

Negative Tempco Thermistor Type NT73

ISO 9001:2000
CERTIFIED
TS-16949
CERTIFIED

1. Features

- Anti-leaching nickel barrier terminations
- Twelve standard resistance values
- Suitable for reflow and wave soldering
- Marking: Black three-digit on pink body color

2. Dimensions

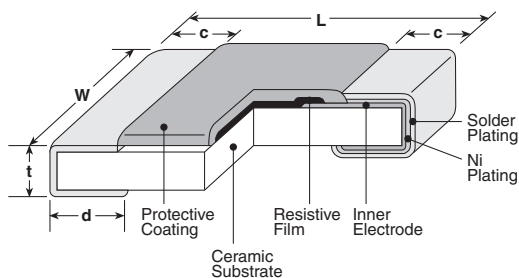


Table 1

| Dimensions - inches (mm) | | | | | |
|----------------------------|------------------------|-------------------------|------------------------|--|---|
| Type | L | W | c | d | t |
| 1J (0603) | .063±.008 (1.6±0.2) | .031±.004 (0.8±0.1) | .012±.004 (0.3±0.1) | .012±.004 (0.3±0.1) | .02±.004 (0.5±0.1) |
| 2A (0805) | .079±.008 (2.0±0.2) | .049±.004 (1.25±0.1) | .016±.008 (0.4±0.2) | .012 ^{+.008} _{-.004} (0.3 ^{+.02} _{-.01}) | .02 ^{+.008} _{-.004} (0.5 ^{+.02} _{-.01}) |
| 2B (1206) | .126±.008 (3.2±0.2) | .063±.008 (1.6±0.2) | .02±.008 (0.5±0.3) | .016 ^{+.008} _{-.004} (0.4 ^{+.02} _{-.01}) | .024±.004 (0.6±0.1) |

3. Type Designation

Type designation shall be as the following form.

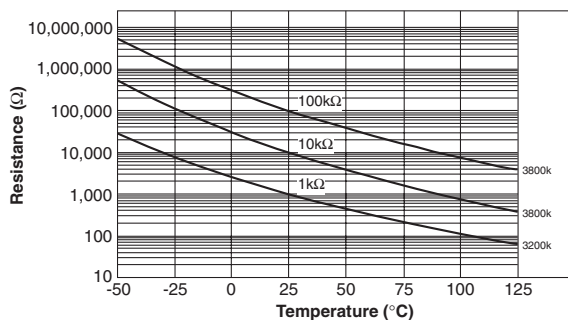
| | | | | | | | |
|-------------|----------------------------------|--|---------------------------------------|--------------------------------------|------------------------------|--|-----------------------------|
| NT73 | 2A | T | TD | 103 | K | 3800 | J |
| Type | Size Code | Termination Material | Packaging | Nominal Resistance | Resistance Tolerance | B Constant Nominal | B Constant Tolerance |
| | 1J: 0603 2A: 0805 2B: 1206 | T: Sn (Other termination styles available, contact factory for options) | TD: 7" Paper Tape (5,000 pieces/reel) | 2 Significant figures + 1 multiplier | J: ±5% K: ±10% L: ±15% | 3200 3500 3700 3800 3950 4100 | H: ±3% J: ±5% K: ±10% |

4. Applications and Ratings

| Part Designation | Resistance @ 25°C | Resistance Tolerance | B Constant @ 25°C/75°C | B Constant Tolerance | Thermal Dissipation Constant (mW/°C) | Power Rating (mW) | Operating Temperature Range |
|----------------------|--------------------|----------------------|------------------------|----------------------|--------------------------------------|-------------------|-----------------------------|
| NEW NT731J | 6.8kΩ | J: ±5% K: ±10% | 3500K | ±10% | 2 | 5 | -55°C to +125°C |
| | 10kΩ | | | ±5% | | | |
| | 15kΩ | | | ±3% | | | |
| | 10kΩ | | 3800K | ±5% | | | |
| | 20kΩ | | | | | | |
| | 22kΩ | | | | | | |
| | 30kΩ | | | | | | |
| | 33kΩ | | | | | | |
| | 47kΩ | | | | | | |
| | 68kΩ | | | | | | |
| 100kΩ | 4100K | ±3% | | | | | |
| 47kΩ | | | | | | | |
| NT732A | 1kΩ | K: ±10% L: ±15% | 3500K | ±10% | 2.8 | 5 | -55°C to +125°C |
| | 2kΩ | | | | | | |
| | 2.2kΩ | | | | | | |
| | 2.4kΩ | | | | | | |
| | 3.3kΩ | | | | | | |
| | 4.7kΩ | | | | | | |
| | 5kΩ | 3800K | ±5% | | | | |
| | 6.8kΩ | | | | | | |
| | 10kΩ | | | | | | |
| | 15kΩ | | | | | | |
| | 10kΩ | | | | | | |
| | 20kΩ | | | | | | |
| | 22kΩ | | | | | | |
| | 30kΩ | | | | | | |
| | 33kΩ | | | | | | |
| | 47kΩ | | | | | | |
| | 68kΩ | 4100K | ±3% | | | | |
| | 100kΩ | | | | | | |
| | 150kΩ | | | | | | |
| | 50kΩ | | | | | | |
| | 10kΩ | | | | | | |
| | 15kΩ | | | | | | |
| | 22kΩ | 3200K | ±10% | | | | |
| | 30kΩ | | | | | | |
| | 33kΩ | | | | | | |
| | 47kΩ | | | | | | |
| 68kΩ | | | | | | | |
| 100kΩ | | | | | | | |
| 150kΩ | | | | | | | |
| 1kΩ | K: ±10% L: ±15% | | | ±10% | | | |
| 2.2kΩ | | | | | | | |
| 3.3kΩ | | | | | | | |
| 4.7kΩ | | | | | | | |
| 6.8kΩ | | | | | | | |
| 10kΩ | | | | | | | |
| 22kΩ | 3800K | ±5% | | | | | |
| 33kΩ | | | | | | | |
| 47kΩ | | | | | | | |
| 68kΩ | | | | | | | |
| 100kΩ | | | | | | | |
| 100kΩ | | | | | | | |

5. Environmental Applications

5.1 Temperature Characteristics



5.2 RT/R25 Ratio vs. B Constant

RT/R25 Ratio vs. B Constant

| Resistance | 1k Ω | 5k Ω | 10k Ω | 100k Ω | 10k Ω | Resistance | 1k Ω | 5k Ω | 10k Ω | 100k Ω | 10k Ω |
|------------|--------|--------|--------|--------|--------|------------|--------|---------|---------|--------|---------|
| B Constant | 3200K | 3500K | 3700K | 3800K | 4100K | B Constant | 3200K | 3500K | 3700K | 3800K | 4100K |
| Temp. (°C) | Ω | k Ω | k Ω | k Ω | k Ω | Temp. (°C) | Ω | k Ω | k Ω | k Ω | k Ω |
| -55 | 38770 | 273.24 | 638.23 | 7692.5 | 1203.1 | 40 | 604.07 | 2.8809 | 5.5500 | 54.959 | 5.1999 |
| -50 | 28840 | 197.67 | 465.81 | 5414.6 | 820.76 | 45 | 515.10 | 2.4202 | 4.6100 | 45.484 | 4.2349 |
| -45 | 21706 | 144.85 | 343.25 | 3964.5 | 568.09 | 50 | 441.00 | 2.0421 | 3.8500 | 37.823 | 3.4692 |
| -40 | 16517 | 107.43 | 255.22 | 2794.3 | 398.57 | 55 | 379.00 | 1.7302 | 3.2300 | 31.594 | 2.8585 |
| -35 | 12698 | 80.577 | 191.37 | 2045.2 | 283.20 | 60 | 326.90 | 1.4718 | 2.7200 | 26.506 | 2.3682 |
| -30 | 9857.0 | 61.077 | 144.64 | 1514.1 | 203.64 | 65 | 282.95 | 1.2568 | 2.3100 | 22.330 | 1.9721 |
| -25 | 7721.2 | 46.759 | 110.13 | 1133.0 | 148.07 | 70 | 245.72 | 1.0771 | 1.9700 | 18.886 | 1.6504 |
| -20 | 6100.5 | 36.137 | 83.710 | 856.49 | 108.37 | 75 | 214.08 | 0.92637 | 1.6800 | 16.035 | 1.3877 |
| -15 | 4858.7 | 28.173 | 64.190 | 653.63 | 80.182 | 80 | 187.08 | 0.79937 | 1.4500 | 13.663 | 1.1724 |
| -10 | 3899.0 | 22.147 | 49.640 | 503.31 | 59.943 | 85 | 163.96 | 0.69199 | 1.2500 | 11.682 | 0.99491 |
| -5 | 3151.3 | 17.546 | 38.680 | 390.86 | 45.252 | 90 | 144.11 | 0.60087 | 1.0800 | 10.022 | 0.84926 |
| 0 | 2564.2 | 14.004 | 30.370 | 305.97 | 34.478 | 95 | 127.00 | 0.52329 | 0.94000 | 8.6257 | 0.72802 |
| 5 | 2099.9 | 11.256 | 23.970 | 241.34 | 26.473 | 100 | 112.21 | 0.45701 | 0.82000 | 7.4466 | 0.62862 |
| 10 | 1730.0 | 9.1063 | 19.070 | 191.73 | 20.506 | 105 | 99.377 | 0.40016 | 0.72000 | 6.4466 | 0.54156 |
| 15 | 1433.5 | 7.4135 | 15.270 | 153.36 | 16.016 | 110 | 88.224 | 0.35129 | 0.63000 | 5.5968 | 0.46982 |
| 20 | 1194.2 | 6.0712 | 12.320 | 123.46 | 12.608 | 115 | 78.501 | 0.30915 | 0.56000 | 4.8721 | 0.40906 |
| 25 | 1000.0 | 5.0000 | 10.000 | 100.00 | 10.000 | 120 | 70.004 | 0.27272 | 0.49000 | 4.2523 | 0.35741 |
| 30 | 841.48 | 4.1398 | 8.1700 | 81.470 | 7.9880 | 125 | 62.558 | 0.24114 | 0.44000 | 3.7207 | 0.31332 |
| 35 | 711.39 | 3.4451 | 6.7100 | 66.739 | 6.4242 | | | | | | |

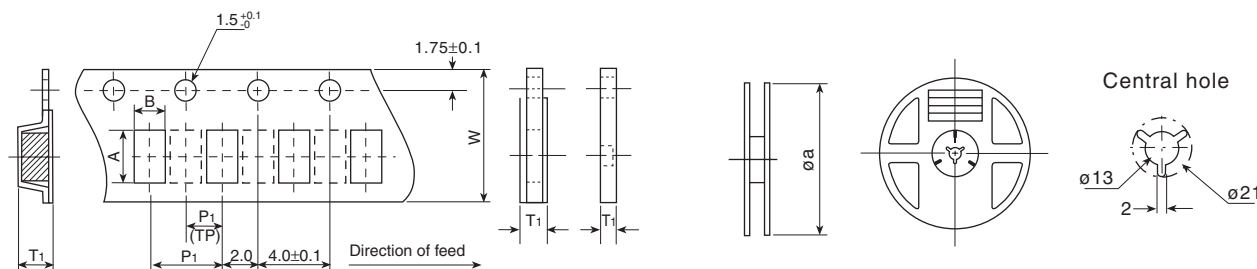
Note: RT/R25 ratio is the resistance at temperature (T) divided by the nominal resistance at 25°C. The RT/R25 ratio value is multiplied by the thermistor's nominal 25°C value to determine the nominal resistance value at a given temperature in the chart above.

6. Performance Characteristics

| Parameter | Maximum ΔR | Test Method |
|---|------------------------------|---|
| High Temperature Exposure | $\pm 3.0\%$ | 1000 hours @ 80°C |
| Resistance to Solder Heat | $\pm 1.0\%$ | MIL-R-55342 π 4.7.7, 260°C for 10 seconds |
| Terminal Strength-Bend | $\pm 1.0\%$ | 2mm min. deflection in either direction for 10 seconds |
| Moisture Resistance | $\pm 3.0\%$ | MIL-STD-202, Method 103, 40°C, 90 - 95% RH, 1000 hours |
| Life | $\pm 3.0\%$ | 80°C, DC 5mm, 1000 hours |
| Temperature Cycling | $\pm 3.0\%$ | 30 minutes @ -55°C, 15 minutes @ +25°C, 30 minutes @ +125°C, 15 minutes @ +25°C, 50 cycles |
| Dielectric Withstanding Voltage 2A 2B | 400V 400V | 1 minute minimum MIL-STD-202, Method 301 |
| Insulation Resistance | 10,000 M Ω Minimum | — |

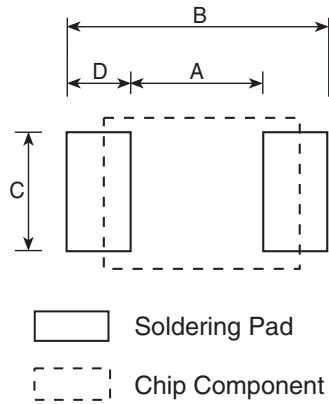
Note: RT/R25 ratio is the resistance at temperature (T) divided by the nominal resistance at 25°C. The RT/R25 ratio value is multiplied by the thermistor's nominal 25°C value to determine the nominal resistance value at a given temperature in the chart above.

7. Packaging Information



| Type | Component Size (mm) | | | Carrier Tape | Quantity/ Reel (Pieces) | Taping (mm) | | | | | Reel Size |
|---------|---------------------|------|------|--------------|-------------------------|-------------|----------|---------|---------|-------------|-----------|
| | L | W | T | | | A | B | W | P1 | T1 | |
| NT73 1J | 14.6 | 0.8 | 0.45 | TD | 5000 | 1.9±0.1 | 1.1±0.1 | 8.0±0.2 | 4.0±0.1 | 0.6+0.2/-0 | 178 |
| 2A | 2 | 1.25 | 0.5 | TD | 5000 | 2.4±0.2 | 1.65±0.2 | 8.0±0.2 | 4.0±0.1 | 0.75+0.2/-0 | 178 |
| 2B | 3.2 | 1.6 | 0.6 | TD | 5000 | 3.5±0.2 | 2±0.2 | 8.0±0.2 | 4.0±0.1 | 0.75+0.2/-0 | 178 |

8. Pad Dimensions



| NT73 | Size | A | B | C | D |
|-------------|-------------|----------|----------|----------|----------|
| 1J | 1.6 x 0.8 | 0.8 | 2.6 | 0.8 | 0.9 |
| 2A | 2.0 x 1.25 | 1.2 | 3.0 | 1.2 | 0.9 |
| 2B | 3.2 x 1.6 | 2.2 | 4.2 | 1.5 | 1.0 |

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Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru