

FEATURES

- SHIELDED POWER INDUCTOR
- ULTRA LOW PROFILE (1.0 ~ 4.5mm MAX. HEIGHT)
- SURFACE MOUNTABLE CONSTRUCTION
- INDUCTANCE VALUES UP TO 220 μ H
- TAPED AND REELED FOR AUTOMATIC INSERTION

New!

**RoHS
Compliant**

includes all homogeneous materials



*See Part Number System for Details

CHARACTERISTICS

| Case Size | NPIS30L | NPIS32L | NPIS35L | NPIS40L | NPIS42L | NPIS48L | NPIS62L | NPIS60L | NPIS65L | NPIS80L |
|---------------------------------------|----------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|------------------|-------------------|-------------------|
| Inductance Range | 1.0 ~ 47 μ H | 1.0 ~ 47 μ H | 1.0 ~ 47 μ H | 1.0 ~ 47 μ H | 1.0 ~ 47 μ H | 1.0 ~ 220 μ H | 2.5 ~ 100 μ H | 0.8 ~ 10 μ H | 1.0 ~ 100 μ H | 0.9 ~ 100 μ H |
| Temperature Range | -25°C ~ +120°C* | | | | | | | | | |
| Temperature Rise at I _{rms} | +40°C max. | | | | | | | | | |
| Inductance Change at I _{sat} | - 30% max. | | | | | | | | | |
| Inductance Tolerance | ±20% (M), ±30% (Y) | | | | | | | | | |
| Resistance to Solder Heat | 255°C for 10 seconds | | | | | | | | | |

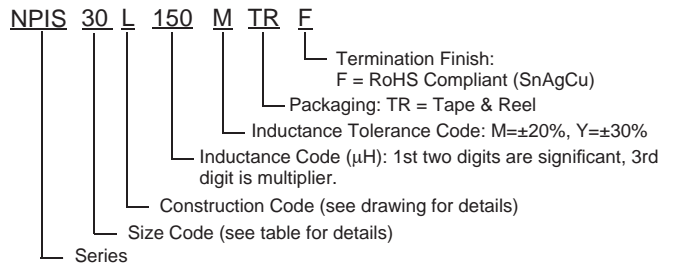
*Ambient plus temperature rise

DIMENSIONS (mm)

| Case Size | L | W | H max. | e | e Δ | f |
|-----------|-----------|-----------|--------|------------|------------|-----------|
| NPIS30L | 3.0 ± 0.1 | 3.0 ± 0.1 | 1.0 | 0.9 ± 0.2 | - | 1.9 ± 0.2 |
| NPIS32L | 3.0 ± 0.1 | 3.0 ± 0.1 | 1.2 | | - | |
| NPIS35L | 3.0 ± 0.1 | 3.0 ± 0.1 | 1.5 | | - | |
| NPIS40L | 4.0 ± 0.2 | 4.0 ± 0.2 | 1.0 | 1.1 ± 0.2 | - | 2.5 ± 0.2 |
| NPIS42L | 4.0 ± 0.2 | 4.0 ± 0.2 | 1.2 | | - | |
| NPIS48L | 4.0 ± 0.2 | 4.0 ± 0.2 | 1.8 | | - | |
| NPIS62L | 6.0 ± 0.2 | 6.0 ± 0.2 | 1.2 | 1.35 ± 0.2 | 0.3 ± 0.2 | 4.0 ± 0.2 |
| NPIS60L | 6.0 ± 0.2 | 6.0 ± 0.2 | 2.0 | | | |
| NPIS65L | 6.0 ± 0.2 | 6.0 ± 0.2 | 4.5 | | | |
| NPIS80L | 8.0 ± 0.2 | 8.0 ± 0.2 | 4.0* | 1.6 ± 0.3 | - | 5.6 ± 0.3 |

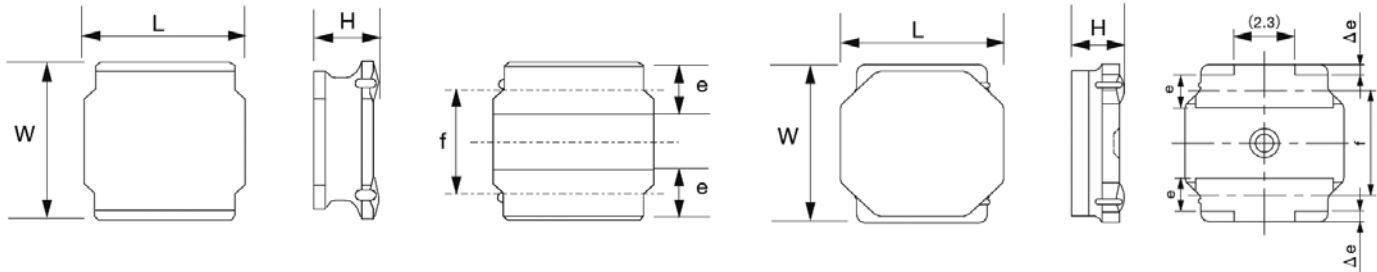
*NPIS80L 0.9 μ H - 6R8 μ H is 4.2mm height

PART NUMBER SYSTEM



NPIS30L, 32L, 35L, 40L, 42L, 48L & 80L

NPIS62, 60L & 65L



| Part Number | STANDARD VALUES - CASE SIZE (3.0 x 3.0 x 1.0mm) | | | | Test Frequency |
|----------------|---|---------------------------------|------------------------------------|------------------------------------|----------------|
| | Inductance Value (μ H) | DC Resistance (Ω) ±20% | DC Current I _{sat} (Amps) | DC Current I _{rms} (Amps) | |
| NPIS30L1R0YTRF | 1.0 ± 30% | 0.065 | 1.30 | 1.40 | 100KHz |
| NPIS30L1R5YTRF | 1.5 ± 30% | 0.080 | 1.20 | 1.30 | |
| NPIS30L2R2MTRF | 2.2 ± 20% | 0.095 | 1.10 | 1.10 | |
| NPIS30L3R3MTRF | 3.3 ± 20% | 0.14 | 0.87 | 0.94 | |
| NPIS30L4R7MTRF | 4.7 ± 20% | 0.19 | 0.75 | 0.78 | |
| NPIS30L6R8MTRF | 6.8 ± 20% | 0.30 | 0.61 | 0.63 | |
| NPIS30L100MTRF | 10 ± 20% | 0.45 | 0.50 | 0.51 | |
| NPIS30L150MTRF | 15 ± 20% | 0.74 | 0.40 | 0.40 | |
| NPIS30L220MTRF | 22 ± 20% | 1.03 | 0.35 | 0.35 | |
| NPIS30L330MTRF | 33 ± 20% | 1.55 | 0.26 | 0.275 | |
| NPIS30L470MTRF | 47 ± 20% | 2.05 | 0.22 | 0.235 | |

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



| Part Number | STANDARD VALUES - CASE SIZE 30 (3.0 x 3.0 x 1.2mm) | | | | Test Frequency |
|----------------|--|------------------------|------------------------|------------------------|----------------|
| | Inductance Value (μH) | DC Resistance (Ω) ±20% | DC Current Isat (Amps) | DC Current Irms (Amps) | |
| NPIS32L1R0YTRF | 1.0 ± 30% | 0.05 | 1.50 | 1.49 | 100KHz |
| NPIS32L1R5YTRF | 1.5 ± 30% | 0.06 | 1.36 | 1.40 | |
| NPIS32L2R2MTRF | 2.2 ± 20% | 0.08 | 1.10 | 1.20 | |
| NPIS32L3R3MTRF | 3.3 ± 20% | 0.10 | 0.91 | 1.05 | |
| NPIS32L4R7MTRF | 4.7 ± 20% | 0.13 | 0.77 | 0.98 | |
| NPIS32L6R8MTRF | 6.8 ± 20% | 0.19 | 0.67 | 0.74 | |
| NPIS32L100MTRF | 10 ± 20% | 0.29 | 0.54 | 0.63 | |
| NPIS32L150MTRF | 15 ± 20% | 0.45 | 0.44 | 0.485 | |
| NPIS32L220MTRF | 22 ± 20% | 0.63 | 0.375 | 0.42 | |
| NPIS32L330MTRF | 33 ± 20% | 1.03 | 0.31 | 0.33 | |
| NPIS32L470MTRF | 47 ± 20% | 1.45 | 0.25 | 0.28 | |

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

| Part Number | STANDARD VALUES - CASE SIZE (3.0 x 3.0 x 1.5mm) | | | | Test Frequency |
|----------------|---|------------------------|------------------------|------------------------|----------------|
| | Inductance Value (μH) | DC Resistance (Ω) ±20% | DC Current Isat (Amps) | DC Current Irms (Amps) | |
| NPIS35L1R0YTRF | 1.0 ± 30% | 0.03 | 2.10 | 2.10 | 100KHz |
| NPIS35L1R5YTRF | 1.5 ± 30% | 0.04 | 1.80 | 1.82 | |
| NPIS35L2R2MTRF | 2.2 ± 20% | 0.06 | 1.48 | 1.50 | |
| NPIS35L3R3MTRF | 3.3 ± 20% | 0.08 | 1.21 | 1.23 | |
| NPIS35L4R7MTRF | 4.7 ± 20% | 0.12 | 1.02 | 1.04 | |
| NPIS35L6R8MTRF | 6.8 ± 20% | 0.16 | 0.87 | 0.88 | |
| NPIS35L100MTRF | 10 ± 20% | 0.23 | 0.70 | 0.71 | |
| NPIS35L150MTRF | 15 ± 20% | 0.36 | 0.56 | 0.56 | |
| NPIS35L220MTRF | 22 ± 20% | 0.52 | 0.47 | 0.47 | |
| NPIS35L330MTRF | 33 ± 20% | 0.84 | 0.39 | 0.37 | |
| NPIS35L470MTRF | 47 ± 20% | 1.34 | 0.32 | 0.30 | |

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

| Part Number | STANDARD VALUES - CASE SIZE (4.0 x 4.0 x 1.0mm) | | | | Test Frequency |
|----------------|---|------------------------|------------------------|------------------------|----------------|
| | Inductance Value (μH) | DC Resistance (Ω) ±20% | DC Current Isat (Amps) | DC Current Irms (Amps) | |
| NPIS40L1R0YTRF | 1.0 ± 30% | 0.10 | 1.80 | 1.05 | 100KHz |
| NPIS40L2R2YTRF | 2.2 ± 30% | 0.15 | 1.15 | 0.89 | |
| NPIS40L3R3MTRF | 3.3 ± 20% | 0.18 | 1.10 | 0.82 | |
| NPIS40L4R7MTRF | 4.7 ± 20% | 0.21 | 0.90 | 0.75 | |
| NPIS40L6R8MTRF | 6.8 ± 20% | 0.30 | 0.74 | 0.62 | |
| NPIS40L100MTRF | 10 ± 20% | 0.38 | 0.56 | 0.60 | |
| NPIS40L150MTRF | 15 ± 20% | 0.51 | 0.47 | 0.51 | |
| NPIS40L220MTRF | 22 ± 20% | 0.87 | 0.36 | 0.40 | |
| NPIS40L330MTRF | 33 ± 20% | 1.54 | 0.28 | 0.30 | |
| NPIS40L470MTRF | 47 ± 20% | 1.81 | 0.24 | 0.28 | |

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

| Part Number | STANDARD VALUES - CASE SIZE (4.0 x 4.0 x 1.2mm) | | | | Test Frequency |
|----------------|---|------------------------|------------------------|------------------------|----------------|
| | Inductance Value (μH) | DC Resistance (Ω) ±20% | DC Current Isat (Amps) | DC Current Irms (Amps) | |
| NPIS42L1R0YTRF | 1.0 ± 30% | 0.06 | 2.50 | 1.50 | 100KHz |
| NPIS42L2R2MTRF | 2.2 ± 20% | 0.09 | 1.65 | 1.20 | |
| NPIS42L3R3MTRF | 3.3 ± 20% | 0.13 | 1.20 | 0.98 | |
| NPIS42L4R7MTRF | 4.7 ± 20% | 0.14 | 1.05 | 0.96 | |
| NPIS42L6R8MTRF | 6.8 ± 20% | 0.18 | 0.90 | 0.84 | |
| NPIS42L100MTRF | 10 ± 20% | 0.24 | 0.74 | 0.77 | |
| NPIS42L150MTRF | 15 ± 20% | 0.40 | 0.56 | 0.60 | |
| NPIS42L220MTRF | 22 ± 20% | 0.48 | 0.51 | 0.54 | |
| NPIS42L330MTRF | 33 ± 20% | 0.81 | 0.40 | 0.42 | |
| NPIS42L470MTRF | 47 ± 20% | 1.00 | 0.35 | 0.37 | |

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

| Part Number | STANDARD VALUES - CASE SIZE (4.0 x 4.0 x 1.8mm) | | | | Test Frequency |
|----------------|---|------------------------|------------------------|------------------------|----------------|
| | Inductance Value (μH) | DC Resistance (Ω) ±20% | DC Current Isat (Amps) | DC Current Irms (Amps) | |
| NPIS48L1R0YTRF | 1.0 ± 30% | 0.03 | 4.00 | 1.83 | 100KHz |
| NPIS48L2R2MTRF | 2.2 ± 20% | 0.06 | 2.70 | 1.44 | |
| NPIS48L3R3MTRF | 3.3 ± 20% | 0.07 | 2.00 | 1.23 | |
| NPIS48L4R7MTRF | 4.7 ± 20% | 0.09 | 1.70 | 1.20 | |
| NPIS48L6R8MTRF | 6.8 ± 20% | 0.11 | 1.45 | 1.06 | |
| NPIS48L100MTRF | 10 ± 20% | 0.18 | 1.20 | 0.84 | |
| NPIS48L150MTRF | 15 ± 20% | 0.25 | 0.94 | 0.65 | |
| NPIS48L220MTRF | 22 ± 20% | 0.36 | 0.80 | 0.59 | |
| NPIS48L330MTRF | 33 ± 20% | 0.53 | 0.65 | 0.49 | |
| NPIS48L470MTRF | 47 ± 20% | 0.65 | 0.57 | 0.42 | |
| NPIS48L680MTRF | 68 ± 20% | 1.00 | 0.47 | 0.32 | |
| NPIS48L101MTRF | 100 ± 20% | 1.50 | 0.40 | 0.27 | |
| NPIS48L151MTRF | 150 ± 20% | 2.50 | 0.31 | 0.22 | |
| NPIS48L221MTRF | 220 ± 20% | 4.00 | 0.27 | 0.17 | |

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

| Part Number | STANDARD VALUES - CASE SIZE (6.0 x 6.0 x 1.2mm) | | | | Test Frequency |
|----------------|---|------------------------|------------------------|------------------------|----------------|
| | Inductance Value (μH) | DC Resistance (Ω) ±20% | DC Current Isat (Amps) | DC Current Irms (Amps) | |
| NPIS62L2R5YTRF | 2.5 ± 30% | 0.09 | 2.10 | 1.73 | 100KHz |
| NPIS62L4R0YTRF | 4.0 ± 30% | 0.105 | 1.80 | 1.57 | |
| NPIS62L5R3MTRF | 5.3 ± 20% | 0.110 | 1.50 | 1.40 | |
| NPIS62L6R8MTRF | 6.8 ± 20% | 0.165 | 1.30 | 1.18 | |
| NPIS62L100MTRF | 10 ± 20% | 0.235 | 1.00 | 1.00 | |
| NPIS62L150MTRF | 15 ± 20% | 0.33 | 0.80 | 0.79 | |
| NPIS62L220MTRF | 22 ± 20% | 0.53 | 0.76 | 0.63 | |
| NPIS62L330MTRF | 33 ± 20% | 0.70 | 0.59 | 0.53 | |
| NPIS62L470MTRF | 47 ± 20% | 1.05 | 0.52 | 0.46 | |
| NPIS62L680MTRF | 68 ± 20% | 1.35 | 0.44 | 0.41 | |
| NPIS62L101MTRF | 100 ± 20% | 2.18 | 0.35 | 0.32 | |

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

| Part Number | STANDARD VALUES - CASE SIZE (6.0 x 6.0 x 2.0mm) | | | | |
|----------------|---|------------------------|------------------------|------------------------|----------------|
| | Inductance Value (μH) | DC Resistance (Ω) ±30% | DC Current Isat (Amps) | DC Current Irms (Amps) | Test Frequency |
| NPIS60L0R8YTRF | 0.8 ± 30% | 0.02 | 5.50 | 3.80 | 100KHz |
| NPIS60L1R5YTRF | 1.5 ± 30% | 0.026 | 4.00 | 3.20 | |
| NPIS60L2R2YTRF | 2.2 ± 30% | 0.034 | 3.20 | 2.70 | |
| NPIS60L3R3YTRF | 3.3 ± 30% | 0.040 | 2.80 | 2.60 | |
| NPIS60L4R7YTRF | 4.7 ± 30% | 0.058 | 2.40 | 2.00 | |
| NPIS60L6R8YTRF | 6.8 ± 30% | 0.085 | 2.00 | 1.80 | |
| NPIS60L100MTRF | 10 ± 20% | 0.125 | 1.70 | 1.40 | |

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

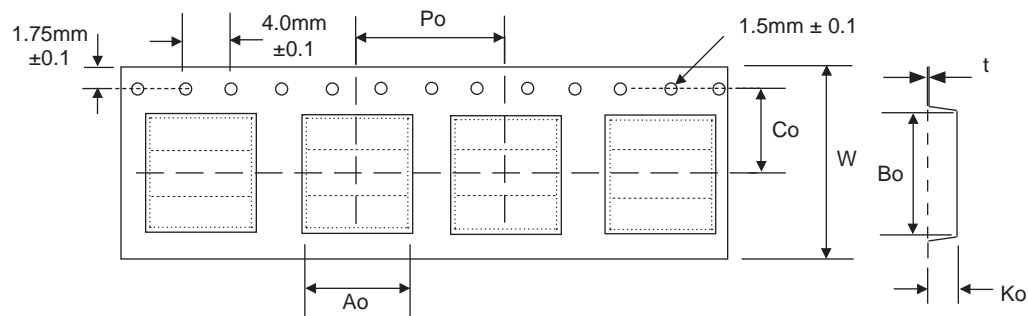
| Part Number | STANDARD VALUES - CASE SIZE (6.0 x 6.0 x 4.5mm) | | | | |
|----------------|---|------------------------|------------------------|------------------------|----------------|
| | Inductance Value (μH) | DC Resistance (Ω) ±30% | DC Current Isat (Amps) | DC Current Irms (Amps) | Test Frequency |
| NPIS65L1R0YTRF | 1.0 ± 30% | 0.014 | 8.50 | 4.20 | 100KHz |
| NPIS65L1R3YTRF | 1.3 ± 30% | 0.016 | 8.00 | 4.00 | |
| NPIS65L1R8YTRF | 1.8 ± 30% | 0.018 | 7.00 | 3.70 | |
| NPIS65L2R3YTRF | 2.3 ± 30% | 0.021 | 6.00 | 3.50 | |
| NPIS65L3R0YTRF | 3.0 ± 30% | 0.024 | 5.00 | 3.20 | |
| NPIS65L4R5MTRF | 4.5 ± 20% | 0.031 | 4.00 | 3.00 | |
| NPIS65L6R3MTRF | 6.3 ± 20% | 0.038 | 3.80 | 2.80 | |
| NPIS65L100MTRF | 10 ± 20% | 0.047 | 3.00 | 2.50 | |
| NPIS65L150MTRF | 15 ± 20% | 0.077 | 2.30 | 1.90 | |
| NPIS65L220MTRF | 22 ± 20% | 0.115 | 1.90 | 1.50 | |
| NPIS65L330MTRF | 33 ± 20% | 0.145 | 1.50 | 1.40 | |
| NPIS65L470MTRF | 47 ± 20% | 0.220 | 1.30 | 1.10 | |
| NPIS65L680MTRF | 68 ± 20% | 0.330 | 1.00 | 0.90 | |
| NPIS65L101MTRF | 100 ± 20% | 0.500 | 0.80 | 0.70 | |

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

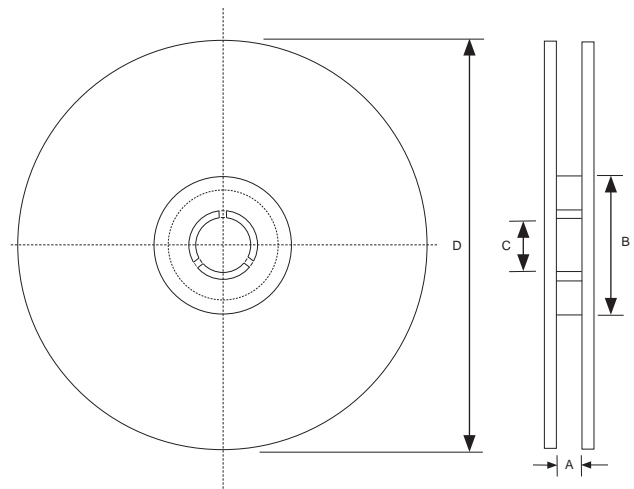
| Part Number | STANDARD VALUES - CASE SIZE (8.0 x 8.0 x 4.0mm) | | | | |
|----------------|---|------------------------|------------------------|------------------------|----------------|
| | Inductance Value (μH) | DC Resistance (Ω) ±30% | DC Current Isat (Amps) | DC Current Irms (Amps) | Test Frequency |
| NPIS80L0R9YTRF | 0.9 ± 30% | 0.006 | 11.0 | 7.80 | 100KHz |
| NPIS80L1R4YTRF | 1.4 ± 30% | 0.007 | 9.00 | 7.00 | |
| NPIS80L2R0YTRF | 2.0 ± 30% | 0.009 | 7.40 | 6.30 | |
| NPIS80L3R6YTRF | 3.6 ± 30% | 0.015 | 5.30 | 4.90 | |
| NPIS80L4R7YTRF | 4.7 ± 30% | 0.018 | 4.70 | 4.10 | |
| NPIS80L6R8YTRF | 6.8 ± 30% | 0.025 | 4.00 | 3.70 | |
| NPIS80L100MTRF | 10 ± 20% | 0.034 | 3.40 | 3.10 | |
| NPIS80L150MTRF | 15 ± 20% | 0.050 | 2.70 | 2.40 | |
| NPIS80L220MTRF | 22 ± 20% | 0.066 | 2.20 | 2.20 | |
| NPIS80L330MTRF | 33 ± 20% | 0.100 | 1.90 | 1.70 | |
| NPIS80L470MTRF | 47 ± 20% | 0.150 | 1.50 | 1.40 | |
| NPIS80L680MTRF | 68 ± 20% | 0.230 | 1.20 | 1.10 | |
| NPIS80L101MTRF | 100 ± 20% | 0.290 | 1.00 | 1.00 | |

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

| Case Size | Reel Qty | CARRIER TAPE DIMENSIONS (mm) | | | | | | |
|-----------|------------|------------------------------|------------|------------|------------|-------------|------------|------------|
| | | W | A0 | B0 | Co | K0 | Po | t |
| NPIS30L | 2,000 | 8.0 ± 0.20 | 3.2 ± 0.10 | 3.2 ± 0.10 | 3.5 ± 0.10 | 1.4 ± 0.10 | 4.0 ± 0.10 | 0.3 ± 0.05 |
| NPIS32L | | | | | | 1.6 ± 0.10 | | |
| NPIS35L | | | | | | 1.9 ± 0.10 | | |
| NPIS40L | 5,000 | 12.0 ± 0.30 | 4.3 ± 0.10 | 4.3 ± 0.10 | 5.5 ± 0.10 | 1.4 ± 0.10 | 8.0 ± 0.10 | |
| NPIS42L | | | | | | 1.6 ± 0.10 | | |
| NPIS48L | | | | | | 2.1 ± 0.10 | | |
| NPIS62L | 1,000 | 12.0 ± 0.30 | 6.3 ± 0.10 | 6.3 ± 0.10 | 5.5 ± 0.10 | 1.6 ± 0.10 | 8.0 ± 0.10 | 0.4 ± 0.10 |
| NPIS60L | 2.3 ± 0.10 | | | | | | | |
| NPIS65L | 1,500 | | | | | 4.7 ± 0.10 | | |
| NPIS80L | 1,000 | | | | | 16.0 ± 0.30 | | |



| Case Size | Tape Width | REEL DIMENSIONS (mm) | | | |
|-----------|------------|----------------------|----------|------------|-----------|
| | | A(mm) | B(mm) | C(mm) | D(mm) |
| NPIS30L | 8.0 | 10.0 ± 1.5 | 60 ± 1.0 | 13.0 ± 0.5 | 180 ± 3.0 |
| NPIS32L | | | | | 330 ± 3.0 |
| NPIS35L | | | | | |
| NPIS40L | 12.0 | 13.5 ± 1.0 | 80 ± 2.0 | 13.0 ± 0.5 | 180 ± 3.0 |
| NPIS42L | | | | | 330 ± 3.0 |
| NPIS48L | | | | | |
| NPIS62L | | | | | 330 ± 3.0 |
| NPIS60L | 12.0 | 13.5 ± 1.0 | 80 ± 2.0 | 13.0 ± 0.5 | 330 ± 3.0 |
| NPIS65L | | | | | |
| NPIS80L | 16.0 | 17.5 ± 1.0 | | | |



| Case Size | LAND PATTERN DIMENSIONS (mm) | | |
|--------------------|------------------------------|-----|-----|
| | L | G | H |
| NPIS30L, 32L & 35L | 2.2 | 0.8 | 2.7 |
| NPIS40L, 42L & 48L | 2.8 | 1.2 | 3.7 |
| NPIS62L, 60L & 65L | 4.7 | 1.6 | 5.7 |
| NPIS80L | 5.6 | 1.8 | 7.5 |

