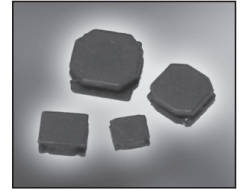


FEATURES

- SHIELDED POWER INDUCTOR
- AUTOMATIC ASSEMBLY
- ROBUST CONSTRUCTION
- HIGH EFFICIENCY
- HIGH CURRENT RATINGS
- ULTRA LOW PROFILE (1.0 ~ 1.2mm HEIGHTS)
- SURFACE MOUNTABLE CONSTRUCTION
- TAPED AND REELED FOR AUTOMATIC INSERTION

**RoHS
Compliant**
includes all homogeneous materials

*See Part Number System for Details



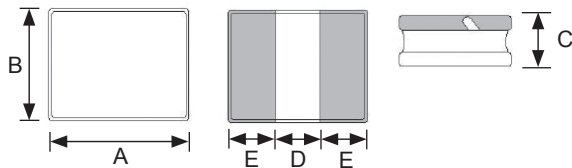
CHARACTERISTICS

| Case Size | NPIM26LP | NPIM20LP | NPIM21LP |
|-------------------------------------|--|--------------|-------------|
| Inductance Range | 0.24 ~ 4.7μH | 0.24 ~ 4.7μH | 0.24 ~ 10μH |
| Ambient Operating Temperature Range | -55°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 | ±20% (M) | | |
| Resistance to Solder Heat | +260°C for 10 seconds | | |

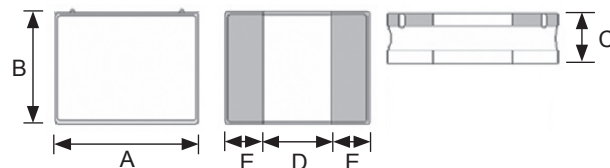
DIMENSIONS (mm)

| Series | Component Dimensions | | | | | Land Pattern Dimensions | | |
|----------|----------------------|---------------|----------|-----------|----------|-------------------------|-----|-----|
| | A | B | C | D | E | F | G | H |
| NPIM26LP | 2.0 -0.1/+0.2 | 1.6 -0.1/+0.2 | 1.0 max. | 0.50 ref. | 1.0 ref. | 0.8 | 2.3 | 1.9 |
| NPIM20LP | 2.5 -0.1/+0.2 | 2.0 -0.1/+0.2 | 1.0 max. | 0.75 ref. | 1.0 ref. | 1.0 | 2.9 | 2.4 |
| NPIM21LP | 2.5 -0.1/+0.2 | 2.0 -0.1/+0.2 | 1.2 max. | 0.75 ref. | 1.0 ref. | 1.0 | 2.9 | 2.4 |

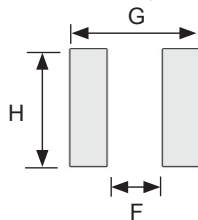
NPIM26LP & NPIM20LP



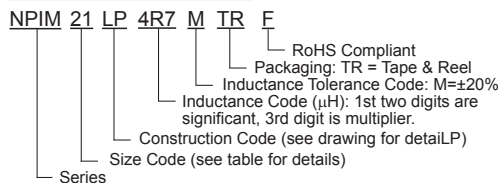
NPIM21LP



REFLOW SOLDERING
LAND PATTERN (All Sizes)



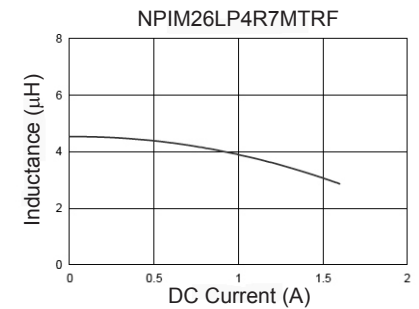
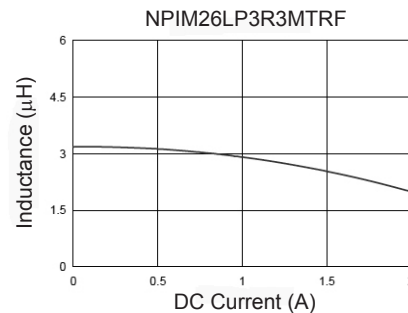
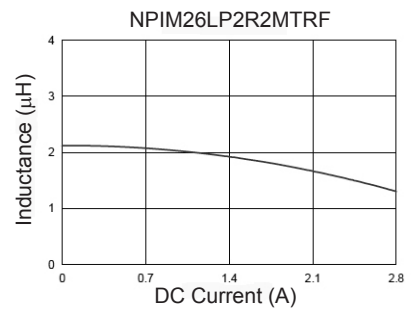
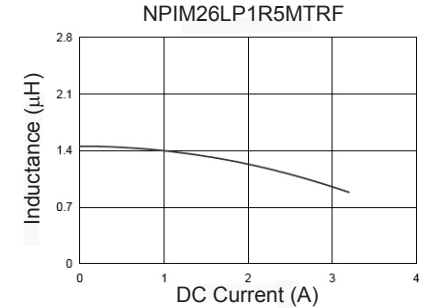
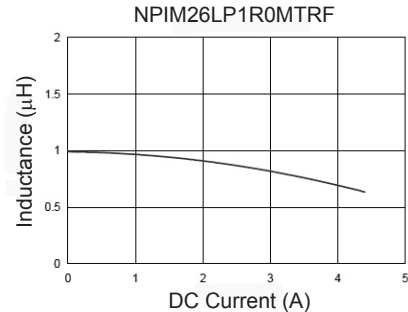
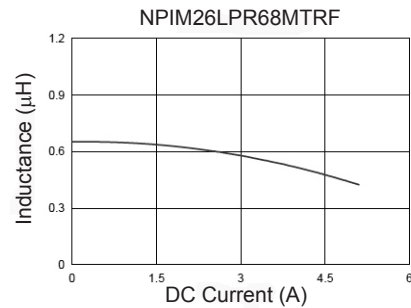
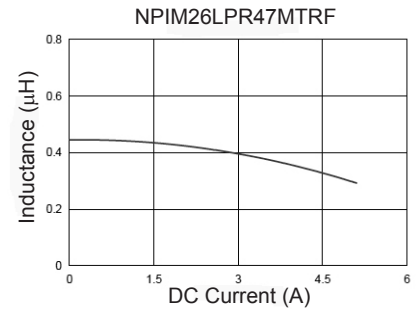
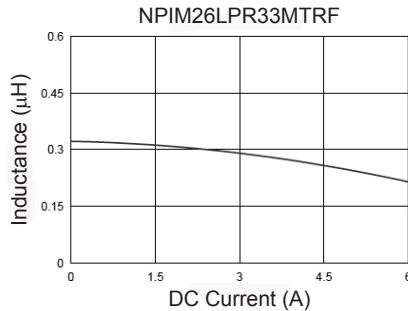
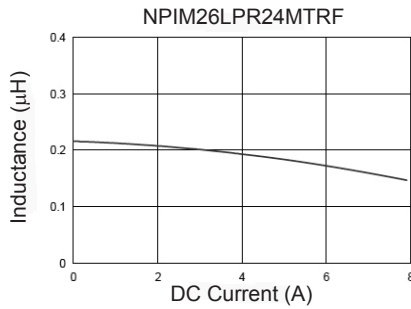
PART NUMBER SYSTEM



NPIM26LP Size

| Series | Standard Values - Case Size 26 (2.0×1.6×1.0mm) | | | | | | | |
|-----------------|--|-----------------|---------|-------|--------------|------|-------------|------|
| | Inductance (μH) | Test Conditions | DCR (Ω) | | Isat* (Amps) | | IDC* (Amps) | |
| | | | Typ. | Max. | Typ. | Max. | Typ. | Max. |
| NPIM26LPR24MTRF | 0.24 ± 20% | 1MHz, 1V | 0.015 | 0.020 | 7.5 | 6.5 | 6.50 | 5.50 |
| NPIM26LPR33MTRF | 0.33 ± 20% | | 0.018 | 0.023 | 5.5 | 5.0 | 5.60 | 5.20 |
| NPIM26LPR47MTRF | 0.47 ± 20% | | 0.024 | 0.029 | 5.2 | 4.5 | 5.30 | 4.70 |
| NPIM26LPR68MTRF | 0.68 ± 20% | | 0.036 | 0.044 | 5.1 | 4.4 | 4.20 | 3.80 |
| NPIM26LP1R0MTRF | 1.0 ± 20% | | 0.050 | 0.060 | 4.5 | 4.0 | 3.40 | 3.10 |
| NPIM26LP1R5MTRF | 1.5 ± 20% | | 0.068 | 0.082 | 3.2 | 2.8 | 3.10 | 2.70 |
| NPIM26LP2R2MTRF | 2.2 ± 20% | | 0.10 | 0.120 | 2.7 | 2.4 | 2.30 | 2.10 |
| NPIM26LP3R3MTRF | 3.3 ± 20% | | 0.16 | 0.192 | 2.0 | 1.7 | 2.00 | 1.80 |
| NPIM26LP4R7MTRF | 4.7 ± 20% | | 0.18 | 0.216 | 1.6 | 1.4 | 1.80 | 1.60 |

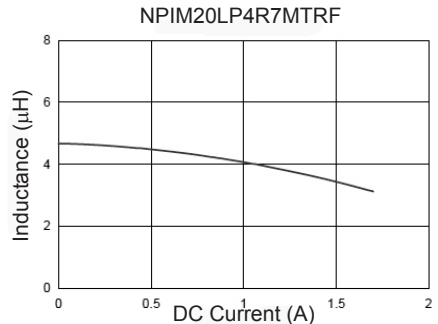
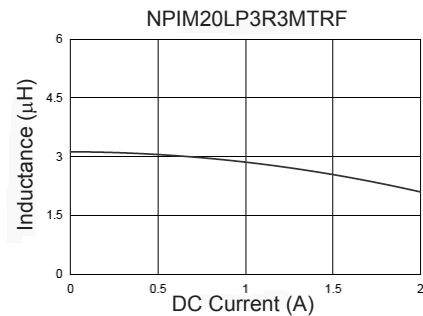
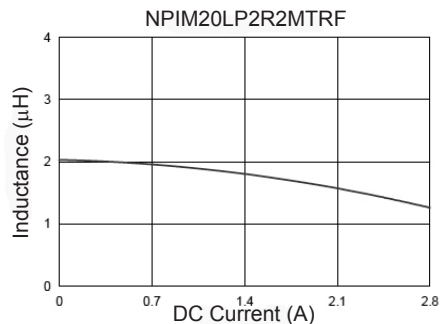
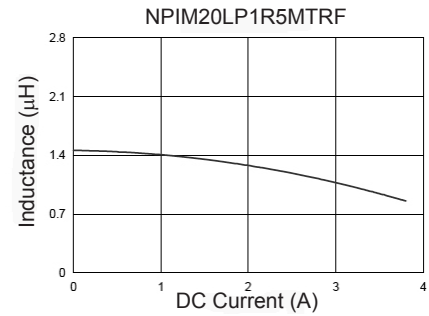
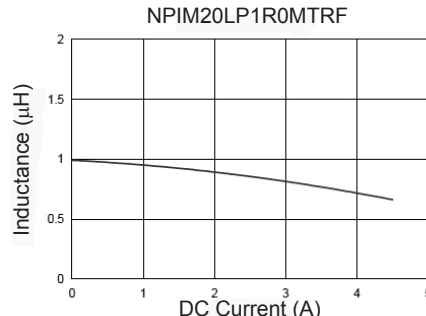
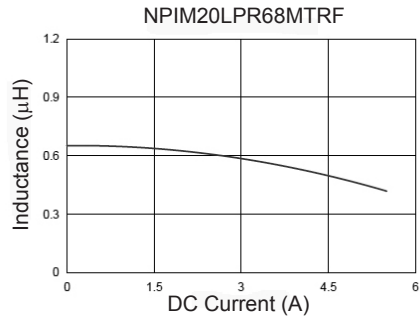
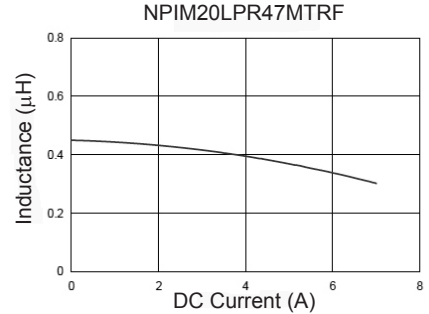
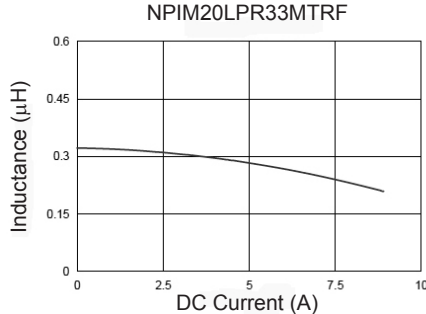
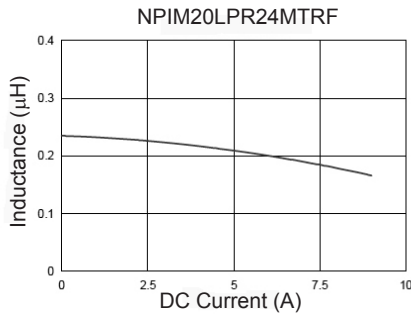
*Maximum +40°C temperature rise at IDC. Maximum -30% inductance drop from initial measured value at Isat. See page 5 for Isat/Irms Test Conditions.



NPIM20LP Size

| Series | Standard Values - Case Size 20 (2.5×2.0×1.0mm) | | | | | | | |
|-----------------|--|-----------------|---------|-------|--------------|------|-------------|------|
| | Inductance (μH) | Test Conditions | DCR (Ω) | | Isat* (Amps) | | IDC* (Amps) | |
| | | | Typ. | Max. | Typ. | Max. | Typ. | Max. |
| NPIM20LPR24MTRF | 0.24 ± 20% | 1MHz, 1V | 0.018 | 0.022 | 9.5 | 8.0 | 6.00 | 5.50 |
| NPIM20LPR33MTRF | 0.33 ± 20% | | 0.023 | 0.028 | 8.0 | 6.5 | 5.60 | 5.10 |
| NPIM20LPR47MTRF | 0.47 ± 20% | | 0.027 | 0.035 | 7.0 | 5.9 | 5.30 | 4.80 |
| NPIM20LPR68MTRF | 0.68 ± 20% | | 0.032 | 0.040 | 5.5 | 4.6 | 4.40 | 4.00 |
| NPIM20LP1R0MTRF | 1.0 ± 20% | | 0.044 | 0.053 | 4.9 | 4.3 | 3.70 | 3.40 |
| NPIM20LP1R5MTRF | 1.5 ± 20% | | 0.062 | 0.074 | 3.8 | 3.1 | 3.40 | 3.00 |
| NPIM20LP2R2MTRF | 2.2 ± 20% | | 0.078 | 0.093 | 2.8 | 2.3 | 2.80 | 2.50 |
| NPIM20LP3R3MTRF | 3.3 ± 20% | | 0.125 | 0.150 | 2.1 | 1.8 | 2.20 | 2.00 |
| NPIM20LP4R7MTRF | 4.7 ± 20% | | 0.180 | 0.216 | 1.7 | 1.4 | 1.80 | 1.60 |

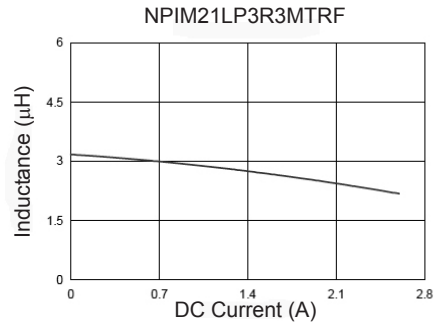
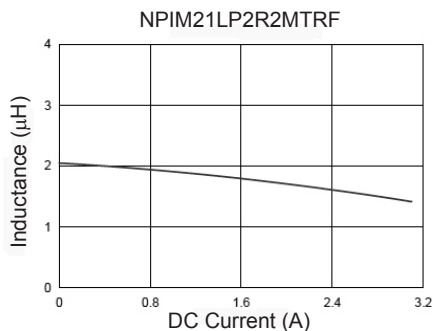
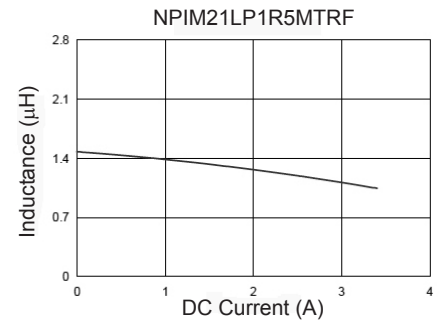
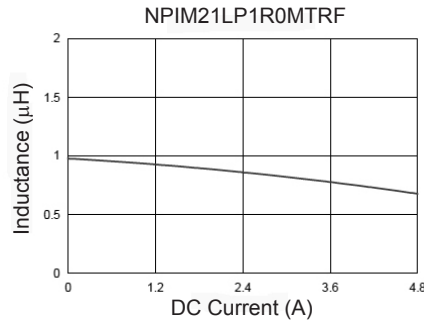
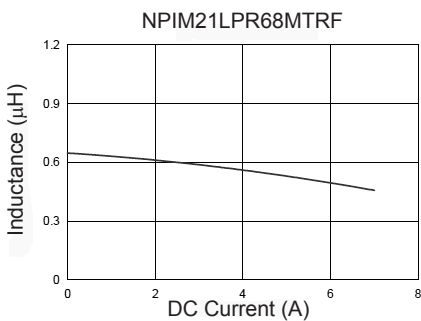
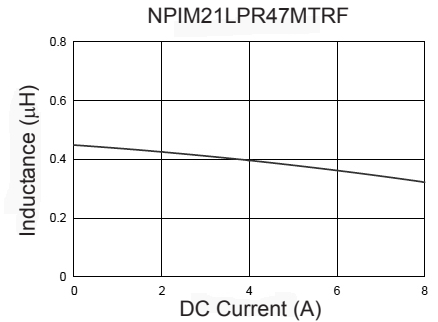
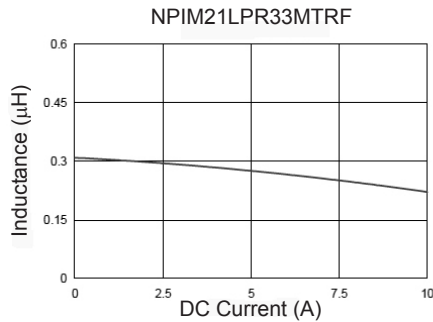
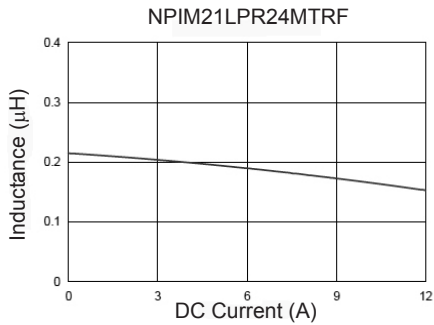
*Maximum +40°C temperature rise at IDC. Maximum -30% inductance drop from initial measured value at Isat. See page 5 for Isat/Irms Test Conditions.

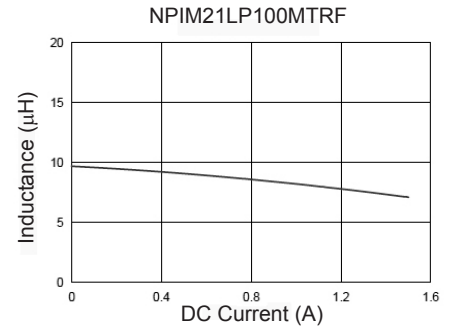
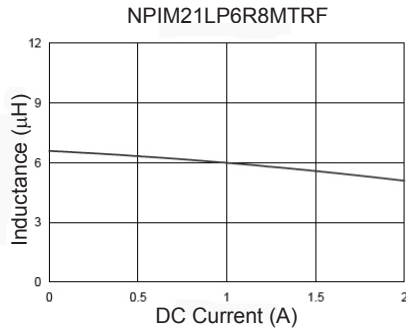
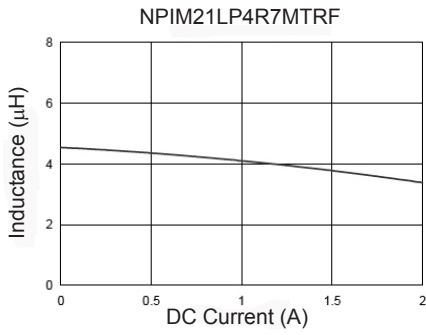


NPIM21LP Size

| Series | Standard Values - Case Size 21 (2.5×2.0×1.2mm) | | | | | | | |
|-----------------|--|-----------------|---------|-------|--------------|------|-------------|------|
| | Inductance (μH) | Test Conditions | DCR (Ω) | | Isat* (Amps) | | IDC* (Amps) | |
| | | | Typ. | Max. | Typ. | Max. | Typ. | Max. |
| NPIM21LPR24MTRF | 0.24 ± 20% | 1MHz, 1V | 0.018 | 0.022 | 8.0 | 7.0 | 6.00 | 5.50 |
| NPIM21LPR33MTRF | 0.33 ± 20% | | 0.023 | 0.028 | 7.0 | 6.0 | 5.60 | 5.10 |
| NPIM21LPR47MTRF | 0.47 ± 20% | | 0.027 | 0.035 | 6.0 | 5.0 | 5.30 | 4.80 |
| NPIM21LPR68MTRF | 0.68 ± 20% | | 0.036 | 0.045 | 5.0 | 4.5 | 4.50 | 4.00 |
| NPIM21LP1R0MTRF | 1.0 ± 20% | | 0.045 | 0.058 | 4.3 | 3.8 | 3.80 | 3.50 |
| NPIM21LP1R5MTRF | 1.5 ± 20% | | 0.060 | 0.072 | 3.5 | 3.0 | 3.50 | 3.10 |
| NPIM21LP2R2MTRF | 2.2 ± 20% | | 0.090 | 0.108 | 3.1 | 2.6 | 2.80 | 2.50 |
| NPIM21LP3R3MTRF | 3.3 ± 20% | | 0.125 | 0.150 | 2.2 | 1.9 | 2.50 | 2.20 |
| NPIM21LP4R7MTRF | 4.7 ± 20% | | 0.190 | 0.220 | 2.0 | 1.7 | 1.90 | 1.60 |
| NPIM21LP6R8MTRF | 6.8 ± 20% | | 0.300 | 0.360 | 1.8 | 1.5 | 1.30 | 1.10 |
| NPIM21LP100MTRF | 10 ± 20% | | 0.420 | 0.475 | 1.4 | 1.1 | 1.10 | 1.00 |

*Maximum +40°C temperature rise at IDC. Maximum -30% inductance drop from initial measured value at Isat. See page 5 for Isat/Irms Test Conditions.

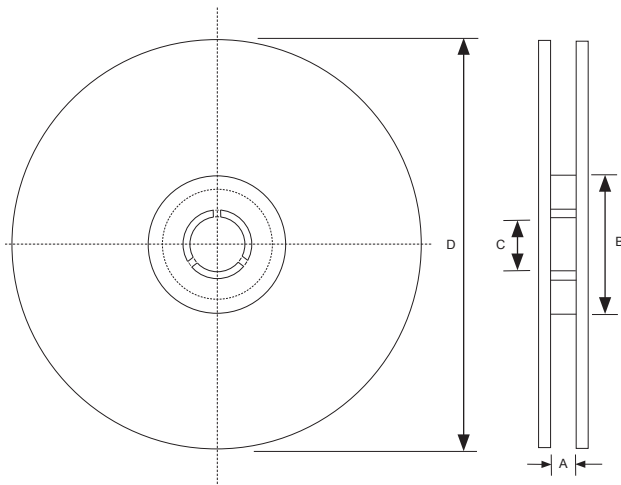
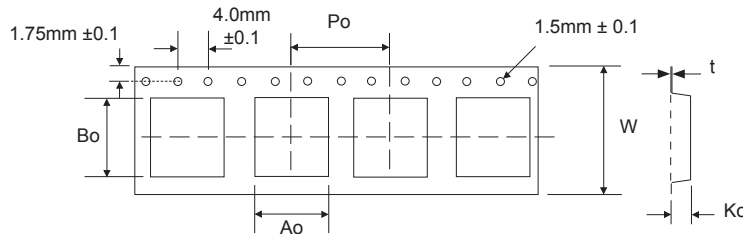




Irms Test Conditions (Board Measurement Data)

Material: FR4
 Board dimensions : 100 X 50 X 1.6t mm
 Pattern dimensions: 45 X 45 mm (Double side board)
 Pattern thickness : 70 µm

| Case Size | CARRIER TAPING DIMENSIONS (mm) AND REEL QUANTITY | | | | | | |
|-----------|--|------------|-----------|-----------|-----------|-------------|----------|
| | Ao | Bo | Ko | W | Po | t | Quantity |
| NPIM26LP | 2.00 ± 0.1 | 2.50 ± 0.1 | 1.4 ± 0.1 | 8.0 ± 0.1 | 4.0 ± 0.1 | 0.23 ± 0.05 | 2,000 |
| NPIM20LP | 2.45 ± 0.1 | 2.85 ± 0.1 | 1.4 ± 0.1 | 8.0 ± 0.1 | 4.0 ± 0.1 | 0.23 ± 0.05 | 2,000 |
| NPIM21LP | | | | | | | |



| Tape Width | REEL DIMENSIONS (mm) | | | |
|------------|----------------------|---------|------------|-----------|
| | A(mm) | B(mm) | C(mm) | D(mm) |
| NPIM26LP | 8.4 ± 1.0 | 50 min. | 13.0 ± 0.8 | 178 ± 2.0 |
| NPIM20LP | | | | |
| NPIM21LP | | | | |

REFLOW SOLDERING PROFILE

