

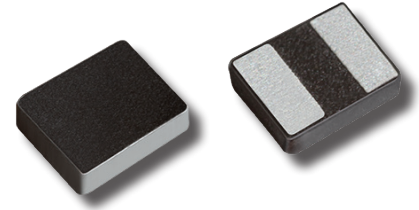
NPIM_Z Series

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

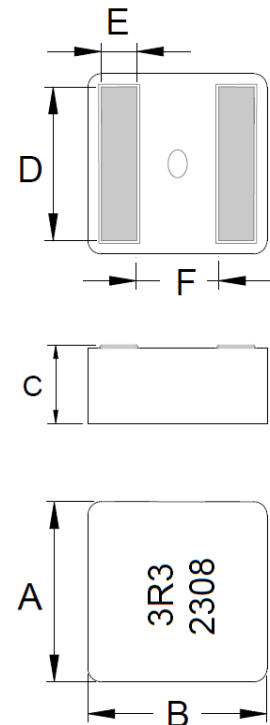


CHARACTERISTICS

| | | | | |
|--|--|--------------|--------------|--------------|
| Series Sizes & Inductance Ranges | NPIM42Z | NPIM42ZD | NPIM43ZD | NPIM52Z |
| | 0.10 ~ 1.8μH | 0.47 ~ 2.2μH | 1.0 ~ 3.3μH | 0.15 ~ 1.5μH |
| | NPIM53Z | NPIM55Z | NPIM63Z | NPIM65Z |
| | 0.15 ~ 4.7μH | 5.6 ~ 8.2μH | 0.18 ~ 4.7μH | 0.82 ~ 4.7μH |
| | NPIM66Z | NPIM73Z | NPIM75Z | NPIM77Z |
| | 1.0 ~ 8.2μH | 0.36 ~ 5.6μH | 2.2 ~ 5.6μH | 2.2 ~ 10.0μH |
| | NPIM1006Z | NPIM1010Z | NPIM1508Z | NPIM1510Z |
| | 1.5 ~ 10.0μH | 3.3 ~ 15μH | 2.0 ~ 22μH | 4.7 ~ 33μH |
| NPIM1513Z | | | | |
| 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% | | | |

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 | | | 2.80±0.20 | | | |
| 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 |
| NPIM55Z | 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 | 6.6 ± 0.2 | 6.4 ± 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 |
| 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 | 4.80 ± 0.2 | See Spec Table | 1.75 ± 0.2 | 3.15 ± 0.25 |
| NPIM77Z | 8.4 ± 0.3 | 8.0 ± 0.3 | 6.70 ± 0.30 | See Spec Table | 1.75 ± 0.2 | 3.15 ± 0.25 |
| 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 I rms (A) | +40C Rise I rms (A) | Isat (A) Max. | Isat (A) Typ. | AEC-Q200 Qualified Part Number |
|-----------------|-----------------------|-------------------------|---------------------|---------------------|---------------|---------------|--------------------------------|
| NPIM42ZR10MTRAF | 0.1 | 2.42 | 13.5 | 18 | 33 | 38 | NPIM42ZR10MTRAQYF |
| NPIM42ZR22MTRAF | 0.22 | 4.6 | 13 | 16.8 | 18.8 | 19.5 | NPIM42ZR22MTRAQYF |
| NPIM42ZR33MTRAF | 0.33 | 5 | 12 | 15.5 | 16.5 | 18 | NPIM42ZR33MTRAQYF |
| NPIM42ZR36MTRAF | 0.36 | 6.3 | 11 | 14.5 | 15 | 17 | NPIM42ZR36MTRAQYF |
| NPIM42ZR40MTRAF | 0.4 | 7.73 | 10 | 14 | 13.5 | 15.5 | NPIM42ZR40MTRAQYF |
| NPIM42ZR47MTRAF | 0.47 | 8.58 | 9.0 | 12.5 | 13 | 14.5 | NPIM42ZR47MTRAQYF |
| NPIM42ZR56MTRAF | 0.56 | 9.3 | 8.5 | 12 | 12.6 | 14 | NPIM42ZR56MTRAQYF |
| NPIM42ZR60MTRAF | 0.6 | 9.52 | 8 | 11.7 | 12.3 | 13.7 | NPIM42ZR60MTRAQYF |
| NPIM42ZR72MTRAF | 0.72 | 11.6 | 7.6 | 10.5 | 10.6 | 12 | NPIM42ZR72MTRAQYF |
| NPIM42Z1R0MTRAF | 1.0 | 14.6 | 6.8 | 9.6 | 8.8 | 9.6 | NPIM42Z1R0MTRAQYF |
| NPIM42Z1R2MTRAF | 1.2 | 17.9 | 6.6 | 9 | 7.8 | 9 | NPIM42Z1R2MTRAQYF |
| NPIM42Z1R5MTRAF | 1.5 | 23.5 | 5.8 | 7.6 | 7.4 | 8 | NPIM42Z1R5MTRAQYF |
| NPIM42Z1R8MTRAF | 1.8 | 28.0 | 5.2 | 7 | 7 | 7.5 | NPIM42Z1R8MTRAQYF |

Maximum +40°C temperature rise at I rms. Approximate -30% inductance change at Isat.

NPIM42ZD 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. | AEC-Q200 Qualified Part Number |
|------------------|-----------------------|-------------------------|---------------------|---------------------|---------------|---------------|--------------------------------|
| NPIM42ZDR47MTRAF | 0.47 | 6.8 | 9.8 | 13.2 | 12.5 | 14 | NPIM42ZDR47MTRAQYF |
| NPIM42ZDR56MTRAF | 0.56 | 7.8 | 9.5 | 12.6 | 11.3 | 13 | NPIM42ZDR56MTRAQYF |
| NPIM42ZDR60MTRAF | 0.6 | 7.8 | 9.4 | 12.4 | 11.1 | 12.8 | NPIM42ZDR60MTRAQYF |
| NPIM42ZDR68MTRAF | 0.68 | 8.2 | 9.2 | 12 | 10 | 11.6 | NPIM42ZDR68MTRAQYF |
| NPIM42ZDR82MTRAF | 0.82 | 9.5 | 8.5 | 11.5 | 9 | 10.2 | NPIM42ZDR82MTRAQYF |
| NPIM42ZD1R0MTRAF | 1.0 | 11.7 | 8 | 11 | 8 | 9.2 | NPIM42ZD1R0MTRAQYF |
| NPIM42ZD1R2MTRAF | 1.2 | 13.4 | 7.2 | 9.5 | 7.5 | 8.6 | NPIM42ZD1R2MTRAQYF |
| NPIM42ZD1R5MTRAF | 1.5 | 15.8 | 6.7 | 9.1 | 6.7 | 7.5 | NPIM42ZD1R5MTRAQYF |
| NPIM42ZD2R0MTRAF | 2.0 | 23.3 | 6.2 | 8.2 | 5 | 6.2 | NPIM42ZD2R0MTRAQYF |
| NPIM42ZD2R2MTRAF | 2.2 | 23.5 | 6 | 8 | 4.8 | 6 | NPIM42ZD2R2MTRAQYF |

Maximum +40°C temperature rise at I rms. Approximate -30% inductance change at Isat.

NPIM43Z 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. | AEC-Q200 Qualified Part Number |
|------------------|-----------------------|-------------------------|---------------------|---------------------|---------------|---------------|--------------------------------|
| NPIM43ZD1R0MTRAF | 1 | 9.1 | 8 | 11 | 9.2 | 9.8 | NPIM43ZD1R0MTRAQYF |
| NPIM43ZD1R2MTRAF | 1.2 | 10.4 | 7.8 | 9.8 | 8.7 | 9.2 | NPIM43ZD1R2MTRAQYF |
| NPIM43ZD1R5MTRAF | 1.5 | 12 | 7 | 9 | 7.0 | 8.0 | NPIM43ZD1R5MTRAQYF |
| NPIM43ZD1R8MTRAF | 1.8 | 17.4 | 6.5 | 8.2 | 6.6 | 7.5 | NPIM43ZD1R8MTRAQYF |
| NPIM43ZD2R2MTRAF | 2.2 | 20.5 | 6 | 7.8 | 6.1 | 7.0 | NPIM43ZD2R2MTRAQYF |
| NPIM43ZD3R3MTRAF | 3.3 | 26 | 5 | 6.6 | 5.3 | 6.2 | NPIM43ZD3R3MTRAQYF |

Maximum +40°C temperature rise at I rms. Approximate -30% inductance change at Isat.

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. | AEC-Q200 Qualified Part Number |
|-----------------|-----------------------|-------------------------|--------------------------------|--------------------------------|---------------|---------------|--------------------------------|
| NPIM52ZR15MTRAF | 0.15 | 4.6 | 13.9 | 18.8 | 27 | 30 | NPIM52ZR15MTRAQYF |
| NPIM52ZR16MTRAF | 0.16 | 4.6 | 13.9 | 18.8 | 27 | 30 | NPIM52ZR16MTRAQYF |
| NPIM52ZR33MTRAF | 0.33 | 7.0 | 10.5 | 14.4 | 24 | 26 | NPIM52ZR33MTRAQYF |
| NPIM52ZR47MTRAF | 0.47 | 8.05 | 10.1 | 14.1 | 20 | 22 | NPIM52ZR47MTRAQYF |
| NPIM52ZR56MTRAF | 0.56 | 9.54 | 9.9 | 13.9 | 16 | 19 | NPIM52ZR56MTRAQYF |
| NPIM52ZR68MTRAF | 0.68 | 10.2 | 9.6 | 13.4 | 14 | 16 | NPIM52ZR68MTRAQYF |
| NPIM52ZR80MTRAF | 0.8 | 11.8 | 9.4 | 13 | 13.5 | 15.5 | NPIM52ZR80MTRAQYF |
| NPIM52ZR82MTRAF | 0.82 | 12.7 | 8.5 | 12 | 13 | 15 | NPIM52ZR82MTRAQYF |
| NPIM52Z1R0MTRAF | 1.0 | 13.8 | 7.5 | 10.5 | 12.8 | 14.5 | NPIM52Z1R0MTRAQYF |
| NPIM52Z1R2MTRAF | 1.2 | 16.3 | 6.8 | 9.4 | 12.2 | 14 | NPIM52Z1R2MTRAQYF |
| NPIM52Z1R5MTRAF | 1.5 | 18.7 | 6.4 | 8.8 | 11.7 | 13.3 | NPIM52Z1R5MTRAQYF |

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.

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. | AEC-Q200 Qualified Part Number |
|-----------------|-----------------------|-------------------------|--------------------------------|--------------------------------|---------------|---------------|--------------------------------|
| NPIM53ZR15MTRAF | 0.15 | 2.31 | 14.3 | 22.2 | 32.5 | 36 | NPIM53ZR15MTRAQYF |
| NPIM53ZR28MTRAF | 0.28 | 3.3 | 14 | 19 | 28 | 32 | NPIM53ZR28MTRAQYF |
| NPIM53ZR33MTRAF | 0.33 | 3.52 | 13.8 | 19.2 | 26 | 28 | NPIM53ZR33MTRAQYF |
| NPIM53ZR47MTRAF | 0.47 | 4.13 | 13.7 | 18.4 | 24 | 26 | NPIM53ZR47MTRAQYF |
| NPIM53ZR56MTRAF | 0.56 | 4.52 | 13.6 | 17.7 | 20.2 | 22.2 | NPIM53ZR56MTRAQYF |
| NPIM53ZR60MTRAF | 0.6 | 4.52 | 13.6 | 17.7 | 20 | 22 | NPIM53ZR60MTRAQYF |
| NPIM53ZR80MTRAF | 0.8 | 5.65 | 10.1 | 13.1 | 18 | 20 | NPIM53ZR80MTRAQYF |
| NPIM53ZR82MTRAF | 0.82 | 5.78 | 9.9 | 12.9 | 17.6 | 19.7 | NPIM53ZR82MTRAQYF |
| NPIM53Z1R0MTRAF | 1.0 | 7.6 | 9.0 | 12.2 | 14.3 | 16.5 | NPIM53Z1R0MTRAQYF |
| NPIM53Z1R2MTRAF | 1.2 | 9.7 | 8.5 | 11 | 13.5 | 15 | NPIM53Z1R2MTRAQYF |
| NPIM53Z1R5MTRAF | 1.5 | 11.2 | 8.0 | 10.5 | 12.5 | 14 | NPIM53Z1R5MTRAQYF |
| NPIM53Z1R8MTRAF | 1.8 | 12.7 | 7.6 | 10.1 | 11.3 | 12.3 | NPIM53Z1R8MTRAQYF |
| NPIM53Z2R2MTRAF | 2.2 | 14.5 | 7.2 | 9.7 | 9 | 10 | NPIM53Z2R2MTRAQYF |
| NPIM53Z3R3MTRAF | 3.3 | 23.1 | 5.9 | 8.1 | 8.7 | 9.5 | NPIM53Z3R3MTRAQYF |
| NPIM53Z4R7MTRAF | 4.7 | 36.3 | 4.3 | 5.9 | 7 | 8.2 | NPIM53Z4R7MTRAQYF |

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.

NPIM55Z 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. | AEC-Q200 Qualified Part Number |
|------------------|-----------------------|-------------------------|--------------------------------|--------------------------------|---------------|---------------|--------------------------------|
| NPIM55ZD4R7MTRAF | 4.7 | 21.0 | 5.9 | 8.1 | 7.40 | 8.80 | NPIM55ZD4R7MTRAQYF |
| NPIM55ZD5R6MTRAF | 5.6 | 24.2 | 5.3 | 7.2 | 7.20 | 8.60 | NPIM55ZD5R6MTRAQYF |
| NPIM55ZD6R8MTRAF | 6.8 | 28.6 | 4.8 | 6.4 | 6.60 | 7.80 | NPIM55ZD6R8MTRAQYF |
| NPIM55ZD8R2MTRAF | 8.2 | 32.5 | 4.6 | 6.1 | 6.10 | 7.20 | NPIM55ZD8R2MTRAQYF |

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.

Performance Passives By Design

NPIM_Z Series

Ultra-High Current Power Inductors



NPIM63Z 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. | C ± 0.2 (mm) | D ± 0.3 (mm) | AEC-Q200 Qualified Part Number |
|-----------------|-----------------------|---------------|---------------------|---------------------|---------------|---------------|--------------|--------------|--------------------------------|
| NPIM63ZR18MTRAF | 0.18 | 1.75 | 24 | 32 | 36 | 40 | 2.8 | 5.30 | NPIM63ZR18MTRAQYF |
| NPIM63ZR33MTRAF | 0.33 | 2.5 | 20 | 25 | 28 | 32 | | 5.55 | NPIM63ZR33MTRAQYF |
| NPIM63ZR56MTRAF | 0.56 | 3.31 | 17 | 22 | 25 | 29 | | 5.30 | NPIM63ZR56MTRAQYF |
| NPIM63ZR68MTRAF | 0.68 | 5.17 | 15 | 20 | 21 | 25 | | 5.30 | NPIM63ZR68MTRAQYF |
| NPIM63Z1R0MTRAF | 1.0 | 6.05 | 13 | 18 | 18 | 23 | | 5.20 | NPIM63Z1R0MTRAQYF |
| NPIM63Z1R2MTRAF | 1.2 | 7.4 | 12 | 16 | 16 | 22 | | 5.15 | NPIM63Z1R2MTRAQYF |
| NPIM63Z1R5MTRAF | 1.5 | 9.13 | 11 | 15 | 15.5 | 20 | 2.9 | 5.15 | NPIM63Z1R5MTRAQYF |
| NPIM63Z1R8MTRAF | 1.8 | 10.2 | 10 | 14 | 13 | 18.2 | | 5.10 | NPIM63Z1R8MTRAQYF |
| NPIM63Z2R2MTRAF | 2.2 | 12.2 | 7 | 10 | 11 | 15.9 | | 5.05 | NPIM63Z2R2MTRAQYF |
| NPIM63Z3R3MTRAF | 3.3 | 20.8 | 6 | 8 | 9 | 12.2 | | 5.00 | NPIM63Z3R3MTRAQYF |
| NPIM63Z4R5MTRAF | 4.5 | 25.3 | 5 | 7 | 8 | 10 | | 5.00 | NPIM63Z4R5MTRAQYF |
| NPIM63Z4R7MTRAF | 4.7 | 29.2 | 4 | 6 | 7 | 9 | | 5.00 | NPIM63Z4R7MTRAQYF |

Maximum +40°C temperature rise at I rms. Approximate -30% inductance change at Isat.

NPIM65Z 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. | D ± 0.3 (mm) | AEC-Q200 Qualified Part Number |
|-----------------|-----------------------|---------------|---------------------|---------------------|---------------|---------------|--------------|--------------------------------|
| NPIM65ZR82MTRAF | 0.82 | 4.18 | 16 | 21 | 20 | 24 | 5.3 | NPIM65ZR82MTRAQYF |
| NPIM65Z1R0MTRAF | 1.0 | 4.52 | 15 | 20 | 18 | 23 | | NPIM65Z1R0MTRAQYF |
| NPIM65Z1R2MTRAF | 1.2 | 5.83 | 14 | 18 | 16 | 22 | | NPIM65Z1R2MTRAQYF |
| NPIM65Z1R5MTRAF | 1.5 | 6.3 | 13 | 17 | 14.5 | 19.5 | | NPIM65Z1R5MTRAQYF |
| NPIM65Z1R8MTRAF | 1.8 | 7.1 | 12 | 16 | 13.5 | 18.5 | | NPIM65Z1R8MTRAQYF |
| NPIM65Z2R2MTRAF | 2.2 | 8.5 | 10 | 13 | 12 | 16 | 5.2 | NPIM65Z2R2MTRAQYF |
| NPIM65Z3R3MTRAF | 3.3 | 12.5 | 8.5 | 11 | 10 | 12.5 | | NPIM65Z3R3MTRAQYF |
| NPIM65Z4R3MTRAF | 4.3 | 16.2 | 7 | 9 | 8.5 | 11 | | NPIM65Z4R3MTRAQYF |
| NPIM65Z4R7MTRAF | 4.7 | 18.4 | 6.5 | 8.5 | 8.4 | 10.5 | | NPIM65Z4R7MTRAQYF |
| NPIM65Z5R6MTRAF | 5.6 | 22 | 5.7 | 7 | 8.3 | 10 | | NPIM65Z5R6MTRAQYF |
| NPIM65Z6R8MTRAF | 6.8 | 25.4 | 5.2 | 6.6 | 7 | 9 | | NPIM65Z6R8MTRAQYF |
| NPIM65Z8R2MTRAF | 8.2 | 31.5 | 4.5 | 6.2 | 6.8 | 8 | | NPIM65Z8R2MTRAQYF |

Maximum +40°C temperature rise at I rms. Approximate -30% inductance change at Isat.

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. | AEC-Q200 Qualified Part Number |
|------------------|-----------------------|-------------------------|---------------------|---------------------|---------------|---------------|--------------------------------|
| NPIM66ZD1R0MTRAF | 1 | 4.29 | 15 | 19 | 16 | 18 | NPIM66ZD1R0MTRAQYF |
| NPIM66ZD1R5MTRAF | 1.5 | 5.61 | 13 | 16 | 14 | 16 | NPIM66ZD1R5MTRAQYF |
| NPIM66ZD2R2MTRAF | 2.2 | 7.8 | 11 | 14 | 12 | 14 | NPIM66ZD2R2MTRAQYF |
| NPIM66ZD3R3MTRAF | 3.3 | 12.1 | 9 | 12 | 10.5 | 11.5 | NPIM66ZD3R3MTRAQYF |
| NPIM66ZD4R7MTRAF | 4.7 | 14.4 | 8 | 11 | 9.5 | 10.5 | NPIM66ZD4R7MTRAQYF |
| NPIM66ZD5R6MTRAF | 5.6 | 15.8 | 7.5 | 10 | 9 | 10 | NPIM66ZD5R6MTRAQYF |
| NPIM66ZD6R8MTRAF | 6.8 | 20.8 | 7 | 9 | 8.7 | 9.2 | NPIM66ZD6R8MTRAQYF |
| NPIM66ZD8R2MTRAF | 8.2 | 24.8 | 6 | 8 | 8 | 8.5 | NPIM66ZD8R2MTRAQYF |

Maximum +40°C temperature rise at I rms. Approximate -30% inductance change at Isat.

Performance Passives By Design

NPIM_Z Series

Ultra-High Current Power Inductors



NPIM73Z Values

| Part Number | Inductance Value (μ H) | DCR (m Ω) max. | +20C Rise Irms (A) | +40C Rise Irms (A) | Isat (A) Max. | Isat (A) Typ. | D \pm 0.3 (mm) | AEC-Q200 Qualified Part Number |
|-----------------|-----------------------------|------------------------|--------------------|--------------------|---------------|---------------|------------------|--------------------------------|
| NPIM73ZR36MTRAF | 0.36 | 2.31 | 19 | 24 | 37 | 41 | 6.6 | NPIM73ZR36MTRAQYF |
| NPIM73ZR60MTRAF | 0.6 | 3.2 | 18 | 23 | 32 | 36 | | NPIM73ZR60MTRAQYF |
| NPIM73Z1R0MTRAF | 1 | 5 | 16.1 | 21.8 | 28 | 30 | | NPIM73Z1R0MTRAQYF |
| NPIM73Z1R5MTRAF | 1.5 | 8.25 | 12 | 15.3 | 23.5 | 25 | | NPIM73Z1R5MTRAQYF |
| NPIM73Z2R2MTRAF | 2.2 | 13.7 | 10 | 13 | 17 | 19 | | NPIM73Z2R2MTRAQYF |
| NPIM73Z2R7MTRAF | 2.7 | 15.4 | 9.2 | 11.4 | 13.5 | 16 | 6.2 | NPIM73Z2R7MTRAQYF |
| NPIM73Z3R3MTRAF | 3.3 | 18 | 8 | 10 | 13 | 15 | | NPIM73Z3R3MTRAQYF |
| NPIM73Z4R7MTRAF | 4.7 | 26.7 | 6.9 | 9 | 12.2 | 13.5 | | NPIM73Z4R7MTRAQYF |
| NPIM73Z5R6MTRAF | 5.6 | 33.2 | 5.3 | 7.3 | 11.5 | 12.5 | | NPIM73Z5R6MTRAQYF |

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.

NPIM75Z Values

| Part Number | Inductance Value (μ H) | DCR (m Ω) max. | +20C Rise Irms (A) | +40C Rise Irms (A) | Isat (A) Max. | Isat (A) Typ. | D \pm 0.3 (mm) | AEC-Q200 Qualified Part Number |
|-----------------|-----------------------------|------------------------|--------------------|--------------------|---------------|---------------|------------------|--------------------------------|
| NPIM75Z1R8MTRAF | 1.8 | 4.62 | 13.0 | 16.0 | 21 | 25 | 6.5 | NPIM75Z1R8MTRAQYF |
| NPIM75Z2R2MTRAF | 2.2 | 6.4 | 11.0 | 14.0 | 17.0 | 21.0 | 6.2 | NPIM75Z2R2MTRAQYF |
| NPIM75Z3R3MTRAF | 3.3 | 11.4 | 10.0 | 13.0 | 14.0 | 17.0 | | NPIM75Z3R3MTRAQYF |
| NPIM75Z4R7MTRAF | 4.7 | 15.4 | 8.5 | 11.0 | 13.0 | 15.0 | | NPIM75Z4R7MTRAQYF |
| NPIM75Z5R6MTRAF | 5.6 | 17.2 | 7.0 | 10.0 | 11.0 | 13.0 | | NPIM75Z5R6MTRAQYF |

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.

NPIM77Z Values

| Part Number | Inductance Value (μ H) | DCR (m Ω) max. | +20C Rise Irms (A) | +40C Rise Irms (A) | Isat (A) Max. | Isat (A) Typ. | D \pm 0.3 (mm) | AEC-Q200 Qualified Part Number |
|-----------------|-----------------------------|------------------------|--------------------|--------------------|---------------|---------------|------------------|--------------------------------|
| NPIM77Z2R2MTRAF | 2.2 | 6.33 | 13.2 | 17.8 | 17.6 | 19.6 | 6.7 | NPIM77Z2R2MTRAQYF |
| NPIM77Z3R3MTRAF | 3.3 | 9.42 | 11.5 | 15.1 | 15.1 | 19.4 | | NPIM77Z3R3MTRAQYF |
| NPIM77Z4R7MTRAF | 4.7 | 13.5 | 10.5 | 13.6 | 14.0 | 15.5 | | NPIM77Z4R7MTRAQYF |
| NPIM77Z5R6MTRAF | 5.6 | 15.03 | 8.5 | 11.4 | 12.0 | 14.1 | 6.5 | NPIM77Z5R6MTRAQYF |
| NPIM77Z6R8MTRAF | 6.8 | 19.6 | 7.0 | 9.5 | 11.0 | 12.8 | | NPIM77Z6R8MTRAQYF |
| NPIM77Z100MTRAF | 10.0 | 26.4 | 5.0 | 7.0 | 9.0 | 10.0 | | NPIM77Z100MTRAQYF |

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.

NPIM1006Z Values

| Part Number | Inductance Value (μ H) | DCR (m Ω) max. | +20C Rise Irms (A) | +40C Rise Irms (A) | Isat (A) Max. | Isat (A) Typ. | D \pm 0.5 (mm) | AEC-Q200 Qualified Part Number |
|-------------------|-----------------------------|------------------------|--------------------|--------------------|---------------|---------------|------------------|--------------------------------|
| NPIM1006Z2R2MTRAF | 2.2 | 4.84 | 14.0 | 20.0 | 30.0 | 35.0 | 9.0 | NPIM1006Z2R2MTRAQYF |
| NPIM1006Z3R3MTRAF | 3.3 | 7.7 | 11.4 | 16.8 | 25.0 | 28.0 | | NPIM1006Z3R3MTRAQYF |
| NPIM1006Z4R7MTRAF | 4.7 | 10.72 | 8.7 | 14.0 | 22.0 | 25.0 | | NPIM1006Z4R7MTRAQYF |
| NPIM1006Z5R6MTRAF | 5.6 | 11.9 | 7.0 | 12.0 | 17.0 | 20.0 | 8.8 | NPIM1006Z5R6MTRAQYF |
| NPIM1006Z6R8MTRAF | 6.8 | 13.0 | 6.0 | 10.5 | 15.5 | 18.0 | | NPIM1006Z6R8MTRAQYF |
| NPIM1006Z8R2MTRAF | 8.2 | 16.5 | 5.0 | 9.5 | 14.0 | 16.5 | | NPIM1006Z8R2MTRAQYF |
| NPIM1006Z100MTRAF | 10.0 | 18.2 | 4.5 | 9.0 | 13.0 | 15.0 | | NPIM1006Z100MTRAQYF |

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.

NPIM_Z Series

Ultra-High Current Power Inductors



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. | D ±0.3 (mm) | AEC-Q200 Qualified Part Number |
|-------------------|-----------------------|---------------|--------------------------------|--------------------------------|---------------|---------------|-------------|--------------------------------|
| NPIM1010Z3R3MTRAF | 3.3 | 4.1 | 18.2 | 25 | 23.4 | 27.4 | 9.3 | NPIM1010Z3R3MTRAQYF |
| NPIM1010Z4R7MTRAF | 4.7 | 5.7 | 17.5 | 24 | 21.4 | 25.4 | | NPIM1010Z4R7MTRAQYF |
| NPIM1010Z5R6MTRAF | 5.6 | 7.2 | 15.7 | 21.2 | 19.6 | 23.6 | | NPIM1010Z5R6MTRAQYF |
| NPIM1010Z6R8MTRAF | 6.8 | 8.9 | 14 | 18.5 | 18.5 | 21.8 | 9.0 | NPIM1010Z6R8MTRAQYF |
| NPIM1010Z8R2MTRAF | 8.2 | 12.4 | 12.9 | 17.1 | 16.3 | 18.3 | | NPIM1010Z8R2MTRAQYF |
| NPIM1010Z100MTRAF | 10 | 13.75 | 11.5 | 15.5 | 14.6 | 17.5 | | NPIM1010Z100MTRAQYF |
| NPIM1010Z150MTRAF | 15 | 19.3 | 9.9 | 13.8 | 12.5 | 15.5 | | NPIM1010Z150MTRAQYF |

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.

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. | AEC-Q200 Qualified Part Number |
|-------------------|-----------------------|---------------|--------------------------------|--------------------------------|---------------|---------------|--------------------------------|
| NPIM1508Z2R0MTRAF | 2.0 | 2.21 | 29.5 | 40 | 52 | 57 | NPIM1508Z2R0MTRAQYF |
| NPIM1508Z2R2MTRAF | 2.2 | 2.48 | 28 | 37 | 49 | 55 | NPIM1508Z2R2MTRAQYF |
| NPIM1508Z3R0MTRAF | 3.0 | 3.0 | 26 | 34.5 | 41 | 46 | NPIM1508Z3R0MTRAQYF |
| NPIM1508Z4R2MTRAF | 4.2 | 4.68 | 20.5 | 27 | 33 | 38 | NPIM1508Z4R2MTRAQYF |
| NPIM1508Z4R7MTRAF | 4.7 | 5.16 | 20 | 26.5 | 32 | 37 | NPIM1508Z4R7MTRAQYF |
| NPIM1508Z5R3MTRAF | 5.3 | 5.34 | 19.5 | 26 | 31 | 35 | NPIM1508Z5R3MTRAQYF |
| NPIM1508Z6R2MTRAF | 6.2 | 6.5 | 17 | 23 | 31 | 34 | NPIM1508Z6R2MTRAQYF |
| NPIM1508Z7R2MTRAF | 7.2 | 7.2 | 15 | 21 | 29 | 32 | NPIM1508Z7R2MTRAQYF |
| NPIM1508Z8R2MTRAF | 8.2 | 7.92 | 13 | 19 | 25 | 28 | NPIM1508Z8R2MTRAQYF |
| NPIM1508Z100MTRAF | 10 | 9.6 | 11 | 16 | 21 | 24 | NPIM1508Z100MTRAQYF |
| NPIM1508Z150MTRAF | 15 | 15 | 10 | 13 | 18 | 21 | NPIM1508Z150MTRAQYF |
| NPIM1508Z200MTRAF | 22 | 23.2 | 9 | 12 | 16 | 19 | NPIM1508Z200MTRAQYF |

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.

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. | AEC-Q200 Qualified Part Number |
|-------------------|-----------------------|---------------|--------------------------------|--------------------------------|---------------|---------------|--------------------------------|
| NPIM1510Z4R7MTRAF | 4.7 | 3.8 | 22 | 30 | 39.0 | 43.0 | NPIM1510Z4R7MTRAQYF |
| NPIM1510Z5R6MTRAF | 5.6 | 4.2 | 21 | 28 | 34.0 | 38.0 | NPIM1510Z5R6MTRAQYF |
| NPIM1510Z6R8MTRAF | 6.8 | 4.6 | 20 | 26 | 31.0 | 36.0 | NPIM1510Z6R8MTRAQYF |
| NPIM1510Z8R2MTRAF | 8.2 | 7.2 | 19 | 25 | 28.0 | 32.0 | NPIM1510Z8R2MTRAQYF |
| NPIM1510Z100MTRAF | 10.0 | 8.6 | 18 | 24 | 26.0 | 29.0 | NPIM1510Z100MTRAQYF |
| NPIM1510Z150MTRAF | 15.0 | 11.5 | 14 | 18 | 20.0 | 23.0 | NPIM1510Z150MTRAQYF |
| NPIM1510Z220MTRAF | 22.0 | 15.8 | 11 | 16 | 18.0 | 20.0 | NPIM1510Z220MTRAQYF |
| NPIM1510Z330MTRAF | 33.0 | 20.0 | 9 | 13 | 16.7 | 18.7 | NPIM1510Z330MTRAQYF |

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.

NPIM_Z Series

Ultra-High Current Power Inductors

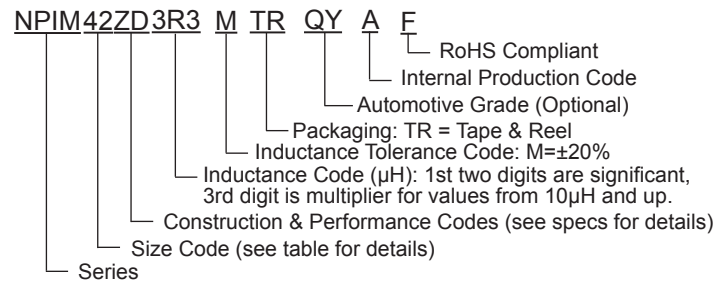


NPIM1513Z Values

| Part Number | Inductance Value (μH) | DCR ($\text{m}\Omega$) max. | +20C Rise I _{rms} (A) | +40C Rise I _{rms} (A) | Isat (A) Max. | Isat (A) Typ. | AEC-Q200 Qualified Part Number |
|-------------------|------------------------------------|-------------------------------|--------------------------------|--------------------------------|---------------|---------------|--------------------------------|
| NPIM1513Z4R7MTRAF | 4.7 | 3.3 | 23 | 31 | 40 | 44 | NPIM1513Z4R7MTRAQYF |
| NPIM1513Z5R6MTRAF | 5.6 | 3.9 | 22 | 29 | 35 | 40 | NPIM1513Z5R6MTRAQYF |
| NPIM1513Z6R8MTRAF | 6.8 | 4.2 | 21 | 27 | 32 | 37 | NPIM1513Z6R8MTRAQYF |
| NPIM1513Z8R2MTRAF | 8.2 | 5.74 | 20 | 26 | 29 | 33 | NPIM1513Z8R2MTRAQYF |
| NPIM1513Z100MTRAF | 10 | 7 | 19 | 25 | 27 | 30 | NPIM1513Z100MTRAQYF |
| NPIM1513Z150MTRAF | 15 | 7.5 | 16 | 22 | 21 | 25.5 | NPIM1513Z150MTRAQYF |
| NPIM1513Z220MTRAF | 22 | 13.86 | 12 | 17 | 19 | 22 | NPIM1513Z220MTRAQYF |
| NPIM1513Z330MTRAF | 33 | 22.2 | 9 | 14 | 16 | 19 | NPIM1513Z330MTRAQYF |

Maximum +40°C temperature rise at I_{rms}. Approximate -30% inductance change at Isat.

PART NUMBER SYSTEM



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

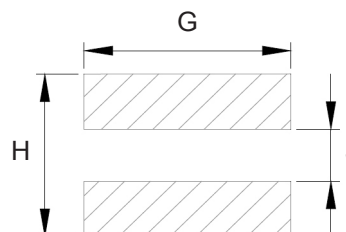
NPIM_Z Series

Ultra-High Current Power Inductors



LAND PATTERNS (mm)

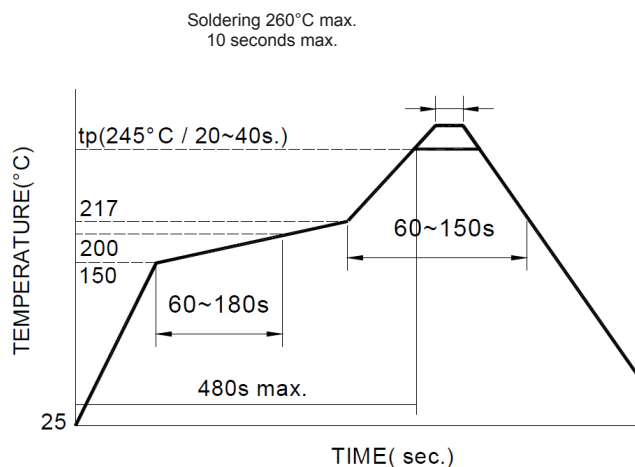
| Series | G | H | J |
|-----------|----------|----------|---------|
| NPIM42Z | 3.8 ref | 3.4 ref | 1.4 ref |
| NPIM42ZD | | | |
| NPIM43ZD | | | |
| NPIM52Z | 4.7 ref | 4.5 ref | 2.0 ref |
| NPIM53Z | 4.7 ref | 4.5 ref | 2.0 ref |
| NPIM55Z | 4.7 ref | 4.5 ref | 2.0 ref |
| NPIM63Z | 5.6 ref | 5.6 ref | 2.5 ref |
| NPIM65Z | 5.6 ref | 5.6 ref | 2.5 ref |
| NPIM66Z | 5.6 ref | 5.6 ref | 2.5 ref |
| NPIM73Z | 7.2 ref | 7.4 ref | 2.8 ref |
| NPIM75Z | 7.2 ref | 7.4 ref | 2.8 ref |
| NPIM77Z | 6.7 ref | 7.8 ref | 2.8 ref |
| NPIM1006Z | 11.0 ref | 10.5 ref | 3.7 ref |
| 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



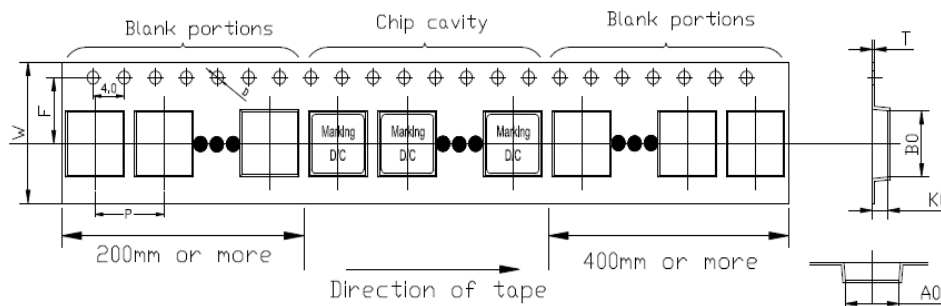
NPIM_Z Series

Ultra-High Current Power Inductors



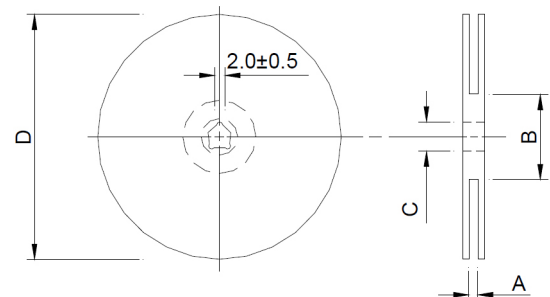
TAPING DIMENSIONS (mm)

| 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 |
| NPIM43Z(D) | 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 |
| NPIM55Z | 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 | 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 |
| 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 |
| 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 |



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 | | | |
| NPIM43Z(D) | | | | | 2,000 | | | |
| NPIM52Z | | | | | 3,000 | | | |
| NPIM53Z | 2,000 | | | | | | | |
| NPIM55Z | 1,500 | | | | | | | |
| NPIM63Z | 1,000 | | | | | | | |
| NPIM65Z | 800 | | | | | | | |
| NPIM66Z | 750 | | | | | | | |
| NPIM73Z | 1,500 | | | | | | | |
| NPIM75Z | 800 | | | | | | | |
| NPIM77Z | 700 | | | | | | | |
| NPIM1006Z | 24.4 +2/-0 | | | | 100 ± 2.0 | 13.0 +0.5/-0.2 | 330 | 500 |
| NPIM1010Z | | 300 | | | | | | |
| NPIM1508Z | 32.4 +2/-0 | 100 ± 2.0 | 13.0 +0.5/-0.2 | 330 | | | | 200 |
| NPIM1510Z | | | | | | | | 150 |
| NPIM1513Z | | | | | | | | 100 |



Performance Passives By Design