

### FEATURES

- FLAT PLATE POWER INDUCTOR
- SMALL SIZE WITH CURRENT RATINGS TO 19 AMPS
- SURFACE MOUNTABLE CONSTRUCTION
- HIGH INDUCTANCE (UP TO 10 $\mu$ H)
- TAPED AND REELED FOR AUTOMATIC INSERTION
- FOR USE IN DC/DC CONVERTERS

**RoHS  
Compliant**  
includes all homogeneous materials

\*See Part Number System for Details

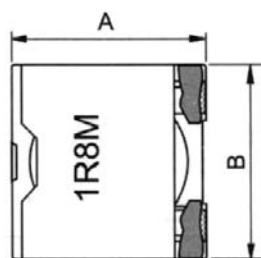


### CHARACTERISTICS

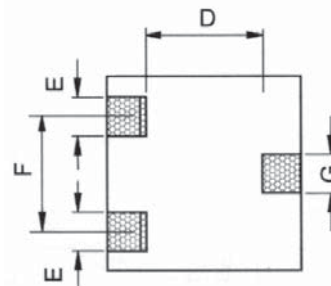
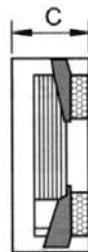
| Case Size                           | NPIF104C                        | NPIF105C           | NPIF125C         | NPIF134C           |
|-------------------------------------|---------------------------------|--------------------|------------------|--------------------|
| Inductance Range                    | 0.22 ~ 8.8 $\mu$ H              | 0.15 ~ 8.8 $\mu$ H | 1.5 ~ 10 $\mu$ H | 0.30 ~ 8.0 $\mu$ H |
| Ambient Operating Temperature Range | -40°C ~ +85°C                   |                    |                  |                    |
| Temperature Rise at IDC             | +40°C max.                      |                    |                  |                    |
| Inductance Change at IDC            | -30% typical                    |                    |                  |                    |
| Inductance Tolerance                | $\pm$ 20% (M) and $\pm$ 30% (Y) |                    |                  |                    |
| Resistance to Solder Heat           | 260°C for 10 seconds            |                    |                  |                    |

### DIMENSIONS (mm)

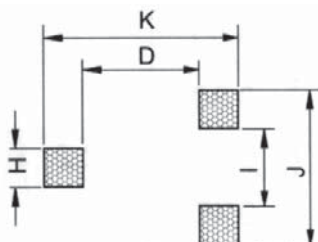
| Series   | A max. | B max. | C max. | D   | E   | F   | G   | H   | I   | J    | K    |
|----------|--------|--------|--------|-----|-----|-----|-----|-----|-----|------|------|
| NPIF104C | 10.4   | 10.4   | 4.5    | 6.7 | 2.6 | 5.5 | 1.4 | 2.0 | 2.5 | 8.5  | 11.0 |
| NPIF105C |        |        | 5.6    |     |     |     |     |     |     |      |      |
| NPIF125C | 12.9   | 12.9   | 5.7    | 8.2 |     | 7.0 | 2.5 | 3.0 | 4.0 | 10.0 | 13.5 |
| NPIF134C | 13.9   | 13.9   | 5.0    | 9.6 |     | 7.2 |     | 2.6 | 4.4 |      | 15.0 |



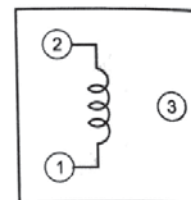
TOP VIEW



BOTTOM VIEW



LAND PATTERN



SCHEMATIC

### PART NUMBER SYSTEM

NPIF 104 C 151 M TR L F

- Termination Finish:  
F = Standard Pb-free (100%Sn)
- Current Rating Identifier
- Packaging: TR = Tape & Reel
- Inductance Tolerance Code: M= $\pm$ 20%, Y= $\pm$ 30%
- Inductance Code ( $\mu$ H): 1st two digits are significant, 3rd digit is multiplier.
- Construction Code (see drawing for details)
- Size Code (see table for details)
- Series



| Part Number      | STANDARD VALUES - CASE SIZE 104 (10.4 x 10.4 x 4.5mm) |                    |                             |                |
|------------------|-------------------------------------------------------|--------------------|-----------------------------|----------------|
|                  | Inductance Value (μH)                                 | DC Resistance (mΩ) | DC Current Isat/Irms (Amps) | Test Frequency |
| NPIF104CR22YSTRF | 0.22 ± 30%                                            | 2.2                | 18.0                        | 100KHz         |
| NPIF104CR36YLTRF | 0.36 ± 30%                                            | 2.2                | 18.0                        |                |
| NPIF104CR45MSTRF | 0.45 ± 20%                                            | 3.7                | 13.4                        |                |
| NPIF104CR80MLTRF | 0.80 ± 20%                                            | 3.7                | 13.4                        |                |
| NPIF104CR80MSTRF | 0.80 ± 20%                                            | 5.9                | 10.2                        |                |
| NPIF104C1R3MSTRF | 1.3 ± 20%                                             | 11.8               | 7.3                         |                |
| NPIF104C1R4MLTRF | 1.4 ± 20%                                             | 5.9                | 10.2                        |                |
| NPIF104C1R8MSTRF | 1.8 ± 20%                                             | 18.6               | 5.4                         |                |
| NPIF104C2R2MLTRF | 2.2 ± 20%                                             | 11.8               | 7.3                         |                |
| NPIF104C2R5MSTRF | 2.5 ± 20%                                             | 21.8               | 5.0                         |                |
| NPIF104C3R2MLTRF | 3.2 ± 20%                                             | 18.6               | 5.4                         |                |
| NPIF104C4R3MLTRF | 4.3 ± 20%                                             | 21.8               | 5.0                         |                |

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

| Part Number      | STANDARD VALUES - CASE SIZE 105 (10.4 x 10.4 x 5.6mm) |                    |                             |                |
|------------------|-------------------------------------------------------|--------------------|-----------------------------|----------------|
|                  | Inductance Value (μH)                                 | DC Resistance (mΩ) | DC Current Isat/Irms (Amps) | Test Frequency |
| NPIF105CR15YHTRF | 0.15 ± 30%                                            | 1.7                | 19.0                        | 100KHz         |
| NPIF105CR22YSTRF | 0.22 ± 30%                                            | 1.7                | 19.0                        |                |
| NPIF105CR30YHTRF | 0.30 ± 30%                                            | 2.4                | 17.7                        |                |
| NPIF105CR36YLTRF | 0.36 ± 30%                                            | 1.7                | 19.0                        |                |
| NPIF105CR45MSTRF | 0.45 ± 20%                                            | 2.4                | 17.7                        |                |
| NPIF105CR50MHTRF | 0.50 ± 20%                                            | 4.1                | 13.0                        |                |
| NPIF105CR80MLTRF | 0.80 ± 20%                                            | 2.4                | 16.0                        |                |
| NPIF105CR80MSTRF | 0.80 ± 20%                                            | 4.1                | 13.0                        |                |
| NPIF105CR80MHTRF | 0.80 ± 20%                                            | 5.3                | 11.2                        |                |
| NPIF105C1R2MHTRF | 1.2 ± 20%                                             | 7.5                | 9.0                         |                |
| NPIF105C1R3MLTRF | 1.3 ± 20%                                             | 5.3                | 11.2                        |                |
| NPIF105C1R4MLTRF | 1.4 ± 20%                                             | 4.1                | 12.0                        |                |
| NPIF105C1R5MHTRF | 1.5 ± 20%                                             | 10.5               | 7.8                         |                |
| NPIF105C1R8MSTRF | 1.8 ± 20%                                             | 7.5                | 9.0                         |                |
| NPIF105C2R0MHTRF | 2.0 ± 20%                                             | 12.4               | 7.4                         |                |
| NPIF105C2R2MLTRF | 2.2 ± 20%                                             | 5.3                | 9.6                         |                |
| NPIF105C2R5MSTRF | 2.5 ± 20%                                             | 10.5               | 7.8                         |                |
| NPIF105C3R0MHTRF | 3.0 ± 20%                                             | 23.8               | 4.9                         |                |
| NPIF105C3R2MLTRF | 3.2 ± 20%                                             | 7.5                | 7.8                         |                |
| NPIF105C3R2MSTRF | 3.2 ± 20%                                             | 12.4               | 7.4                         |                |
| NPIF105C4R0MSTRF | 4.0 ± 20%                                             | 18                 | 6.2                         |                |
| NPIF105C4R3MLTRF | 4.3 ± 20%                                             | 10.5               | 6.8                         |                |
| NPIF105C5R0MSTRF | 5.3 ± 20%                                             | 23.8               | 4.9                         |                |
| NPIF105C5R7MLTRF | 5.7 ± 20%                                             | 12.4               | 5.8                         |                |
| NPIF105C7R2MLTRF | 7.2 ± 20%                                             | 18.0               | 5.3                         |                |
| NPIF105C8R8MLTRF | 8.8 ± 20%                                             | 23.8               | 4.8                         |                |

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

| Part Number      | STANDARD VALUES - CASE SIZE 125 (12.9 x 12.9 x 5.7mm) |                    |                             |                |
|------------------|-------------------------------------------------------|--------------------|-----------------------------|----------------|
|                  | Inductance Value (μH)                                 | DC Resistance (mΩ) | DC Current Isat/Irms (Amps) | Test Frequency |
| NPIF125CR35YUTRF | 0.35 ± 30%                                            | 1.8                | 18.5                        | 100KHz         |
| NPIF125CR80MUTRF | 0.80 ± 30%                                            | 2.5                | 16.5                        |                |
| NPIF125C1R0MHTRF | 1.0 ± 20%                                             | 2.5                | 16.5                        |                |
| NPIF125C1R4MUTRF | 1.4 ± 20%                                             | 3.4                | 15.5                        |                |
| NPIF125C1R5MTRF  | 1.5 ± 20%                                             | 2.5                | 14.0                        |                |
| NPIF125C1R8MHTRF | 1.8 ± 20%                                             | 3.4                | 15.3                        |                |
| NPIF125C2R2MUTRF | 2.2 ± 20%                                             | 5.4                | 12.5                        |                |
| NPIF125C2R5MTRF  | 2.5 ± 20%                                             | 3.4                | 10.0                        |                |
| NPIF125C2R8MHTRF | 2.8 ± 20%                                             | 5.4                | 12.3                        |                |
| NPIF125C3R2MUTRF | 3.2 ± 20%                                             | 8.0                | 9.9                         |                |
| NPIF125C4R0MTRF  | 4.0 ± 20%                                             | 8.0                | 8.3                         |                |
| NPIF125C4R0MHTRF | 4.0 ± 20%                                             | 8.0                | 9.9                         |                |
| NPIF125C4R3MUTRF | 4.3 ± 20%                                             | 11.4               | 8.2                         |                |
| NPIF125C5R6MHTRF | 5.6 ± 20%                                             | 11.4               | 8.2                         |                |
| NPIF125C5R6MUTRF | 5.6 ± 20%                                             | 13.5               | 7.6                         |                |
| NPIF125C6R0MTRF  | 6.0 ± 20%                                             | 8.0                | 6.7                         |                |
| NPIF125C7R2MHTRF | 7.2 ± 20%                                             | 13.5               | 7.6                         |                |
| NPIF125C8R2MTRF  | 8.2 ± 20%                                             | 11.4               | 5.8                         |                |
| NPIF125C100MTRF  | 10 ± 20%                                              | 13.5               | 5.0                         |                |

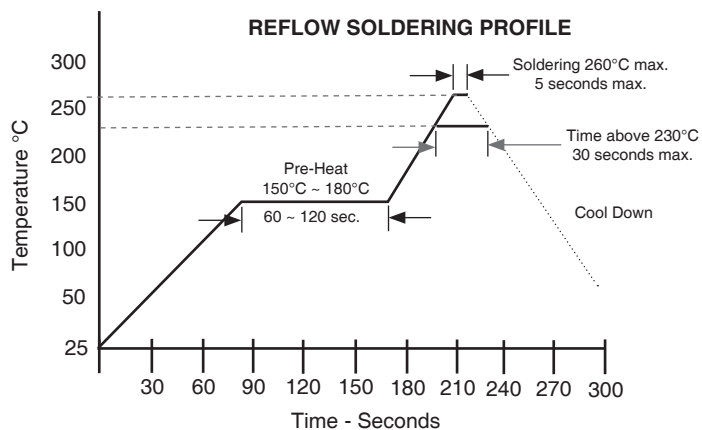
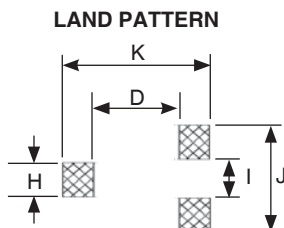
Maximum +40°C temperature rise at Irms. Typical -30% inductance change at Isat.

| Part Number      | STANDARD VALUES - CASE SIZE 134 (13.9 x 13.9 x 5.0mm) |                    |                             |                |
|------------------|-------------------------------------------------------|--------------------|-----------------------------|----------------|
|                  | Inductance Value (μH)                                 | DC Resistance (mΩ) | DC Current Isat/Irms (Amps) | Test Frequency |
| NPIF134CR30YHTRF | 0.30 ± 30%                                            | 1.9                | 18.5                        | 100KHz         |
| NPIF134CR40YTRF  | 0.40 ± 30%                                            | 1.9                | 18.5                        |                |
| NPIF134CR66MHTRF | 0.66 ± 20%                                            | 2.5                | 17.0                        |                |
| NPIF134CR90MTRF  | 0.90 ± 20%                                            | 2.5                | 17.0                        |                |
| NPIF134C1R2MHTRF | 1.2 ± 20%                                             | 3.7                | 15.0                        |                |
| NPIF134C1R6MTRF  | 1.6 ± 20%                                             | 3.7                | 15.0                        |                |
| NPIF134C1R8MHTRF | 1.8 ± 20%                                             | 6.6                | 10.5                        |                |
| NPIF134C2R5MTRF  | 2.5 ± 20%                                             | 6.6                | 10.5                        |                |
| NPIF134C2R7MHTRF | 2.7 ± 20%                                             | 10.8               | 8.0                         |                |
| NPIF134C3R6MTRF  | 3.6 ± 20%                                             | 10.8               | 8.0                         |                |
| NPIF134C3R6MHTRF | 3.6 ± 20%                                             | 12.0               | 7.5                         |                |
| NPIF134C4R8MTRF  | 4.8 ± 20%                                             | 12.0               | 7.5                         |                |
| NPIF134C4R8MHTRF | 4.8 ± 20%                                             | 16.3               | 7.0                         |                |
| NPIF134C6R0MHTRF | 6.0 ± 20%                                             | 18.4               | 6.5                         |                |
| NPIF134C6R4MTRF  | 6.4 ± 20%                                             | 16.3               | 7.0                         |                |
| NPIF134C8R0MTRF  | 8.0 ± 20%                                             | 18.4               | 6.5                         |                |

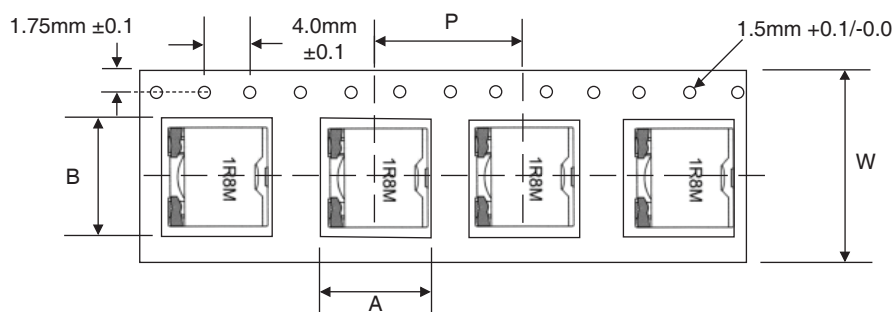
Maximum +40°C temperature rise at Irms. Typical -30% inductance change at Isat.

### RECOMMENDED LAND PATTERN DIMENSIONS

| Series   | D   | H   | I   | J    | K    |
|----------|-----|-----|-----|------|------|
| NPIF104C | 6.7 | 2.0 | 2.5 | 8.5  | 11.0 |
| NPIF105C | 6.7 | 2.0 | 2.5 | 8.5  | 11.0 |
| NPIF125C | 8.2 | 3.0 | 4.0 | 10.0 | 13.5 |
| NPIF134C | 9.6 | 2.6 | 4.4 | 10   | 15.0 |



| Case Size | TAPING DIMENSIONS (mm) |            |      |      |          |
|-----------|------------------------|------------|------|------|----------|
|           | A                      | B          | P    | W    | Qty/Reel |
| NPIF104C  | 10.4 ± 0.1             | 10.4 ± 0.1 | 16.0 | 24.0 | 500 pcs  |
| NPIF105C  | 10.4 ± 0.1             | 10.4 ± 0.1 | 16.0 | 24.0 | 500 pcs  |
| NPIF125C  | 13.0 ± 0.1             | 13.0 ± 0.1 | 16.0 | 24.0 | 500 pcs  |
| NPIF134C  | 13.9 ± 0.1             | 13.9 ± 0.1 | 16.0 | 24.0 | 500 pcs  |



| Tape Width | REEL DIMENSIONS (mm) |          |          |       |
|------------|----------------------|----------|----------|-------|
|            | A(mm)                | B(mm)    | C(mm)    | D(mm) |
| 16mm       | 16.5 ± 0.1           | 23 ± 1.0 | 13 ± 1.0 | 330   |

