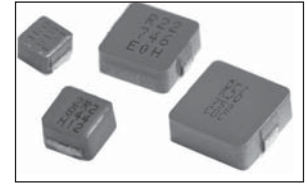


FEATURES

- SHIELDED POWER INDUCTOR
- MOLDED METAL COMPOSITE CONSTRUCTION
- HIGH SATURATION CURRENT CHARACTERISTICS (~ 110A)
- HIGH EFFICIENCY (2X IMPROVEMENT OVER FERRITE CORE INDUCTORS)
- LOW PROFILE (1.8mm ~ 5.2mm)

RoHS Compliant
includes all homogeneous materials



*See Part Number System for Details

CHARACTERISTICS

| Case Code | 42C | 74C | 104C | 143C | 145C |
|--|---------------------------|-----------|------------|------------|------------|
| Inductance Range (μH) | 0.1 ~ 1.0 | 0.1 ~ 6.8 | 0.68 ~ 2.2 | 0.22 ~ 3.3 | 0.36 ~ 6.8 |
| Ambient Operating Temperature Range | -55°C ~ +85°C | | | | |
| Maximum Component Temperature (Ambient + Self-Heating) | +125°C | | | | |
| Temperature Rise at Irms | +40°C | | | | |
| Inductance Change at Isat | -20% | | | | |
| Inductance Tolerance | ±20% | | | | |
| Resistance to Solder Heat | 260°C ±5°C for 10 seconds | | | | |

DIMENSIONS (mm)

| Series | Value | A | B | C | D ₁ | D ₂ | E ₁ | E ₂ | t |
|----------|-----------|--------------|------------|-----------|----------------|----------------|----------------|----------------|-----------|
| NPIM42C | All | 4.15 ± 0.35 | 4.0 ± 0.3 | 1.8 ± 0.2 | 0.8 ± 0.3 | 1.0 ± 0.1 | 1.5 ± 0.3 | 2.2 ± 0.2 | 0 ~ +0.15 |
| NPIM74C | All | 6.95 ± 0.35 | 6.6 ± 0.2 | 2.8 ± 0.2 | 1.6 ± 0.3 | 2.0 ± 0.1 | 3.0 ± 0.3 | 3.6 ± 0.2 | 0 ~ +0.15 |
| NPIM104C | R15 ~ 1R5 | 11.15 ± 0.35 | 10.0 ± 0.3 | 3.8 ± 0.2 | 2.0 ± 0.5 | 2.5 ± 0.1 | 3.0 ± 0.5 | 5.0 ± 0.2 | 0 ~ +0.15 |
| | 2R2 ~ 4R7 | 10.85 ± 0.35 | | | | | | | |
| NPIM143C | R22 ~ R68 | 13.45 ± 0.35 | 12.6 ± 0.2 | 3.3 ± 0.2 | 2.0 ± 0.5 | 2.5 ± 0.1 | 4.0 ± 0.5 | 6.0 ± 0.2 | 0 ~ +0.15 |
| | 1R0 ~ 3R3 | 13.45 ± 0.35 | | | | | 3.0 ± 0.5 | | |
| NPIM145C | R36 | 13.65 ± 0.35 | 12.6 ± 0.2 | 5.0 ± 0.2 | 2.0 ± 0.5 | 2.5 ± 0.1 | 4.0 ± 0.5 | 6.0 ± 0.2 | 0 ~ +0.15 |
| | R15 ~ 1R5 | 13.45 ± 0.35 | | 4.8 ± 0.2 | | | 4.0 ± 0.5 | | |
| | 2R2 ~ 6R8 | | | | | | 3.0 ± 0.5 | | |



PART NUMBER SYSTEM

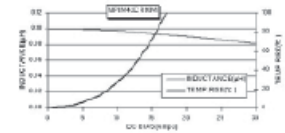
NPIM -- C 4R7 M TR E

- Series
- Construction Code (see drawing for details)
- Inductance Code (μH): 1st two digits are significant, 3rd digit is multiplier for values from 10μH and up.
- Inductance Tolerance Code: M=±20%
- Packaging: TR = Tape & Reel
- RoHS Compliant



| Part Number | STANDARD VALUES - CASE SIZE 42C (4.15 X 4.0 X 1.8mm) | | | | Test Frequency |
|----------------|---|--------------------|------------------------|------------------------|----------------|
| | Inductance Value (μH) | DC Resistance (mΩ) | DC Current Irms (Amps) | DC Current Isat (Amps) | |
| NPIM42CR10MTRF | 0.1 | 5.0 | 11 | 30 | 100KHz |
| NPIM42CR22MTRF | 0.22 | 8.0 | 9 | 17 | |
| NPIM42CR47MTRF | 0.47 | 15.5 | 6 | 11.5 | |
| NPIM42C1R0MTRF | 1.0 | 36 | 3.8 | 8.5 | |

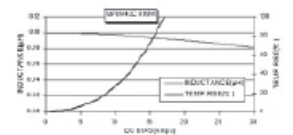
Maximum +40°C temperature rise at Irms. Typical -20% inductance change at Isat.



Contact NIC for NPIM42C Performance Curves

| Part Number | STANDARD VALUES - CASE SIZE 74 (6.95 X 6.6 X 2.8mm) | | | | Test Frequency |
|----------------|---|--------------------|------------------------|------------------------|----------------|
| | Inductance Value (μH) | DC Resistance (mΩ) | DC Current Irms (Amps) | DC Current Isat (Amps) | |
| NPIM74CR10MTRF | 0.1 | 1.7 | 32.5 | 60 | 100KHz |
| NPIM74CR20MTRF | 0.2 | 3 | 24 | 41 | |
| NPIM74CR22MTRF | 0.22 | 2.8 | 23 | 40 | |
| NPIM74CR33MTRF | 0.33 | 3.9 | 20 | 30 | |
| NPIM74CR47MTRF | 0.47 | 4.2 | 17.5 | 26 | |
| NPIM74CR56MTRF | 0.56 | 5 | 16.5 | 25.5 | |
| NPIM74CR68MTRF | 0.68 | 5.5 | 15.5 | 25 | |
| NPIM74CR75MTRF | 0.75 | 6.2 | 14 | 24.5 | |
| NPIM74CR82MTRF | 0.82 | 8 | 13 | 24 | |
| NPIM74C1R0MTRF | 1.0 | 10 | 11 | 22 | |
| NPIM74C1R2MTRF | 1.2 | 12 | 10 | 20 | |
| NPIM74C1R5MTRF | 1.5 | 15 | 9 | 18 | |
| NPIM74C2R0MTRF | 2.0 | 18 | 8.2 | 14 | |
| NPIM74C2R2MTRF | 2.2 | 20 | 8 | 14 | |
| NPIM74C2R5MTRF | 2.5 | 22 | 7 | 14 | |
| NPIM74C3R3MTRF | 3.3 | 30 | 6 | 13.5 | |
| NPIM74C4R7MTRF | 4.7 | 40 | 5.5 | 10 | |
| NPIM74C6R8MTRF | 6.8 | 60 | 4.5 | 8 | |

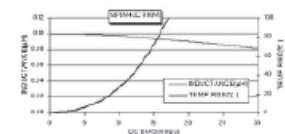
Maximum +40°C temperature rise at Irms. Typical -20% inductance change at Isat.



Contact NIC for NPIM74C Performance Curves

| Part Number | STANDARD VALUES - CASE SIZE 104C | | | | Test Frequency |
|-----------------|----------------------------------|--------------------|------------------------|------------------------|----------------|
| | Inductance Value (μH) | DC Resistance (mΩ) | DC Current Irms (Amps) | DC Current Isat (Amps) | |
| NPIM104CR68MTRF | 0.68 | 2.7 | 22 | 39 | 100KHz |
| NPIM104CR88MTRF | 0.88 | 3.0 | 20 | 38 | |
| NPIM104C1R5MTRF | 1.5 | 4.2 | 16 | 33 | |
| NPIM104C2R2MTRF | 2.2 | 7.0 | 12 | 27 | |

Maximum +40°C temperature rise at Irms. Typical -20% inductance change at Isat.

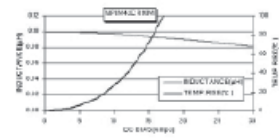


Contact NIC for NPIM104C Performance Curves



| Part Number | STANDARD VALUES - CASE SIZE 143C | | | | Test Frequency |
|-----------------|----------------------------------|--------------------|------------------------------------|------------------------------------|----------------|
| | Inductance Value (μH) | DC Resistance (mΩ) | DC Current I _{rms} (Amps) | DC Current I _{sat} (Amps) | |
| NPIM143CR22MTRF | 0.22 | 1.3 | 38 | 65 | 100KHz |
| NPIM143CR33MTRF | 0.33 | 1.5 | 36.5 | 62 | |
| NPIM143CR47MTRF | 0.47 | 2.0 | 32 | 55 | |
| NPIM143CR56MTRF | 0.56 | 2.2 | 29 | 51 | |
| NPIM143CR60MTRF | 0.60 | 2.2 | 29 | 51 | |
| NPIM143CR68MTRF | 0.68 | 2.5 | 28 | 49 | |
| NPIM143CR82MTRF | 0.82 | 3.0 | 25 | 44 | |
| NPIM143C1R0MTRF | 1.0 | 3.5 | 24 | 40 | |
| NPIM143C2R2MTRF | 2.2 | 8.0 | 16 | 29 | |
| NPIM143C3R3MTRF | 3.3 | 12 | 12 | 27 | |

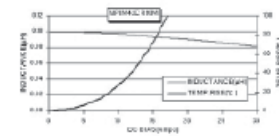
Maximum +40°C temperature rise at I_{rms}. Typical -20% inductance change at I_{sat}.



Contact NIC for NPIM143C Performance Curves

| Part Number | STANDARD VALUES - CASE SIZE 145C | | | | Test Frequency |
|-----------------|----------------------------------|-------------------------|------------------------------------|------------------------------------|----------------|
| | Inductance Value (μH) | DC Resistance max. (mΩ) | DC Current I _{rms} (Amps) | DC Current I _{sat} (Amps) | |
| NPIM145CR36MTRF | 0.36 | 1.1 | 41 | 75 | 100KHz |
| NPIM145CR47MTRF | 0.47 | 1.3 | 38 | 65 | |
| NPIM145CR50MTRF | 0.5 | 1.5 | 36 | 55 | |
| NPIM145CR56MTRF | 0.56 | 1.5 | 36 | 55 | |
| NPIM145CR62MTRF | 0.62 | 1.7 | 34 | 54 | |
| NPIM145CR68MTRF | 0.68 | 1.7 | 34 | 54 | |
| NPIM145CR82MTRF | 0.82 | 2.1 | 31 | 53 | |
| NPIM145C1R0MTRF | 1.0 | 2.5 | 29 | 50 | |
| NPIM145C1R5MTRF | 1.5 | 4.1 | 23 | 48 | |
| NPIM145C2R2MTRF | 2.2 | 5.5 | 20 | 32 | |
| NPIM145C3R3MTRF | 3.3 | 9.2 | 15 | 32 | |
| NPIM145C4R7MTRF | 4.7 | 15 | 12 | 27 | |
| NPIM145C6R8MTRF | 6.8 | 18.5 | 11 | 21 | |

Maximum +40°C temperature rise at I_{rms}. Typical -20% inductance change at I_{sat}.

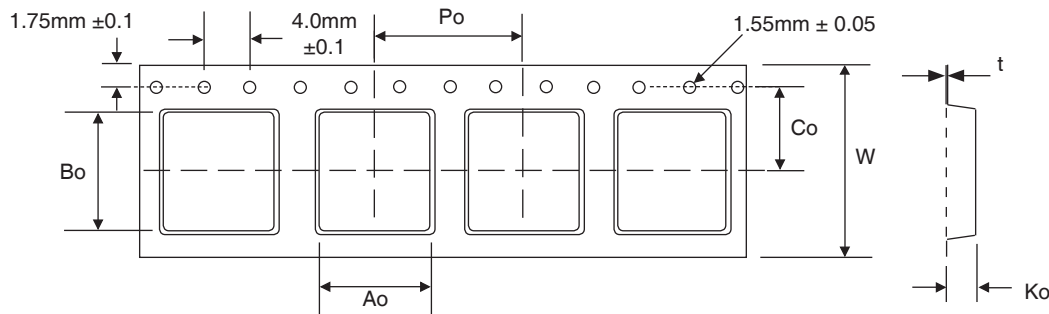


Contact NIC for NPIM145C Performance Curves



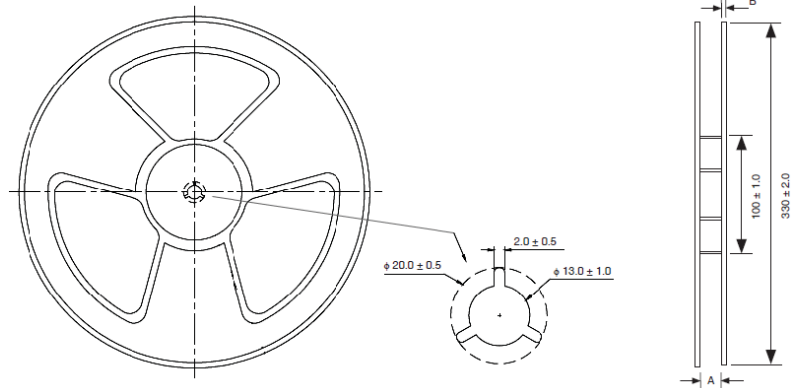
CARRIER TAPE DIMENSIONS (mm)

| Series | Part Thickness | Ao | Bo | Co | Po | Ko | t | W |
|----------|----------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|
| NPIM42C | All | 4.2 ± 0.10 | 4.5 ± 0.10 | 5.5 ± 0.10 | 8.0 ± 0.10 | 2.5 ± 0.15 | 1.55 ± 0.05 | 12.0 ± 0.30 |
| NPIM74C | All | 7.2 ± 0.10 | 7.5 ± 0.10 | 7.5 ± 0.10 | 12.0 ± 0.10 | 3.6 ± 0.15 | 0.30 ± 0.10 | 16.0 ± 0.30 |
| NPIM104C | All | 10.7 ± 0.10 | 12.0 ± 0.10 | 11.5 ± 0.10 | 16.0 ± 0.10 | 4.0 ± 0.10 | 0.35 ± 0.05 | 24.0 ± 0.30 |
| NPIM143C | All | 13.4 ± 0.10 | 14.1 ± 0.10 | 11.5 ± 0.10 | 16.0 ± 0.1 | 3.7 ± 0.15 | 0.35 ± 0.05 | 24.0 ± 0.30 |
| NPIM145C | All | 13.4 ± 0.10 | 14.1 ± 0.10 | 11.5 ± 0.10 | 16.0 ± 0.1 | 5.1 ± 0.10 | 0.35 ± 0.05 | 24.0 ± 0.30 |



REEL DIMENSIONS (mm)

| Series | A | B | Qty/Reel |
|----------|------------|-----------|----------|
| NPIM42C | 12.5 ± 0.5 | 2.0 ± 0.2 | 2,000 |
| NPIM74C | 16.0 ± 0.5 | 2.0 ± 0.2 | 1,000 |
| NPIM104C | 24.5 ± 0.5 | 2.0 ± 0.2 | 500 |
| NPIM143C | 24.5 ± 0.5 | 2.0 ± 0.2 | 500 |
| NPIM145C | 24.5 ± 0.5 | 2.0 ± 0.2 | 500 |



Land Patterns (mm)

| Series | F | G | H |
|----------|-----|------|-----|
| NPIM42C | 2.2 | 5.2 | 2.5 |
| NPIM74C | 3.7 | 8.4 | 3.5 |
| NPIM104C | 5.4 | 13.6 | 4.1 |
| NPIM143C | 8.0 | 14.5 | 5.0 |
| NPIM145C | 8.0 | 14.5 | 5.0 |

