

Inductors

For General Applications

SMD

NL Series NL4532 Type

FEATURES

- The NL series are available in 5 form factors ranging from 2016 to 5650.
- Utilizing a miniaturized winding structure, these products provide high Q characteristics.
- Inductance tolerance is ± 5 percent.

APPLICATIONS

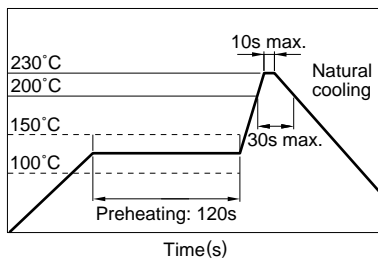
Personal computers, hard disk drives, and other electronic equipment.

SPECIFICATIONS

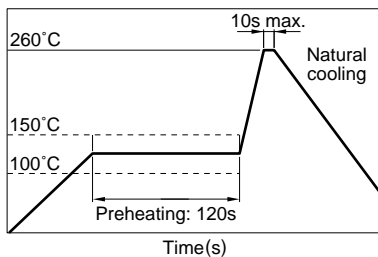
| | |
|-----------------------------|---------------------------------|
| Operating temperature range | -20 to +85°C |
| Storage temperature range | -40 to +85°C [Unit of products] |

RECOMMENDED SOLDERING CONDITIONS

REFLOW SOLDERING



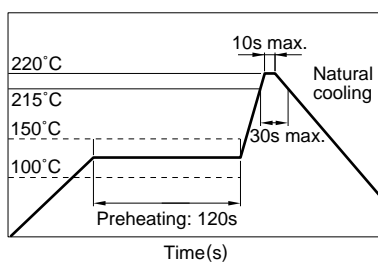
FLOW SOLDERING



IRON SOLDERING

Perform soldering at 250°C on 30W max. within 5 seconds.

VAPOR-PHASING



FLUX AND CLEANING

Rosin-based flux is recommended.

Cleaning Conditions

| | |
|---------|---|
| Solvent | Chlorine-based solvent (Do not use acid or alkali solvents.) |
| Time | 2min max. |

PRODUCT IDENTIFICATION

| | | | | |
|-----|--------|-----|-----|-----|
| NL | 201614 | T- | 2R2 | J |
| (1) | (2) | (3) | (4) | (5) |

(1) Series name

(2) Dimensions L×W×T

| | |
|--------|---------------|
| 201614 | 2.1×1.6×1.4mm |
| 252018 | 2.5×2.0×1.8mm |
| 322522 | 3.2×2.5×2.2mm |
| 453232 | 4.5×3.2×3.2mm |
| 565050 | 5.6×5.0×5.0mm |

(3) Packaging style

| | |
|---|---------------|
| T | Taping (reel) |
|---|---------------|

(4) Inductance value

| | |
|-----|------|
| 1R0 | 1μH |
| 330 | 33μH |

(5) Inductance tolerance

| | |
|---|------------|
| J | $\pm 5\%$ |
| K | $\pm 10\%$ |

PACKAGING STYLE AND QUANTITIES

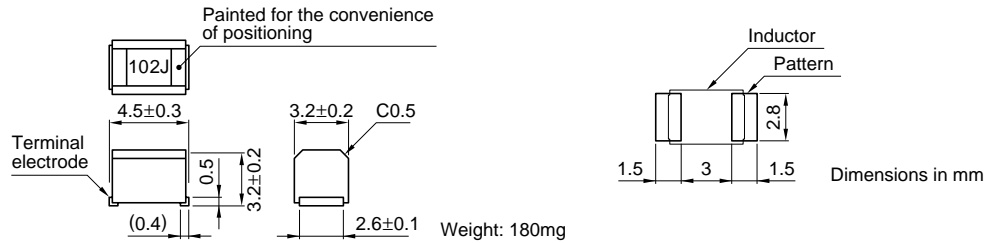
| Packaging style | Type | Quantity |
|-----------------|-----------|------------------|
| Taping | NL201614T | 2000 pieces/reel |
| | NL252018T | 2000 pieces/reel |
| | NL322522T | 2000 pieces/reel |
| | NL453232T | 500 pieces/reel |
| | NL565050T | 400 pieces/reel |

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SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



ELECTRICAL CHARACTERISTICS

| Inductance (μH) | Inductance tolerance | Q min. | Test frequency L, Q (MHz) | Self-resonant frequency (MHz)min. | DC resistance (Ω)max. | Rated current (mA)max. | Part No. |
|-----------------|----------------------|--------|---------------------------|-----------------------------------|-----------------------|------------------------|----------------|
| 1.0 | ±5% | 50 | 7.96 | 100.0 | 0.50 | 450 | NL453232T-1R0J |
| 1.2 | ±5% | 50 | 7.96 | 80.0 | 0.55 | 430 | NL453232T-1R2J |
| 1.5 | ±5% | 50 | 7.96 | 70.0 | 0.60 | 410 | NL453232T-1R5J |
| 1.8 | ±5% | 50 | 7.96 | 60.0 | 0.65 | 390 | NL453232T-1R8J |
| 2.2 | ±5% | 50 | 7.96 | 55.0 | 0.70 | 380 | NL453232T-2R2J |
| 2.7 | ±5% | 50 | 7.96 | 50.0 | 0.75 | 370 | NL453232T-2R7J |
| 3.3 | ±5% | 50 | 7.96 | 45.0 | 0.80 | 355 | NL453232T-3R3J |
| 3.9 | ±5% | 50 | 7.96 | 40.0 | 0.90 | 330 | NL453232T-3R9J |
| 4.7 | ±5% | 50 | 7.96 | 35.0 | 1.00 | 315 | NL453232T-4R7J |
| 5.6 | ±5% | 50 | 7.96 | 33.0 | 1.10 | 300 | NL453232T-5R6J |
| 6.8 | ±5% | 50 | 7.96 | 27.0 | 1.20 | 285 | NL453232T-6R8J |
| 8.2 | ±5% | 50 | 7.96 | 25.0 | 1.40 | 270 | NL453232T-8R2 |
| 10.0 | ±5% | 50 | 2.52 | 20.0 | 1.60 | 250 | NL453232T-100J |
| 12.0 | ±5% | 50 | 2.52 | 18.0 | 2.00 | 225 | NL453232T-120J |
| 15.0 | ±5% | 50 | 2.52 | 17.0 | 2.50 | 200 | NL453232T-150J |
| 18.0 | ±5% | 50 | 2.52 | 15.0 | 2.80 | 190 | NL453232T-180J |
| 22.0 | ±5% | 50 | 2.52 | 13.0 | 3.20 | 180 | NL453232T-220J |
| 27.0 | ±5% | 50 | 2.52 | 12.0 | 3.60 | 170 | NL453232T-270J |
| 33.0 | ±5% | 50 | 2.52 | 11.0 | 4.00 | 160 | NL453232T-330J |
| 39.0 | ±5% | 50 | 2.52 | 10.0 | 4.50 | 150 | NL453232T-390J |
| 47.0 | ±5% | 50 | 2.52 | 10.0 | 5.00 | 140 | NL453232T-470J |
| 56.0 | ±5% | 50 | 2.52 | 9.0 | 5.50 | 135 | NL453232T-560J |
| 68.0 | ±5% | 50 | 2.52 | 9.0 | 6.00 | 130 | NL453232T-680J |
| 82.0 | ±5% | 50 | 2.52 | 8.0 | 7.00 | 120 | NL453232T-820J |
| 100.0 | ±5% | 40 | 0.796 | 8.0 | 8.00 | 110 | NL453232T-101J |
| 120.0 | ±5% | 40 | 0.796 | 6.0 | 8.00 | 110 | NL453232T-121J |
| 150.0 | ±5% | 40 | 0.796 | 5.0 | 9.00 | 105 | NL453232T-151J |
| 180.0 | ±5% | 40 | 0.796 | 5.0 | 9.50 | 102 | NL453232T-181J |
| 220.0 | ±5% | 40 | 0.796 | 4.0 | 10.00 | 100 | NL453232T-221J |
| 270.0 | ±5% | 40 | 0.796 | 4.0 | 12.00 | 92 | NL453232T-271J |
| 330.0 | ±5% | 40 | 0.796 | 3.5 | 14.00 | 85 | NL453232T-331J |
| 390.0 | ±5% | 40 | 0.796 | 3.0 | 16.00 | 80 | NL453232T-391J |
| 470.0 | ±5% | 40 | 0.796 | 3.0 | 26.00 | 62 | NL453232T-471J |
| 560.0 | ±5% | 30 | 0.796 | 3.0 | 30.00 | 50 | NL453232T-561J |
| 680.0 | ±5% | 30 | 0.796 | 3.0 | 30.00 | 50 | NL453232T-681J |
| 820.0 | ±5% | 30 | 0.796 | 2.5 | 35.00 | 30 | NL453232T-821J |
| 1000.0 | ±5% | 30 | 0.252 | 2.5 | 40.00 | 30 | NL453232T-102J |

- Inductance tolerance is only standard.
- Test equipment L, Q: YHP4194A IMPEDANCE ANALYZER (16085A+16093B+TDK TF-1)
SRF: HP8753C NETWORK ANALYZER (Z_{in}=Z_{out}=50Ω)
Rdc: MATSUSHITA VP-2941A DIGITAL MILLIOHM METER

Inductors

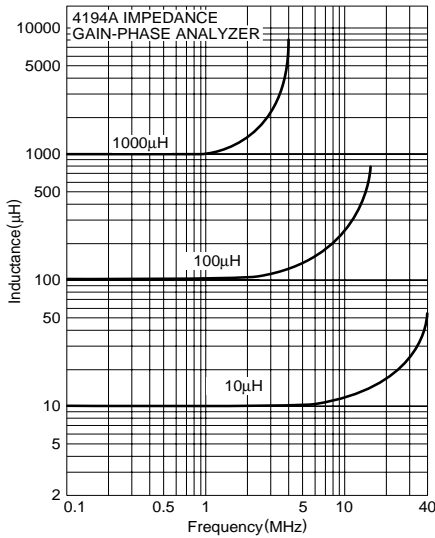
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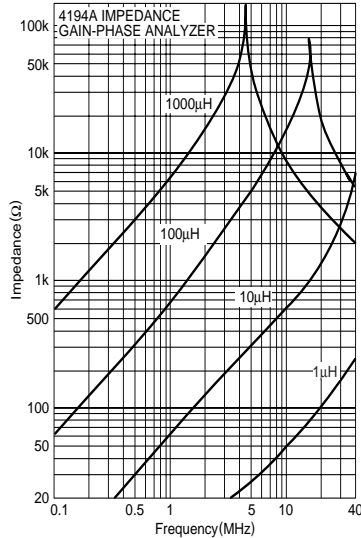
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TYPICAL ELECTRICAL CHARACTERISTICS

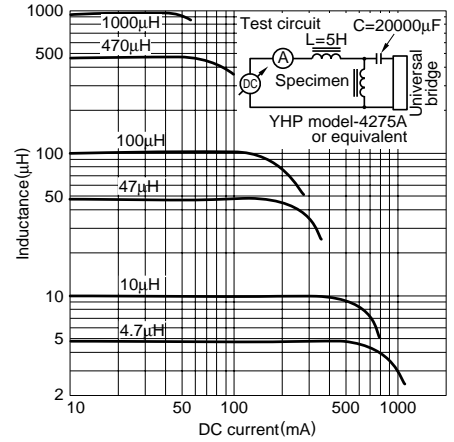
INDUCTANCE vs. FREQUENCY CHARACTERISTICS



IMPEDANCE vs. FREQUENCY CHARACTERISTICS

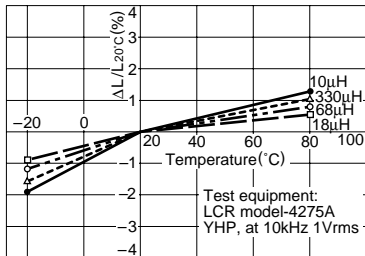


INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS

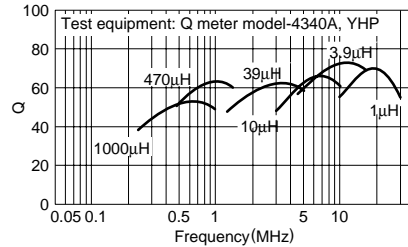


TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE CHANGE vs. TEMPERATURE CHARACTERISTICS



Q vs. FREQUENCY CHARACTERISTICS



T