10.6	12	75	NPIM42ZR72MTRAQYF
NPIM42Z1R0MTRAF	1.0	14.6	6.8	9.6	8.8	9.6	68	NPIM42Z1R0MTRAQYF
NPIM42Z1R2MTRAF	1.2	17.9	6.6	9.0	7.8	9.0	51	NPIM42Z1R2MTRAQYF
NPIM42Z1R5MTRAF	1.5	23.5	5.8	7.6	7.4	8.0	47	NPIM42Z1R5MTRAQYF
NPIM42Z1R8MTRAF	1.8	28.0	5.2	7.0	7.0	7.5	42	NPIM42Z1R8MTRAQYF

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for Idc performance curves for all series' part numbers

NPIM42ZD Values

Part Number	Inductance Value (μH)	DC Resistance (mΩ) max.	+20C Rise Irms (A)	+40C Rise Irms (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	AEC-Q200 Qualified Part Number
NPIM42ZDR47MTRAF	0.47	6.8	9.8	13.2	12.5	14	90	NPIM42ZDR47MTRAQYF
NPIM42ZDR56MTRAF	0.56	7.8	9.5	12.6	11.3	13	85	NPIM42ZDR56MTRAQYF
NPIM42ZDR60MTRAF	0.6	7.8	9.4	12.4	11.1	12.8	85	NPIM42ZDR60MTRAQYF
NPIM42ZDR68MTRAF	0.68	8.2	9.2	12	10	11.6	73	NPIM42ZDR68MTRAQYF
NPIM42ZDR82MTRAF	0.82	9.5	8.5	11.5	9.0	10.2	62	NPIM42ZDR82MTRAQYF
NPIM42ZD1R0MTRAF	1.0	11.7	8.0	11	8.0	9.2	56	NPIM42ZD1R0MTRAQYF
NPIM42ZD1R2MTRAF	1.2	13.4	7.2	9.5	7.5	8.6	53	NPIM42ZD1R2MTRAQYF
NPIM42ZD1R5MTRAF	1.5	15.8	6.7	9.1	6.7	7.5	45	NPIM42ZD1R5MTRAQYF
NPIM42ZD2R0MTRAF	2.0	23.3	6.2	8.2	5.0	6.2	40	NPIM42ZD2R0MTRAQYF
NPIM42ZD2R2MTRAF	2.2	23.5	6.0	8.0	4.8	6.0	38	NPIM42ZD2R2MTRAQYF
NPIM42ZD3R3MTRAF	3.3	38.3	4.4	5.5	4.4	5.0	26	NPIM42ZD3R3MTRAQYF

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for Idc performance curves for all series' part numbers

NPIM43ZD Values

Part Number	Inductance Value (μH)	DC Resistance (mΩ) max.	+20C Rise Irms (A)	+40C Rise Irms (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	AEC-Q200 Qualified Part Number
NPIM43ZDR90MTRAF	0.9	9.1	8.2	11.2	9.0	10	60	NPIM43ZDR90MTRAQYF
NPIM43ZD1R0MTRAF	1.0	9.1	8.0	11	9.2	9.8	58	NPIM43ZD1R0MTRAQYF
NPIM43ZD1R2MTRAF	1.2	10.4	7.8	9.8	8.7	9.2	50	NPIM43ZD1R2MTRAQYF
NPIM43ZD1R5MTRAF	1.5	12	7.0	9.0	7.0	8.0	41	NPIM43ZD1R5MTRAQYF
NPIM43ZD1R8MTRAF	1.8	17.4	6.5	8.2	6.6	7.5	38	NPIM43ZD1R8MTRAQYF
NPIM43ZD2R2MTRAF	2.2	20.5	6.0	7.8	6.1	7.0	36	NPIM43ZD2R2MTRAQYF
NPIM43ZD3R3MTRAF	3.3	26	5.0	6.6	5.3	6.2	28	NPIM43ZD3R3MTRAQYF

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for Idc performance curves for all series' part numbers

NPIM-Z Series

Ultra-High Current Power Inductors



NPIM52Z Values

Part Number	Inductance Value (μH)	DC Resistance (mΩ) max.	+20C Rise I rms (A)	+40C Rise I rms (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	AEC-Q200 Qualified Part Number
NPIM52ZR15MTRAF	0.15	4.6	13.9	18.8	27	30	130	NPIM52ZR15MTRAQYF
NPIM52ZR16MTRAF	0.16	4.6	13.9	18.8	27	30	130	NPIM52ZR16MTRAQYF
NPIM52ZR33MTRAF	0.33	7.0	10.5	14.4	24	26	82	NPIM52ZR33MTRAQYF
NPIM52ZR47MTRAF	0.47	8.05	10.1	14.1	20	22	55	NPIM52ZR47MTRAQYF
NPIM52ZR56MTRAF	0.56	9.54	9.9	13.9	16	19	52	NPIM52ZR56MTRAQYF
NPIM52ZR68MTRAF	0.68	10.2	9.6	13.4	14	16	48	NPIM52ZR68MTRAQYF
NPIM52ZR80MTRAF	0.80	11.8	9.4	13	13.5	15.5	46	NPIM52ZR80MTRAQYF
NPIM52ZR82MTRAF	0.82	12.7	8.5	12	13	15	44	NPIM52ZR82MTRAQYF
NPIM52Z1R0MTRAF	1.0	13.8	7.5	10.5	12.8	14.5	41	NPIM52Z1R0MTRAQYF
NPIM52Z1R2MTRAF	1.2	16.3	6.8	9.4	12.2	14	38	NPIM52Z1R2MTRAQYF
NPIM52Z1R5MTRAF	1.5	18.7	6.4	8.8	11.7	13.3	36	NPIM52Z1R5MTRAQYF

Maximum +40°C temperature rise at I rms. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for I dc performance curves for all series' part numbers

NPIM53Z Values

Part Number	Inductance Value (μH)	DC Resistance (mΩ) max.	+20C Rise I rms (A)	+40C Rise I rms (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	AEC-Q200 Qualified Part Number
NPIM53ZR15MTRAF	0.15	2.31	14.3	22.2	32.5	36	140	NPIM53ZR15MTRAQYF
NPIM53ZR16MTRAF	0.16	2.33	14.2	22.2	32	35	140	NPIM53ZR16MTRAQYF
NPIM53ZR28MTRAF	0.28	3.3	14	19	28	32	120	NPIM53ZR28MTRAQYF
NPIM53ZR33MTRAF	0.33	3.52	13.8	19.2	26	28	110	NPIM53ZR33MTRAQYF
NPIM53ZR47MTRAF	0.47	4.13	13.7	18.4	24	26	95	NPIM53ZR47MTRAQYF
NPIM53ZR56MTRAF	0.56	4.52	13.6	17.7	20.2	22.2	73	NPIM53ZR56MTRAQYF
NPIM53ZR60MTRAF	0.6	4.52	13.6	17.7	20	22	68	NPIM53ZR60MTRAQYF
NPIM53ZR80MTRAF	0.8	5.65	10.1	13.1	18	20	57	NPIM53ZR80MTRAQYF
NPIM53ZR82MTRAF	0.82	5.78	9.9	12.9	17.6	19.7	54	NPIM53ZR82MTRAQYF
NPIM53Z1R0MTRAF	1.0	7.6	9.0	12.2	14.3	16.5	50	NPIM53Z1R0MTRAQYF
NPIM53Z1R2MTRAF	1.2	9.7	8.5	11	13.5	15	43	NPIM53Z1R2MTRAQYF
NPIM53Z1R5MTRAF	1.5	11.2	8.0	10.5	12.5	14	38	NPIM53Z1R5MTRAQYF
NPIM53Z1R8MTRAF	1.8	12.7	7.6	10.1	11.3	12.3	36	NPIM53Z1R8MTRAQYF
NPIM53Z2R2MTRAF	2.2	14.5	7.2	9.7	9.0	10	33	NPIM53Z2R2MTRAQYF
NPIM53Z3R3MTRAF	3.3	23.1	5.9	8.1	8.7	9.5	25	NPIM53Z3R3MTRAQYF
NPIM53Z3R6MTRAF	3.6	27.5	4.6	6.5	7.9	9.0	23	NPIM53Z3R6MTRAQYF
NPIM53Z4R7MTRAF	4.7	36.3	4.3	5.9	7.0	8.2	21	NPIM53Z4R7MTRAQYF

Maximum +40°C temperature rise at I rms. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for I dc performance curves for all series' part numbers

NPIM-Z Series

Ultra-High Current Power Inductors



NPIM55ZD Values

Part Number	Inductance Value (μH)	DC Resistance (mΩ) max.	+20C Rise Irms (A)	+40C Rise Irms (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	AEC-Q200 Qualified Part Number
NPIM55ZD2R2MTRAF	2.2	9.4	9.8	13.8	10.0	11.0	29	NPIM55ZD2R2MTRAQYF
NPIM55ZD3R3MTRAF	3.3	12.3	7.5	10.0	9.00	10.0	26	NPIM55ZD3R3MTRAQYF
NPIM55ZD4R7MTRAF	4.7	21.0	5.9	8.1	7.40	8.80	22	NPIM55ZD4R7MTRAQYF
NPIM55ZD5R6MTRAF	5.6	24.2	5.3	7.2	7.20	8.60	20	NPIM55ZD5R6MTRAQYF
NPIM55ZD6R8MTRAF	6.8	28.6	4.8	6.4	6.60	7.80	18	NPIM55ZD6R8MTRAQYF
NPIM55ZD8R2MTRAF	8.2	32.5	4.6	6.1	6.10	7.20	15	NPIM55ZD8R2MTRAQYF
NPIM55ZD100MTRAF	10	43.0	3.8	5.0	5.40	6.50	10	NPIM55ZD100MTRAQYF

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for Idc performance curves for all series' part numbers

NPIM63Z Values

Part Number	Inductance Value (μH)	DCR (mΩ) max.	+20C Rise Irms (A)	+40C Rise Irms (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	C ± 0.2 (mm)	D ± 0.3 (mm)	AEC-Q200 Qualified Part Number
NPIM63ZR18MTRAF	0.18	1.75	24	32	36	40	143	2.8	5.30	NPIM63ZR18MTRAQYF
NPIM63ZR33MTRAF	0.33	2.5	20	25	28	32	78		5.55	NPIM63ZR33MTRAQYF
NPIM63ZR56MTRAF	0.56	3.31	17	22	25	29	70		5.30	NPIM63ZR56MTRAQYF
NPIM63ZR68MTRAF	0.68	5.17	15	20	21	25	60		5.30	NPIM63ZR68MTRAQYF
NPIM63Z1R0MTRAF	1.0	6.05	13	18	18	23	52		5.20	NPIM63Z1R0MTRAQYF
NPIM63Z1R2MTRAF	1.2	7.4	12	16	16	22	47		5.15	NPIM63Z1R2MTRAQYF
NPIM63Z1R5MTRAF	1.5	9.13	11	15	15.5	20	37	2.9	5.15	NPIM63Z1R5MTRAQYF
NPIM63Z1R8MTRAF	1.8	10.2	10	14	13	18.2	33		5.10	NPIM63Z1R8MTRAQYF
NPIM63Z2R2MTRAF	2.2	12.2	7.0	10	11	15.9	29		5.05	NPIM63Z2R2MTRAQYF
NPIM63Z3R3MTRAF	3.3	20.8	6.0	8.0	9.0	12.2	25		5.00	NPIM63Z3R3MTRAQYF
NPIM63Z4R5MTRAF	4.5	25.3	5.0	7.0	8.0	10	20		5.00	NPIM63Z4R5MTRAQYF
NPIM63Z4R7MTRAF	4.7	29.2	4.0	6.0	7.0	9.0	15		5.00	NPIM63Z4R7MTRAQYF

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for Idc performance curves for all series' part numbers

NPIM65Z Values

Part Number	Inductance Value (μH)	DCR (mΩ) max.	+20C Rise Irms (A)	+40C Rise Irms (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	D ± 0.3 (mm)	AEC-Q200 Qualified Part Number
NPIM65ZR82MTRAF	0.82	4.18	16	21	20	24	52	5.3	NPIM65ZR82MTRAQYF
NPIM65Z1R0MTRAF	1.0	4.52	15	20	18	23	50		NPIM65Z1R0MTRAQYF
NPIM65Z1R2MTRAF	1.2	5.83	14	18	16	22	43		NPIM65Z1R2MTRAQYF
NPIM65Z1R5MTRAF	1.5	6.3	13	17	14.5	19.5	40		NPIM65Z1R5MTRAQYF
NPIM65Z1R8MTRAF	1.8	7.1	12	16	13.5	18.5	33		NPIM65Z1R8MTRAQYF
NPIM65Z2R2MTRAF	2.2	8.5	10	13	12	16	30		NPIM65Z2R2MTRAQYF
NPIM65Z3R3MTRAF	3.3	12.5	8.5	11	10	12.5	25	5.2	NPIM65Z3R3MTRAQYF
NPIM65Z4R3MTRAF	4.3	16.2	7.0	9.0	8.5	11	23		NPIM65Z4R3MTRAQYF
NPIM65Z4R7MTRAF	4.7	18.4	6.5	8.5	8.4	10.5	22		NPIM65Z4R7MTRAQYF
NPIM65Z5R6MTRAF	5.6	22	5.7	7.0	8.3	10	19		NPIM65Z5R6MTRAQYF
NPIM65Z6R8MTRAF	6.8	25.4	5.2	6.6	7.0	9.0	17		NPIM65Z6R8MTRAQYF
NPIM65Z8R2MTRAF	8.2	31.5	4.5	6.2	6.8	8.0	15		NPIM65Z8R2MTRAQYF

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for Idc performance curves for all series' part numbers

Performance Passives By Design

NPIM-Z Series

Ultra-High Current Power Inductors



NPIM66Z Values

Part Number	Inductance Value (μH)	DC Resistance (mΩ) max.	+20C Rise I _{rms} (A)	+40C Rise I _{rms} (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	AEC-Q200 Qualified Part Number
NPIM66Z1R0MTRAF	1.0	4.4	16.0	21.0	19.0	24	54	NPIM66Z1R0MTRAQYF
NPIM66Z1R5MTRAF	1.5	6.1	13.5	17.5	15.0	20	35	NPIM66Z1R5MTRAQYF
NPIM66Z2R2MTRAF	2.2	8.1	11.0	14.0	12.5	16.5	31	NPIM66Z2R2MTRAQYF
NPIM66Z3R3MTRAF	3.3	12.3	9.0	12.0	11.0	13	27	NPIM66Z3R3MTRAQYF
NPIM66Z4R7MTRAF	4.7	16.2	8.5	11.0	9.5	11.5	22	NPIM66Z4R7MTRAQYF
NPIM66Z5R6MTRAF	5.6	20.0	7.6	10.0	9.1	10.6	19	NPIM66Z5R6MTRAQYF
NPIM66Z6R8MTRAF	6.8	23.2	7.0	9.0	8.7	9.8	16	NPIM66Z6R8MTRAQYF
NPIM66Z8R2MTRAF	8.2	28.9	5.0	7.0	7.5	8.6	17	NPIM66Z8R2MTRAQYF
NPIM66Z100MTRAF	10.0	36.3	4.0	5.8	6.3	7.5	13	NPIM66Z100MTRAQYF

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for I_{dc} performance curves for all series' part numbers

NPIM66ZD Values

Part Number	Inductance Value (μH)	DC Resistance (mΩ) max.	+20C Rise I _{rms} (A)	+40C Rise I _{rms} (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	AEC-Q200 Qualified Part Number
NPIM66ZD1R0MTRAF	1.0	4.29	15	19	16	18	37	NPIM66ZD1R0MTRAQYF
NPIM66ZD1R2MTRAF	1.2	5.06	14	17	15	17	30	NPIM66ZD1R2MTRAQYF
NPIM66ZD1R5MTRAF	1.5	5.61	13	16	14	16	31	NPIM66ZD1R5MTRAQYF
NPIM66ZD2R2MTRAF	2.2	7.8	11	14	12	14	26	NPIM66ZD2R2MTRAQYF
NPIM66ZD3R3MTRAF	3.3	12.1	9	12	10.5	11.5	24	NPIM66ZD3R3MTRAQYF
NPIM66ZD4R7MTRAF	4.7	14.4	8	11	9.5	10.5	22	NPIM66ZD4R7MTRAQYF
NPIM66ZD5R6MTRAF	5.6	15.8	7.5	10	9.0	10	17	NPIM66ZD5R6MTRAQYF
NPIM66ZD6R8MTRAF	6.8	20.8	7.0	9.0	8.7	9.2	15	NPIM66ZD6R8MTRAQYF
NPIM66ZD8R2MTRAF	8.2	24.8	6.0	8.0	8.0	8.5	14	NPIM66ZD8R2MTRAQYF
NPIM66ZD100MTRAF	10	29.3	5.0	7.0	6.8	7.6	12	NPIM66ZD100MTRAQYF

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for I_{dc} performance curves for all series' part numbers

NPIM72Z Values

Part Number	Inductance Value (μH)	DCR (mΩ) max.	+20C Rise I _{rms} (A)	+40C Rise I _{rms} (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	D ±0.3 (mm)	AEC-Q200 Qualified Part Number
NPIM72ZR15MTRAF	0.15	2.50	18.0	24	46.0	51.0	130	6.6	NPIM72ZR15MTRAQYF
NPIM72ZR27MTRAF	0.27	3.50	16.0	21	32.0	35.0	68	6.6	NPIM72ZR27MTRAQYF
NPIM72ZR31MTRAF	0.31	4.80	14.0	20	31.0	34.0	65	6.2	NPIM72ZR31MTRAQYF
NPIM72ZR33MTRAF	0.33	4.80	13.0	19	31.0	34.0	61	6.2	NPIM72ZR33MTRAQYF
NPIM72ZR47MTRAF	0.47	6.20	12.0	17	25.0	28.0	55	6.2	NPIM72ZR47MTRAQYF
NPIM72ZR68MTRAF	0.68	9.20	10.0	13	23.0	25.0	45	6.2	NPIM72ZR68MTRAQYF
NPIM72Z1R0MTRAF	1.0	10.80	8.0	11	20.0	23.0	40	6.2	NPIM72Z1R0MTRAQYF
NPIM72Z1R2MTRAF	1.2	12.80	7.0	10	18.0	21.0	36	6.2	NPIM72Z1R2MTRAQYF
NPIM72Z1R5MTRAF	1.5	17.60	6.0	9.0	15.0	17.0	30	6.2	NPIM72Z1R5MTRAQYF
NPIM72Z1R8MTRAF	1.8	19.80	5.5	8.0	13.0	15.0	25	6.2	NPIM72Z1R8MTRAQYF

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for I_{dc} performance curves for all series' part numbers

NPIM-Z Series

Ultra-High Current Power Inductors



NPIM73Z Values

Part Number	Inductance Value (μH)	DCR (mΩ) max.	+20C Rise Irms (A)	+40C Rise Irms (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	D ±0.3 (mm)	AEC-Q200 Qualified Part Number
NPIM73ZR60MTRAF	0.6	3.2	18	23	32	36	60	6.6	NPIM73ZR60MTRAQYF
NPIM73Z1R0MTRAF	1.0	5.0	16.1	21.8	28	30	35		NPIM73Z1R0MTRAQYF
NPIM73Z1R5MTRAF	1.5	8.25	12	15.3	23.5	25	31		NPIM73Z1R5MTRAQYF
NPIM73Z2R2MTRAF	2.2	13.7	10	13	17	19	28	6.2	NPIM73Z2R2MTRAQYF
NPIM73Z2R7MTRAF	2.7	15.4	9.2	11.4	13.5	16	23		NPIM73Z2R7MTRAQYF
NPIM73Z3R3MTRAF	3.3	18	8.0	10	13	15	22		NPIM73Z3R3MTRAQYF
NPIM73Z4R7MTRAF	4.7	26.7	6.9	9.0	12.2	13.5	18		NPIM73Z4R7MTRAQYF
NPIM73Z5R6MTRAF	5.6	33.2	5.3	7.3	11.5	12.5	16		NPIM73Z5R6MTRAQYF

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for Idc performance curves for all series' part numbers

NPIM75Z Values

Part Number	Inductance Value (μH)	DCR (mΩ) max.	+20C Rise Irms (A)	+40C Rise Irms (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	D ±0.3 (mm)	AEC-Q200 Qualified Part Number
NPIM75Z1R8MTRAF	1.8	4.62	13.0	16.0	21	25	29	6.5	NPIM75Z1R8MTRAQYF
NPIM75Z2R2MTRAF	2.2	6.4	11.0	14.0	17.0	21.0	27	6.2	NPIM75Z2R2MTRAQYF
NPIM75Z3R3MTRAF	3.3	11.4	10.0	13.0	14.0	17.0	20		NPIM75Z3R3MTRAQYF
NPIM75Z4R7MTRAF	4.7	15.4	8.5	11.0	13.0	15.0	17		NPIM75Z4R7MTRAQYF
NPIM75Z5R6MTRAF	5.6	17.2	7.0	10.0	11.0	13.0	15		NPIM75Z5R6MTRAQYF

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for Idc performance curves for all series' part numbers

NPIM77Z Values

Part Number	Inductance Value (μH)	DCR (mΩ) max.	+20C Rise Irms (A)	+40C Rise Irms (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	D ±0.3 (mm)	AEC-Q200 Qualified Part Number
NPIM77Z2R2MTRAF	2.2	6.33	13.2	17.8	17.6	19.6	25	6.7	NPIM77Z2R2MTRAQYF
NPIM77Z3R3MTRAF	3.3	9.42	11.5	15.1	15.1	19.4	23		NPIM77Z3R3MTRAQYF
NPIM77Z4R7MTRAF	4.7	13.5	10.5	13.6	14.0	15.5	19		NPIM77Z4R7MTRAQYF
NPIM77Z5R6MTRAF	5.6	15.03	8.5	11.4	12.0	14.1	17	6.5	NPIM77Z5R6MTRAQYF
NPIM77Z6R8MTRAF	6.8	19.6	7.0	9.5	11.0	12.8	13		NPIM77Z6R8MTRAQYF
NPIM77Z100MTRAF	10.0	26.4	5.0	7.0	9.0	10.0	12		NPIM77Z100MTRAQYF

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for Idc performance curves for all series' part numbers

NPIM88Z Values

Part Number	Inductance Value (μH)	DCR (mΩ) max.	+20C Rise Irms (A)	+40C Rise Irms (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	D ±0.3 (mm)	AEC-Q200 Qualified Part Number
NPIM88Z3R3MTRAF	3.3	7.3	13.5	18.0	20.0	23.0	25	6.9	NPIM88Z3R3MTRAQYF
NPIM88Z4R7MTRAF	4.7	9.8	10.5	14.6	17.0	19.0	22		NPIM88Z4R7MTRAQYF
NPIM88Z6R8MTRAF	6.8	14.3	8.0	11.3	12.5	14.5	16		NPIM88Z6R8MTRAQYF
NPIM88Z100MTRAF	10.0	22.9	6.6	8.7	10.0	11.0	12		NPIM88Z100MTRAQYF

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for Idc performance curves for all series' part numbers

NPIM-Z Series

Ultra-High Current Power Inductors



NPIM1003ZD Values

Part Number	Inductance Value (μH)	DCR (mΩ) max.	+20C Rise I _{rms} (A)	+40C Rise I _{rms} (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	AEC-Q200 Qualified Part Number
NPIM1003ZDR28MTRAF	0.28	1.60	25.5	35.0	58.0	65.0	85	NPIM1003ZDR28MTRAQYF
NPIM1003ZDR56MTRAF	0.56	2.75	23.0	32.0	39.0	44.0	50	NPIM1003ZDR56MTRAQYF
NPIM1003ZDR82MTRAF	0.82	4.10	18.0	25.0	32.0	38.0	42	NPIM1003ZDR82MTRAQYF
NPIM1003ZDR90MTRAF	0.90	4.20	17.0	24.0	31.0	36.0	40	NPIM1003ZDR90MTRAQYF
NPIM1003ZD1R0MTRAF	1.0	4.95	16.0	23.0	30.0	35.0	37	NPIM1003ZD1R0MTRAQYF
NPIM1003ZD1R5MTRAF	1.5	6.60	12.0	18.0	25.0	30.0	32	NPIM1003ZD1R5MTRAQYF

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for I_{dc} performance curves for all series' part numbers

NPIM1006Z Values

Part Number	Inductance Value (μH)	DCR (mΩ) max.	+20C Rise I _{rms} (A)	+40C Rise I _{rms} (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	D ± 0.5 (mm)	AEC-Q200 Qualified Part Number
NPIM1006Z2R2MTRAF	2.2	4.84	14.0	20.0	30.0	35.0	22	9.0	NPIM1006Z2R2MTRAQYF
NPIM1006Z3R3MTRAF	3.3	7.7	11.4	16.8	25.0	28.0	18		NPIM1006Z3R3MTRAQYF
NPIM1006Z4R7MTRAF	4.7	10.72	8.7	14.0	22.0	25.0	15		NPIM1006Z4R7MTRAQYF
NPIM1006Z5R6MTRAF	5.6	11.9	7.0	12.0	17.0	20.0	14	8.8	NPIM1006Z5R6MTRAQYF
NPIM1006Z6R8MTRAF	6.8	13.0	6.0	10.5	15.5	18.0	13		NPIM1006Z6R8MTRAQYF
NPIM1006Z8R2MTRAF	8.2	16.5	5.0	9.5	14.0	16.5	12		NPIM1006Z8R2MTRAQYF
NPIM1006Z100MTRAF	10.0	18.2	4.5	9.0	13.0	15.0	11		NPIM1006Z100MTRAQYF

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for I_{dc} performance curves for all series' part numbers

NPIM1010Z Values

Part Number	Inductance Value (μH)	DCR (mΩ) max.	+20C Rise I _{rms} (A)	+40C Rise I _{rms} (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	D ± 0.3 (mm)	AEC-Q200 Qualified Part Number
NPIM1010Z3R3MTRAF	3.3	4.1	18.2	25	23.4	27.4	20	9.3	NPIM1010Z3R3MTRAQYF
NPIM1010Z4R7MTRAF	4.7	5.7	17.5	24	21.4	25.4	18		NPIM1010Z4R7MTRAQYF
NPIM1010Z5R6MTRAF	5.6	7.2	15.7	21.2	19.6	23.6	16		NPIM1010Z5R6MTRAQYF
NPIM1010Z6R8MTRAF	6.8	8.9	14	18.5	18.5	21.8	15	9.0	NPIM1010Z6R8MTRAQYF
NPIM1010Z8R2MTRAF	8.2	12.4	12.9	17.1	16.3	18.3	11		NPIM1010Z8R2MTRAQYF
NPIM1010Z100MTRAF	10	13.75	11.5	15.5	14.6	17.5	10		NPIM1010Z100MTRAQYF
NPIM1010Z150MTRAF	15	19.3	9.9	13.8	12.5	15.5	9.0		NPIM1010Z150MTRAQYF
NPIM1010Z220MTRAF	22	23.1	9.0	11	10.5	12.5	7.0		NPIM1010Z220MTRAQYF

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for I_{dc} performance curves for all series' part numbers

NPIM-Z Series

Ultra-High Current Power Inductors



NPIM1508Z Values

Part Number	Inductance Value (μH)	DCR (mΩ) max.	+20C Rise I _{rms} (A)	+40C Rise I _{rms} (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	AEC-Q200 Qualified Part Number
NPIM1508Z2R0MTRAF	2.0	2.21	29.5	40	52	57	18	NPIM1508Z2R0MTRAQYF
NPIM1508Z2R2MTRAF	2.2	2.48	28	37	49	55	18	NPIM1508Z2R2MTRAQYF
NPIM1508Z3R0MTRAF	3.0	3.0	26	34.5	41	46	16	NPIM1508Z3R0MTRAQYF
NPIM1508Z4R2MTRAF	4.2	4.68	20.5	27	33	38	13	NPIM1508Z4R2MTRAQYF
NPIM1508Z4R7MTRAF	4.7	5.16	20	26.5	32	37	12	NPIM1508Z4R7MTRAQYF
NPIM1508Z5R3MTRAF	5.3	5.34	19.5	26	31	35	12	NPIM1508Z5R3MTRAQYF
NPIM1508Z6R2MTRAF	6.2	6.5	17	23	31	34	11	NPIM1508Z6R2MTRAQYF
NPIM1508Z7R2MTRAF	7.2	7.2	15	21	29	32	10	NPIM1508Z7R2MTRAQYF
NPIM1508Z8R2MTRAF	8.2	7.92	13	19	25	28	9.0	NPIM1508Z8R2MTRAQYF
NPIM1508Z100MTRAF	10	9.6	11	16	21	24	8.0	NPIM1508Z100MTRAQYF
NPIM1508Z150MTRAF	15	15	10	13	18	21	7.0	NPIM1508Z150MTRAQYF
NPIM1508Z200MTRAF	22	23.2	9.0	12	16	19	6.0	NPIM1508Z200MTRAQYF

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for Idc performance curves for all series' part numbers

NPIM1510Z Values

Part Number	Inductance Value (μH)	DCR (mΩ) max.	+20C Rise I _{rms} (A)	+40C Rise I _{rms} (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	AEC-Q200 Qualified Part Number
NPIM1510Z4R7MTRAF	4.7	3.8	22	30	39.0	43.0	13	NPIM1510Z4R7MTRAQYF
NPIM1510Z5R6MTRAF	5.6	4.2	21	28	34.0	38.0	11	NPIM1510Z5R6MTRAQYF
NPIM1510Z6R8MTRAF	6.8	4.6	20	26	31.0	36.0	10	NPIM1510Z6R8MTRAQYF
NPIM1510Z8R2MTRAF	8.2	7.2	19	25	28.0	32.0	9.0	NPIM1510Z8R2MTRAQYF
NPIM1510Z100MTRAF	10.0	8.6	18	24	26.0	29.0	8.0	NPIM1510Z100MTRAQYF
NPIM1510Z150MTRAF	15.0	11.5	14	18	20.0	23.0	6.0	NPIM1510Z150MTRAQYF
NPIM1510Z220MTRAF	22.0	15.8	11	16	18.0	20.0	5.0	NPIM1510Z220MTRAQYF
NPIM1510Z330MTRAF	33.0	20.0	9.0	13	16.7	18.7	4.0	NPIM1510Z330MTRAQYF

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for Idc performance curves for all series' part numbers

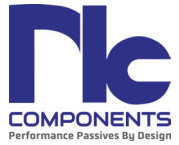
NPIM1513Z Values

Part Number	Inductance Value (μH)	DCR (mΩ) max.	+20C Rise I _{rms} (A)	+40C Rise I _{rms} (A)	Isat (A) Max.	Isat (A) Typ.	SRF (MHz) Ref	AEC-Q200 Qualified Part Number
NPIM1513Z4R7MTRAF	4.7	3.3	23	31	40	44	13	NPIM1513Z4R7MTRAQYF
NPIM1513Z5R6MTRAF	5.6	3.9	22	29	35	40	11	NPIM1513Z5R6MTRAQYF
NPIM1513Z6R8MTRAF	6.8	4.2	21	27	32	37	10	NPIM1513Z6R8MTRAQYF
NPIM1513Z8R2MTRAF	8.2	5.74	20	26	29	33	9.0	NPIM1513Z8R2MTRAQYF
NPIM1513Z100MTRAF	10	7.0	19	25	27	30	8.0	NPIM1513Z100MTRAQYF
NPIM1513Z150MTRAF	15	7.5	16	22	21	25.5	7.0	NPIM1513Z150MTRAQYF
NPIM1513Z220MTRAF	22	13.86	12	17	19	22	6.0	NPIM1513Z220MTRAQYF
NPIM1513Z330MTRAF	33	22.2	9.0	14	16	19	5.0	NPIM1513Z330MTRAQYF

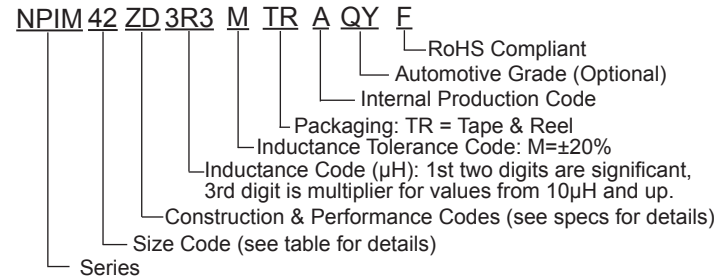
Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.
Visit www.niccomp.com for Idc performance curves for all series' part numbers

NPIM-Z Series

Ultra-High Current Power Inductors



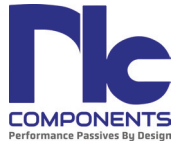
PART NUMBER SYSTEM



"QY" denotes suitable for automotive equipment, sourced to special production and inspection at IATF-16949 certified production site

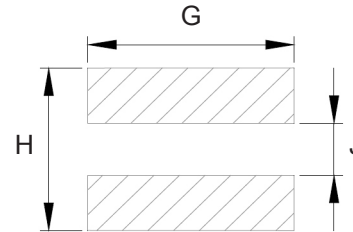
NPIM-Z Series

Ultra-High Current Power Inductors



LAND PATTERNS (mm)

Series	G	H	J
NPIM42Z	3.8 ref	3.4 ref	1.4 ref
NPIM42ZD			
NPIM43ZD			
NPIM52Z	4.7 ref	4.5 ref	2.0 ref
NPIM53Z	4.7 ref	4.5 ref	2.0 ref
NPIM55ZD	4.7 ref	4.5 ref	2.0 ref
NPIM63Z	5.6 ref	5.6 ref	2.5 ref
NPIM65Z	5.6 ref	5.6 ref	2.5 ref
NPIM66Z	5.6 ref	5.6 ref	2.5 ref
NPIM66ZD			
NPIM72Z	7.2 ref	7.4 ref	2.8 ref
NPIM73Z			
NPIM75Z	7.2 ref	7.4 ref	2.8 ref
NPIM77Z	6.7 ref	7.8 ref	2.8 ref
NPIM88Z	8.0 ref	2.7 ref	7.8 ref
NPIM1003ZD	11.0 ref	10.5 ref	3.7 ref
NPIM1006Z			
NPIM1010Z	11.0 ref	10.5 ref	3.7 ref
NPIM1508Z	15.0 ref	15 ref	6.0 ref
NPIM1510Z	15.0 ref	15 ref	6.0 ref
NPIM1513Z	15.0 ref	15 ref	6.0 ref

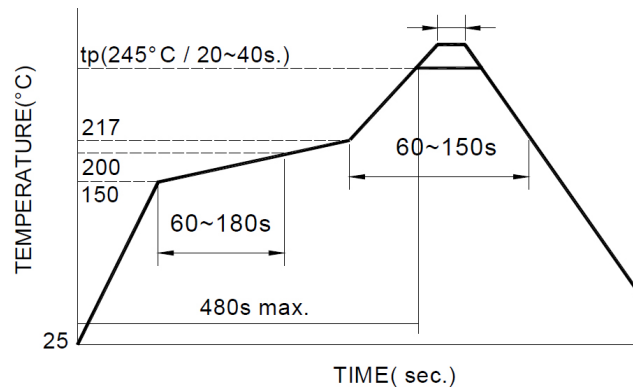


Note:

1. The above PCB layout reference only.
2. Recommend solder paste thickness at 0.15mm and above.

REFLOW SOLDERING PROFILE

Soldering 260°C max.
10 seconds max.



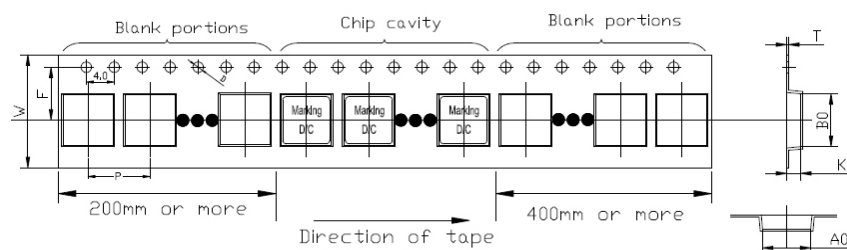
NPIM-Z Series

Ultra-High Current Power Inductors



TAPING DIMENSIONS (mm)

Series	Ao	Bo	Ko	P	W	F	T	D
NPIM42Z(D)	4.7 ± 0.1	4.7 ± 0.1	2.3 ± 0.1	8.0 ± 0.1	12 ± 0.3	5.5 ± 0.1	0.35 ± 0.1	1.5 ± 0.1
NPIM43ZD	4.7 ± 0.1	4.7 ± 0.1	3.3 ± 0.1	8.0 ± 0.1	12 ± 0.3	5.5 ± 0.1	0.35 ± 0.1	1.5 ± 0.1
NPIM52Z	6.4 ± 0.1	6.1 ± 0.1	2.3 ± 0.1	8.0 ± 0.1	12.0 ± 0.3	5.5 ± 0.1	0.35 ± 0.05	1.5 ± 0.1
NPIM53Z	6.4 ± 0.1	6.1 ± 0.1	3.3 ± 0.1	8.0 ± 0.1	16.0 ± 0.3	7.5 ± 0.1	0.35 ± 0.05	1.5 ± 0.1
NPIM55ZD	6.1 ± 0.1	6.4 ± 0.1	5.3 ± 0.1	8.0 ± 0.1	16.0 ± 0.3	7.5 ± 0.1	0.35 ± 0.05	1.5 ± 0.1
NPIM63Z	7.6 ± 0.1	7.3 ± 0.1	3.3 ± 0.1	12.0 ± 0.1	16 ± 0.3	7.5 ± 0.1	0.35 ± 0.05	1.5 ± 0.1
NPIM65Z	7.6 ± 0.1	7.3 ± 0.1	5.3 ± 0.1	12.0 ± 0.1	16 ± 0.3	7.5 ± 0.1	0.35 ± 0.1	1.5 ± 0.1
NPIM66Z(D)	7.6 ± 0.1	6.3 ± 0.1	6.3 ± 0.1	12.0 ± 0.1	16 ± 0.3	7.5 ± 0.1	0.35 ± 0.1	1.5 ± 0.1
NPIM72Z	8.8 ± 0.1	8.4 ± 0.1	2.3 ± 0.1	12.0 ± 0.1	16 ± 0.3	7.5 ± 0.1	0.35 ± 0.1	1.5 ± 0.1
NPIM73Z	8.8 ± 0.1	8.4 ± 0.1	3.3 ± 0.1	12.0 ± 0.1	16 ± 0.3	7.5 ± 0.1	0.35 ± 0.1	1.5 ± 0.1
NPIM75Z	8.4 ± 0.1	8.8 ± 0.1	5.3 ± 0.1	12.0 ± 0.1	16 ± 0.3	7.5 ± 0.1	0.35 ± 0.1	1.5 ± 0.1
NPIM77Z	8.4 ± 0.1	8.8 ± 0.1	7.3 ± 0.1	12.0 ± 0.1	16 ± 0.3	7.3 ± 0.1	0.35 ± 0.1	1.5 ± 0.1
NPIM88Z	9.4 ± 0.1	8.9 ± 0.1	8.5 ± 0.1	16.0 ± 0.1	24 ± 0.3	7.5 ± 0.1	0.35 ± 0.1	1.5 ± 0.1
NPIM1003ZD	11.5 ± 0.1	12.4 ± 0.1	3.3 ± 0.1	16.0 ± 0.1	24 ± 0.3	11.5 ± 0.1	0.35 ± 0.1	1.5 ± 0.1
NPIM1006Z	11.5 ± 0.1	12.4 ± 0.1	6.3 ± 0.1	16.0 ± 0.1	24 ± 0.3	11.5 ± 0.1	0.35 ± 0.1	1.5 ± 0.1
NPIM1010Z	12.4 ± 0.1	11.5 ± 0.1	10.3 ± 0.1	16.0 ± 0.1	24 ± 0.3	11.5 ± 0.1	0.35 ± 0.1	1.5 ± 0.1
NPIM1508Z	18.0 ± 0.1	17.0 ± 0.1	8.5 ± 0.1	24.0 ± 0.1	32.0 ± 0.3	14.2 ± 0.1	0.50 ± 0.05	1.5 ± 0.1
NPIM1510Z	17.0 ± 0.1	18.0 ± 0.1	10.5 ± 0.1	24.0 ± 0.1	32.0 ± 0.3	14.2 ± 0.1	0.50 ± 0.05	1.5 ± 0.1
NPIM1513Z	18.0 ± 0.1	17.0 ± 0.1	13.6 ± 0.1	24.0 ± 0.1	32.0 ± 0.3	14.2 ± 0.1	0.50 ± 0.05	1.5 ± 0.1



NPIM-Z Series

Ultra-High Current Power Inductors



REEL DIMENSIONS (mm)

Series	A	B	C	D	Qty/Reel
NPIM42Z(D)	12.4 +2/-0	100 ± 2.0	13.0 +0.5/-0.2	330	3,000
NPIM43ZD					2,000
NPIM52Z					3,000
NPIM53Z	16.4 +2/-0				2,000
NPIM55ZD					1,500
NPIM63Z					1,000
NPIM65Z					800
NPIM66Z(D)					750
NPIM73Z					1,500
NPIM75Z					800
NPIM77Z					700
NPIM72Z	24.4 +2/-0				2,000
NPIM88Z					450
NPIM103ZD					1,000
NPIM1006Z					500
NPIM1010Z					300
NPIM1508Z					200
NPIM1510Z	32.4 +2/-0				150
NPIM1513Z					100

