

NTC Thermistors, Low Thermal Gradient Lug Sensors



FEATURES

- Low thermal gradient due to the use of nickel conductor and low profile closed ring tongue
- AEC-Q200 qualified (grade 1)
- UL recognized, file E148885 (UL category XGPU2)
- Mounting: assembly screw mounting
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

| QUICK REFERENCE DATA | | |
|--|---------------------|-----------------|
| PARAMETER | VALUE | UNIT |
| Resistance value at 25 °C | 4.7K to 100K | Ω |
| Tolerance on R_{25} -value | ± 1; ± 2; ± 3 | % |
| $B_{25/85}$ value | 3435 to 4190 | K |
| Tolerance on $B_{25/85}$ -value | ± 0.5; ± 1.0; ± 1.5 | % |
| Operating temperature range at zero power | -55 to +125 | °C |
| Maximum dissipation at 25 °C | 100 | mW |
| Thermal time constant τ | ≈ 5 | s |
| Dissipation factor | 10 | mW/K |
| Thermal gradient | < 0.05 | K/K |
| Min. dielectric withstanding voltage between terminals and lug | 1500 | V _{AC} |
| Climatic category (LCT/UCT/days) | 55 / 125 / 56 | |
| Weight | ≈ 1.0 | g |

APPLICATIONS

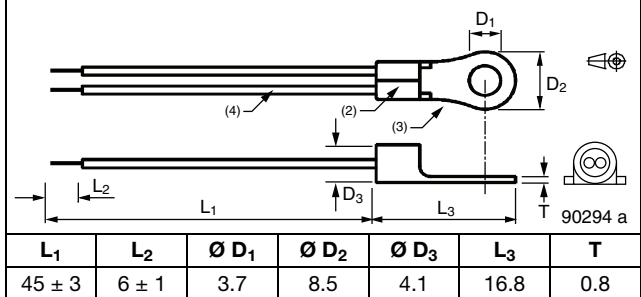
Thermistors used for accurate surface temperature sensing and control in:

- Computer equipment
- Power electronics, heat-sink temperature control
- Consumer appliances
- Industrial equipment
- Automotive equipment

MOUNTING

The device is suitable for screwing e.g. on a metal surface through means of an M3 screw. The connections are suitable for soldering on a PCB or for connector insertion. The sensor is not suitable for being in permanent contact with water or liquids.

DIMENSIONS in millimeters



DESCRIPTION

Vishay thermistor chip NTC with epoxy coating and middle buffer layer ⁽²⁾ mounted in a ⁽³⁾ metal ring lug with ⁽⁴⁾ PEEK insulated leads AWG#30 (Ø 0.25 mm), mono-stranded silver-plated nickel (insulation Ø 0.56 mm).

DESIGNERS TOOL

- NTC thermistor curve computation (Resistance/Temperature) is available at: www.vishay.com/thermistors/curve-computation-list/
- Other applicable screw size are available, for example stud size metric 3 mm/American 3 to 4
- 3D or 2D solid models are available
Refer to www.vishay.com/doc?29106
- Other R/T-curves and tolerances available on request
- Other lead length, insulation or connector crimping available on request
- AWG#28 or AWG#26 wires available on request

| ELECTRICAL DATA AND ORDERING INFORMATION | | | | | |
|--|---------------|-------------------|------------------------|----------------------|------------------|
| SAP MATERIAL AND ORDERING NUMBER | R_{25} (kΩ) | R_{25} TOL. (%) | $B_{25/85}$ -VALUE (K) | $B_{25/85}$ TOL. (%) | UL CERTIFICATION |
| NTCALUG02A472G | 4.7 | ± 2 | 3984 | ± 0.5 | - |
| NTCALUG02A472F | 4.7 | ± 1 | 3984 | ± 0.5 | - |
| NTCALUG02A502G | 5 | ± 2 | 3984 | ± 0.5 | UL |
| NTCALUG02A103G ⁽¹⁾ | 10 | ± 2 | 3984 | ± 0.5 | UL |
| NTCALUG02A103F | 10 | ± 1 | 3984 | ± 0.5 | UL |
| NTCALUG02A103FL | 10 | ± 1 | 3435 | ± 1.0 | UL |
| NTCALUG02A104H | 100 | ± 3 | 4190 | ± 1.5 | - |

Note

⁽¹⁾ Is also known under material number NTCALUGE4C90294/2381 645 90294.



| | |
|----------------|----------------------------------|
| NTCALUG02A472G | NTC LUG02A 4.7K 2 % 3984 K 0.5 % |
|----------------|----------------------------------|

| RESISTANCE TEMPERATURE CHARACTERISTICS | | | | | | | |
|--|---------------|----------------|------------------|----------------|----------------|----------------|----------------|
| TEMP. (°C) | $R(T)/R_{25}$ | RESISTANCE (Ω) | $\Delta R/R$ (%) | α (%/K) | ΔT (K) | $R_{min.}$ (Ω) | $R_{max.}$ (Ω) |
| -40 | 33.43 | 157 109 | 3.90 | -6.63 | 0.59 | 150 982 | 163 236 |
| -35 | 24.13 | 113 422 | 3.72 | -6.41 | 0.58 | 109 206 | 117 638 |
| -30 | 17.61 | 82 782 | 3.54 | -6.19 | 0.57 | 79 851 | 85714 |
| -25 | 12.99 | 61 053 | 3.37 | -5.99 | 0.56 | 58 994 | 63 112 |
| -20 | 9.68 | 45 478 | 3.21 | -5.79 | 0.55 | 44 017 | 46 938 |
| -15 | 7.276 | 34 199 | 3.06 | -5.61 | 0.54 | 33 154 | 35 244 |
| -10 | 5.522 | 25 953 | 2.91 | -5.43 | 0.54 | 25 198 | 26 707 |
| -5 | 4.227 | 19 866 | 2.76 | -5.26 | 0.53 | 19 317 | 20 415 |
| 0 | 3.262 | 15 333 | 2.62 | -5.10 | 0.51 | 14 931 | 15 736 |
| 5 | 2.538 | 11 929 | 2.49 | -4.94 | 0.50 | 11 632 | 12 226 |
| 10 | 1.990 | 9352 | 2.36 | -4.80 | 0.49 | 9131 | 9572 |
| 15 | 1.571 | 7384 | 2.24 | -4.65 | 0.48 | 7219 | 7549 |
| 20 | 1.249 | 5872 | 2.12 | -4.52 | 0.47 | 5747 | 5996 |
| 25 | 1.000 | 4700 | 2.00 | -4.39 | 0.46 | 4606 | 4794 |
| 30 | 0.8056 | 3786 | 2.11 | -4.26 | 0.50 | 3706 | 3866 |
| 35 | 0.6530 | 3069 | 2.22 | -4.14 | 0.54 | 3001 | 3137 |
| 40 | 0.5324 | 2502 | 2.33 | -4.03 | 0.58 | 2444 | 2560 |
| 45 | 0.4365 | 2052 | 2.43 | -3.92 | 0.62 | 2002 | 2102 |
| 50 | 0.3599 | 1691 | 2.53 | -3.81 | 0.66 | 1649 | 1734 |
| 55 | 0.2982 | 1402 | 2.62 | -3.71 | 0.71 | 1365 | 1438 |
| 60 | 0.2484 | 1167 | 2.72 | -3.61 | 0.75 | 1136 | 1199 |
| 65 | 0.2079 | 977.0 | 2.81 | -3.51 | 0.80 | 949.6 | 1004 |
| 70 | 0.1748 | 821.4 | 2.89 | -3.42 | 0.85 | 797.6 | 845.2 |
| 75 | 0.1476 | 693.7 | 2.98 | -3.34 | 0.89 | 673.0 | 714.3 |
| 80 | 0.1252 | 588.3 | 3.06 | -3.25 | 0.94 | 570.3 | 606.4 |
| 85 | 0.1066 | 501.1 | 3.14 | -3.17 | 0.99 | 485.3 | 516.8 |
| 90 | 0.09116 | 428.4 | 3.22 | -3.09 | 1.04 | 414.7 | 442.2 |
| 95 | 0.07825 | 367.8 | 3.30 | -3.02 | 1.09 | 355.6 | 379.9 |
| 100 | 0.06741 | 316.8 | 3.37 | -2.94 | 1.14 | 306.2 | 327.5 |
| 105 | 0.05828 | 273.9 | 3.44 | -2.87 | 1.20 | 264.5 | 283.4 |
| 110 | 0.05057 | 237.7 | 3.51 | -2.81 | 1.25 | 229.3 | 246.0 |
| 115 | 0.04402 | 206.9 | 3.58 | -2.74 | 1.31 | 199.5 | 214.3 |
| 120 | 0.03844 | 180.7 | 3.65 | -2.68 | 1.36 | 174.1 | 187.3 |
| 125 | 0.03367 | 158.3 | 3.71 | -2.62 | 1.42 | 152.4 | 164.1 |



NTCALUG02A472F

NTC LUG02A 4.7K 1 % 3984 K 0.5 %

RESISTANCE TEMPERATURE CHARACTERISTICS

| TEMP. (°C) | R_T | RESISTANCE (Ω) | $\Delta R/R$ (%) | α (%/K) | ΔT (K) | $R_{min.}$ (Ω) | $R_{max.}$ (Ω) |
|---------------|---------|----------------------------|---------------------|-------------------|-------------------|----------------------------|----------------------------|
| -40 | 33.43 | 157 109 | 2.88 | -6.63 | 0.43 | 152 582 | 161 636 |
| -35 | 24.13 | 113 422 | 2.70 | -6.41 | 0.42 | 110 359 | 116 484 |
| -30 | 17.61 | 82 782 | 2.53 | -6.19 | 0.41 | 80 691 | 84 874 |
| -25 | 12.99 | 61 053 | 2.36 | -5.99 | 0.39 | 59 612 | 62 494 |
| -20 | 9.68 | 45 478 | 2.20 | -5.79 | 0.38 | 44 477 | 46 478 |
| -15 | 7.276 | 34 199 | 2.05 | -5.61 | 0.36 | 33 500 | 34 899 |
| -10 | 5.522 | 25 953 | 1.90 | -5.43 | 0.35 | 25 460 | 26 445 |
| -5 | 4.227 | 19 866 | 1.75 | -5.26 | 0.33 | 19 517 | 20 215 |
| 0 | 3.262 | 15 333 | 1.62 | -5.10 | 0.32 | 15 085 | 15 581 |
| 5 | 2.538 | 11 929 | 1.49 | -4.94 | 0.30 | 11 752 | 12 106 |
| 10 | 1.990 | 9352 | 1.36 | -4.80 | 0.28 | 9225 | 9478 |
| 15 | 1.571 | 7384 | 1.23 | -4.65 | 0.27 | 7293 | 7475 |
| 20 | 1.249 | 5872 | 1.12 | -4.52 | 0.25 | 5806 | 5937 |
| 25 | 1.000 | 4700 | 1.00 | -4.39 | 0.23 | 4653 | 4747 |
| 30 | 0.8056 | 3786 | 1.11 | -4.26 | 0.26 | 3744 | 3828 |
| 35 | 0.6530 | 3069 | 1.22 | -4.14 | 0.29 | 3032 | 3106 |
| 40 | 0.5324 | 2502 | 1.32 | -4.03 | 0.33 | 2469 | 2535 |
| 45 | 0.4365 | 2052 | 1.42 | -3.92 | 0.36 | 2022 | 2081 |
| 50 | 0.3599 | 1691 | 1.52 | -3.81 | 0.40 | 1666 | 1717 |
| 55 | 0.2982 | 1402 | 1.62 | -3.71 | 0.44 | 1379 | 1424 |
| 60 | 0.2484 | 1167 | 1.71 | -3.61 | 0.47 | 1147 | 1187 |
| 65 | 0.2079 | 977.0 | 1.80 | -3.51 | 0.51 | 959.4 | 994.5 |
| 70 | 0.1748 | 821.4 | 1.88 | -3.42 | 0.55 | 805.9 | 836.9 |
| 75 | 0.1476 | 693.7 | 1.97 | -3.34 | 0.59 | 680.0 | 707.3 |
| 80 | 0.1252 | 588.3 | 2.05 | -3.25 | 0.63 | 576.3 | 600.4 |
| 85 | 0.1066 | 501.1 | 2.13 | -3.17 | 0.67 | 490.4 | 511.7 |
| 90 | 0.09116 | 428.4 | 2.21 | -3.09 | 0.71 | 419.0 | 437.9 |
| 95 | 0.07825 | 367.8 | 2.28 | -3.02 | 0.76 | 359.4 | 376.2 |
| 100 | 0.06741 | 316.8 | 2.36 | -2.94 | 0.80 | 309.4 | 324.3 |
| 105 | 0.05828 | 273.9 | 2.43 | -2.87 | 0.84 | 267.3 | 280.6 |
| 110 | 0.05057 | 237.7 | 2.50 | -2.81 | 0.89 | 231.7 | 243.6 |
| 115 | 0.04402 | 206.9 | 2.56 | -2.74 | 0.94 | 201.6 | 212.2 |
| 120 | 0.03844 | 180.7 | 2.63 | -2.68 | 0.98 | 175.9 | 185.4 |
| 125 | 0.03367 | 158.3 | 2.69 | -2.62 | 1.03 | 154.0 | 162.5 |



NTCALUG02A502G

NTC LUG02A 5K 2 % 3984 K 0.5 %

RESISTANCE TEMPERATURE CHARACTERISTICS

| TEMP. (°C) | $R(T)/R_{25}$ | RESISTANCE (Ω) | $\Delta R/R$ (%) | α (%/K) | ΔT (K) | $R_{min.}$ (Ω) | $R_{max.}$ (Ω) |
|---------------|---------------|----------------------------|---------------------|-------------------|-------------------|----------------------------|----------------------------|
| -40 | 33.43 | 167 137 | 3.90 | -6.63 | 0.59 | 160 619 | 173 655 |
| -35 | 24.13 | 120 661 | 3.72 | -6.41 | 0.58 | 116 177 | 125 146 |
| -30 | 17.61 | 88 066 | 3.54 | -6.19 | 0.57 | 84 947 | 91 185 |
| -25 | 12.99 | 64 950 | 3.37 | -5.99 | 0.56 | 62 759 | 67 141 |
| -20 | 9.68 | 48 381 | 3.21 | -5.79 | 0.55 | 46 827 | 49 934 |
| -15 | 7.276 | 36 382 | 3.06 | -5.61 | 0.54 | 35 270 | 37 494 |
| -10 | 5.522 | 27 609 | 2.91 | -5.43 | 0.54 | 26 807 | 28 411 |
| -5 | 4.227 | 21 134 | 2.76 | -5.26 | 0.53 | 20 550 | 21 718 |
| 0 | 3.262 | 16 312 | 2.62 | -5.10 | 0.51 | 15 884 | 16 740 |
| 5 | 2.538 | 12 691 | 2.49 | -4.94 | 0.50 | 12 375 | 13 007 |
| 10 | 1.990 | 9948 | 2.36 | -4.80 | 0.49 | 9714 | 10 183 |
| 15 | 1.571 | 7856 | 2.24 | -4.65 | 0.48 | 7680 | 8031 |
| 20 | 1.249 | 6246 | 2.12 | -4.52 | 0.47 | 6114 | 6379 |
| 25 | 1.000 | 5000 | 2.00 | -4.39 | 0.46 | 4900 | 5100 |
| 30 | 0.8056 | 4028 | 2.11 | -4.26 | 0.50 | 3943 | 4113 |
| 35 | 0.6530 | 3265 | 2.22 | -4.14 | 0.54 | 3192 | 3337 |
| 40 | 0.5324 | 2662 | 2.33 | -4.03 | 0.58 | 2600 | 2724 |
| 45 | 0.4365 | 2183 | 2.43 | -3.92 | 0.62 | 2130 | 2236 |
| 50 | 0.3599 | 1799 | 2.53 | -3.81 | 0.66 | 1754 | 1845 |
| 55 | 0.2982 | 1491 | 2.62 | -3.71 | 0.71 | 1452 | 1530 |
| 60 | 0.2484 | 1242 | 2.72 | -3.61 | 0.75 | 1208 | 1276 |
| 65 | 0.2079 | 1039 | 2.81 | -3.51 | 0.80 | 1010 | 1068 |
| 70 | 0.1748 | 873.8 | 2.89 | -3.42 | 0.85 | 848.5 | 899.1 |
| 75 | 0.1476 | 738.0 | 2.98 | -3.34 | 0.89 | 716.0 | 759.9 |
| 80 | 0.1252 | 625.9 | 3.06 | -3.25 | 0.94 | 606.7 | 645.1 |
| 85 | 0.1066 | 533.1 | 3.14 | -3.17 | 0.99 | 516.3 | 549.8 |
| 90 | 0.09116 | 455.8 | 3.22 | -3.09 | 1.04 | 441.1 | 470.5 |
| 95 | 0.07825 | 391.2 | 3.30 | -3.02 | 1.09 | 378.3 | 404.1 |
| 100 | 0.06741 | 337.1 | 3.37 | -2.94 | 1.14 | 325.7 | 348.4 |
| 105 | 0.05828 | 291.4 | 3.44 | -2.87 | 1.20 | 281.4 | 301.5 |
| 110 | 0.05057 | 252.8 | 3.51 | -2.81 | 1.25 | 244.0 | 261.7 |
| 115 | 0.04402 | 220.1 | 3.58 | -2.74 | 1.31 | 212.2 | 228.0 |
| 120 | 0.03844 | 192.2 | 3.65 | -2.68 | 1.36 | 185.2 | 199.2 |
| 125 | 0.03367 | 168.4 | 3.71 | -2.62 | 1.42 | 162.1 | 174.6 |



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| NTCALUG02A103G | NTC LUG02A 10K 2 % 3984 K 0.5 % |
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| RESISTANCE TEMPERATURE CHARACTERISTICS | | | | | | | |
|--|------------------|----------------|------------------|----------------|----------------|----------------|----------------|
| TEMP. (°C) | $R_{(T)}/R_{25}$ | RESISTANCE (Ω) | $\Delta R/R$ (%) | α (%/K) | ΔT (K) | $R_{min.}$ (Ω) | $R_{max.}$ (Ω) |
| -40 | 33.43 | 334 274 | 3.90 | -6.63 | 0.59 | 321 238 | 347 311 |
| -35 | 24.13 | 241 323 | 3.72 | -6.41 | 0.58 | 232 353 | 250 293 |
| -30 | 17.61 | 176 133 | 3.54 | -6.19 | 0.57 | 169 895 | 182 370 |
| -25 | 12.99 | 129 900 | 3.37 | -5.99 | 0.56 | 125 518 | 134 282 |
| -20 | 9.68 | 96 761 | 3.21 | -5.79 | 0.55 | 93 654 | 99 869 |
| -15 | 7.276 | 72 765 | 3.06 | -5.61 | 0.54 | 70 541 | 74 988 |
| -10 | 5.522 | 55 218 | 2.91 | -5.43 | 0.54 | 53 613 | 56 823 |
| -5 | 4.227 | 42 268 | 2.76 | -5.26 | 0.53 | 41 100 | 43 435 |
| 0 | 3.262 | 32 624 | 2.62 | -5.10 | 0.51 | 31 768 | 33 480 |
| 5 | 2.538 | 25 381 | 2.49 | -4.94 | 0.50 | 24 749 | 26 013 |
| 10 | 1.990 | 19 897 | 2.36 | -4.80 | 0.49 | 19 427 | 20 367 |
| 15 | 1.571 | 15 711 | 2.24 | -4.65 | 0.48 | 15 360 | 16 063 |
| 20 | 1.249 | 12 493 | 2.12 | -4.52 | 0.47 | 12 228 | 12 757 |
| 25 | 1.000 | 10 000 | 2.00 | -4.39 | 0.46 | 9800 | 10 200 |
| 30 | 0.8056 | 8056 | 2.11 | -4.26 | 0.50 | 7886 | 8226 |
| 35 | 0.6530 | 6530 | 2.22 | -4.14 | 0.54 | 6385 | 6675 |
| 40 | 0.5324 | 5324 | 2.33 | -4.03 | 0.58 | 5200 | 5448 |
| 45 | 0.4365 | 4365 | 2.43 | -3.92 | 0.62 | 4259 | 4471 |
| 50 | 0.3599 | 3599 | 2.53 | -3.81 | 0.66 | 3508 | 3690 |
| 55 | 0.2982 | 2982 | 2.62 | -3.71 | 0.71 | 2904 | 3060 |
| 60 | 0.2484 | 2484 | 2.72 | -3.61 | 0.75 | 2416 | 2551 |
| 65 | 0.2079 | 2079 | 2.81 | -3.51 | 0.80 | 2020 | 2137 |
| 70 | 0.1748 | 1748 | 2.89 | -3.42 | 0.85 | 1697 | 1798 |
| 75 | 0.1476 | 1476 | 2.98 | -3.34 | 0.89 | 1432 | 1520 |
| 80 | 0.1252 | 1252 | 3.06 | -3.25 | 0.94 | 1213 | 1290 |
| 85 | 0.1066 | 1066 | 3.14 | -3.17 | 0.99 | 1033 | 1100 |
| 90 | 0.09116 | 911.6 | 3.22 | -3.09 | 1.04 | 882.2 | 940.9 |
| 95 | 0.07825 | 782.5 | 3.30 | -3.02 | 1.09 | 756.7 | 808.2 |
| 100 | 0.06741 | 674.1 | 3.37 | -2.94 | 1.14 | 651.4 | 696.8 |
| 105 | 0.05828 | 582.8 | 3.44 | -2.87 | 1.20 | 562.8 | 602.9 |
| 110 | 0.05057 | 505.7 | 3.51 | -2.81 | 1.25 | 487.9 | 523.4 |
| 115 | 0.04402 | 440.2 | 3.58 | -2.74 | 1.31 | 424.4 | 455.9 |
| 120 | 0.03844 | 384.4 | 3.65 | -2.68 | 1.36 | 370.4 | 398.4 |
| 125 | 0.03367 | 336.7 | 3.71 | -2.62 | 1.42 | 324.2 | 349.2 |



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| NTCALUG02A103F | NTC LUG02A 10K 1 % 3984 K 0.5 % |
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| RESISTANCE TEMPERATURE CHARACTERISTICS | | | | | | | |
|--|------------------|----------------|------------------|----------------|----------------|----------------|----------------|
| TEMP. (°C) | $R_{(T)}/R_{25}$ | RESISTANCE (Ω) | $\Delta R/R$ (%) | α (%/K) | ΔT (K) | $R_{min.}$ (Ω) | $R_{max.}$ (Ω) |
| -40 | 33.43 | 334 274 | 2.88 | -6.63 | 0.43 | 324 643 | 343 906 |
| -35 | 24.13 | 241 323 | 2.70 | -6.41 | 0.42 | 234 807 | 247 839 |
| -30 | 17.61 | 176 133 | 2.53 | -6.19 | 0.41 | 171 683 | 180 582 |
| -25 | 12.99 | 129 900 | 2.36 | -5.99 | 0.39 | 126 835 | 132 965 |
| -20 | 9.68 | 96 761 | 2.20 | -5.79 | 0.38 | 94 633 | 98 889 |
| -15 | 7.276 | 72 765 | 2.05 | -5.61 | 0.36 | 71 276 | 74 253 |
| -10 | 5.522 | 55 218 | 1.90 | -5.43 | 0.35 | 54 170 | 56 266 |
| -5 | 4.227 | 42 268 | 1.75 | -5.26 | 0.33 | 41 526 | 43 010 |
| 0 | 3.262 | 32 624 | 1.62 | -5.10 | 0.32 | 32 096 | 33 152 |
| 5 | 2.538 | 25 381 | 1.49 | -4.94 | 0.30 | 25 004 | 25 758 |
| 10 | 1.990 | 19 897 | 1.36 | -4.80 | 0.28 | 19 627 | 20 167 |
| 15 | 1.571 | 15 711 | 1.23 | -4.65 | 0.27 | 15 517 | 15 905 |
| 20 | 1.249 | 12 493 | 1.12 | -4.52 | 0.25 | 12 353 | 12 632 |
| 25 | 1.000 | 10 000 | 1.00 | -4.39 | 0.23 | 9900 | 10 100 |
| 30 | 0.8056 | 8056 | 1.11 | -4.26 | 0.26 | 7966 | 8145 |
| 35 | 0.6530 | 6530 | 1.22 | -4.14 | 0.29 | 6450 | 6609 |
| 40 | 0.5324 | 5324 | 1.32 | -4.03 | 0.33 | 5253 | 5394 |
| 45 | 0.4365 | 4365 | 1.42 | -3.92 | 0.36 | 4303 | 4427 |
| 50 | 0.3599 | 3599 | 1.52 | -3.81 | 0.40 | 3544 | 3653 |
| 55 | 0.2982 | 2982 | 1.62 | -3.71 | 0.44 | 2934 | 3030 |
| 60 | 0.2484 | 2484 | 1.71 | -3.61 | 0.47 | 2441 | 2526 |
| 65 | 0.2079 | 2079 | 1.80 | -3.51 | 0.51 | 2041 | 2116 |
| 70 | 0.1748 | 1748 | 1.88 | -3.42 | 0.55 | 1715 | 1781 |
| 75 | 0.1476 | 1476 | 1.97 | -3.34 | 0.59 | 1447 | 1505 |
| 80 | 0.1252 | 1252 | 2.05 | -3.25 | 0.63 | 1226 | 1277 |
| 85 | 0.1066 | 1066 | 2.13 | -3.17 | 0.67 | 1043 | 1089 |
| 90 | 0.09116 | 911.6 | 2.21 | -3.09 | 0.71 | 891.5 | 931.7 |
| 95 | 0.07825 | 782.5 | 2.28 | -3.02 | 0.76 | 764.6 | 800.3 |
| 100 | 0.06741 | 674.1 | 2.36 | -2.94 | 0.80 | 658.2 | 690.0 |
| 105 | 0.05828 | 582.8 | 2.43 | -2.87 | 0.84 | 568.7 | 597.0 |
| 110 | 0.05057 | 505.7 | 2.50 | -2.81 | 0.89 | 493.0 | 518.3 |
| 115 | 0.04402 | 440.2 | 2.56 | -2.74 | 0.94 | 428.9 | 451.5 |
| 120 | 0.03844 | 384.4 | 2.63 | -2.68 | 0.98 | 374.3 | 394.5 |
| 125 | 0.03367 | 336.7 | 2.69 | -2.62 | 1.03 | 327.7 | 345.8 |



NTCALUG02A103FL

NTC LUG02A 10K 1 % 3435 K 1 %

RESISTANCE TEMPERATURE CHARACTERISTICS

| TEMP. (°C) | $R_{(T)}/R_{25}$ | RESISTANCE (Ω) | $\Delta R/R$ (%) | α (%/K) | ΔT (K) | $R_{min.}$ (Ω) | $R_{max.}$ (Ω) |
|---------------|------------------|----------------------------|---------------------|-------------------|-------------------|----------------------------|----------------------------|
| -40 | 19.10 | 190 953 | 4.24 | -5.46 | 0.78 | 182 848 | 199 057 |
| -35 | 14.60 | 145 953 | 3.93 | -5.30 | 0.74 | 140 213 | 151 693 |
| -30 | 11.24 | 112 440 | 3.63 | -5.14 | 0.71 | 108 354 | 116 526 |
| -25 | 8.729 | 87 285 | 3.35 | -4.99 | 0.67 | 84 364 | 90 206 |
| -20 | 6.826 | 68 260 | 3.07 | -4.85 | 0.63 | 66 164 | 70 355 |
| -15 | 5.376 | 53 762 | 2.80 | -4.71 | 0.60 | 52 254 | 55 270 |
| -10 | 4.264 | 42 636 | 2.55 | -4.57 | 0.56 | 41 549 | 43 723 |
| -5 | 3.404 | 34 038 | 2.30 | -4.44 | 0.52 | 33 254 | 34 822 |
| 0 | 2.735 | 27 348 | 2.07 | -4.31 | 0.48 | 26 783 | 27 913 |
| 5 | 2.211 | 22 108 | 1.84 | -4.19 | 0.44 | 21 702 | 22 515 |
| 10 | 1.798 | 17 979 | 1.62 | -4.08 | 0.40 | 17 689 | 18 270 |
| 15 | 1.471 | 14 706 | 1.40 | -3.96 | 0.35 | 14 499 | 14 912 |
| 20 | 1.209 | 12 094 | 1.20 | -3.86 | 0.31 | 11 949 | 12 239 |
| 25 | 1.000 | 10 000 | 1.00 | -3.75 | 0.27 | 9900 | 10 100 |
| 30 | 0.8311 | 8311 | 1.19 | -3.65 | 0.33 | 8212 | 8410 |
| 35 | 0.6941 | 6941 | 1.38 | -3.55 | 0.39 | 6845 | 7037 |
| 40 | 0.5825 | 5825 | 1.56 | -3.46 | 0.45 | 5734 | 5916 |
| 45 | 0.4911 | 4911 | 1.73 | -3.37 | 0.51 | 4826 | 4996 |
| 50 | 0.4158 | 4158 | 1.90 | -3.28 | 0.58 | 4079 | 4237 |
| 55 | 0.3536 | 3536 | 2.06 | -3.20 | 0.65 | 3463 | 3609 |
| 60 | 0.3020 | 3020 | 2.22 | -3.12 | 0.71 | 2953 | 3087 |
| 65 | 0.2589 | 2589 | 2.38 | -3.04 | 0.78 | 2527 | 2650 |
| 70 | 0.2228 | 2228 | 2.53 | -2.96 | 0.85 | 2172 | 2284 |
| 75 | 0.1925 | 1925 | 2.67 | -2.89 | 0.92 | 1873 | 1976 |
| 80 | 0.1668 | 1668 | 2.81 | -2.82 | 1.00 | 1621 | 1715 |
| 85 | 0.1451 | 1451 | 2.95 | -2.75 | 1.07 | 1409 | 1494 |
| 90 | 0.1267 | 1267 | 3.08 | -2.69 | 1.15 | 1228 | 1306 |
| 95 | 0.1109 | 1109 | 3.21 | -2.62 | 1.22 | 1074 | 1145 |
| 100 | 0.09743 | 974.3 | 3.34 | -2.56 | 1.30 | 941.7 | 1007 |
| 105 | 0.08583 | 858.3 | 3.46 | -2.50 | 1.38 | 828.6 | 888.0 |
| 110 | 0.07584 | 758.4 | 3.58 | -2.45 | 1.46 | 731.2 | 785.6 |
| 115 | 0.06720 | 672.0 | 3.70 | -2.39 | 1.55 | 647.1 | 696.8 |
| 120 | 0.05971 | 597.1 | 3.81 | -2.34 | 1.63 | 574.3 | 619.8 |
| 125 | 0.05319 | 531.9 | 3.92 | -2.29 | 1.72 | 511.0 | 552.7 |



| | |
|----------------|-----------------------------------|
| NTCALUG02A104H | NTC LUG02A 100K 3 % 4190 K 1.50 % |
|----------------|-----------------------------------|

| RESISTANCE TEMPERATURE CHARACTERISTICS | | | | | | | |
|--|------------------|----------------|------------------|----------------|----------------|----------------|----------------|
| TEMP. (°C) | $R_{(T)}/R_{25}$ | RESISTANCE (Ω) | $\Delta R/R$ (%) | α (%/K) | ΔT (K) | $R_{min.}$ (Ω) | $R_{max.}$ (Ω) |
| -40 | 36.66 | 3 666 299 | 9.05 | -6.69 | 1.35 | 3 334 354 | 3 998 244 |
| -35 | 26.38 | 2 637 588 | 8.47 | -6.49 | 1.31 | 2 414 139 | 2 861 036 |
| -30 | 19.17 | 1 916 576 | 7.91 | -6.29 | 1.26 | 1 764 917 | 2 068 236 |
| -25 | 14.06 | 1 406 111 | 7.38 | -6.10 | 1.21 | 1 302 387 | 1 509 836 |
| -20 | 10.41 | 1 041 184 | 6.86 | -5.92 | 1.16 | 969 745 | 1 112 622 |
| -15 | 7.778 | 777 846 | 6.37 | -5.75 | 1.11 | 728 330 | 827 362 |
| -10 | 5.861 | 586 097 | 5.89 | -5.58 | 1.06 | 551 581 | 620 613 |
| -5 | 4.453 | 445 257 | 5.43 | -5.42 | 1.00 | 421 079 | 469 435 |
| 0 | 3.409 | 340 942 | 4.99 | -5.26 | 0.95 | 323 936 | 357 948 |
| 5 | 2.631 | 263 054 | 4.56 | -5.11 | 0.89 | 251 054 | 275 054 |
| 10 | 2.044 | 204 446 | 4.15 | -4.97 | 0.84 | 195 960 | 212 931 |
| 15 | 1.600 | 160 014 | 3.75 | -4.83 | 0.78 | 154 008 | 166 020 |
| 20 | 1.261 | 126 087 | 3.37 | -4.70 | 0.72 | 121 837 | 130 336 |
| 25 | 1.000 | 100 000 | 3.00 | -4.57 | 0.66 | 97 000 | 103 000 |
| 30 | 0.7981 | 79 808 | 3.36 | -4.45 | 0.75 | 77 128 | 82 488 |
| 35 | 0.6408 | 64 077 | 3.70 | -4.33 | 0.86 | 61 703 | 66 451 |
| 40 | 0.5175 | 51 745 | 4.04 | -4.22 | 0.96 | 49 655 | 53 836 |
| 45 | 0.4202 | 42 021 | 4.36 | -4.11 | 1.06 | 40 187 | 43 855 |
| 50 | 0.3431 | 34 308 | 4.68 | -4.00 | 1.17 | 32 702 | 35 913 |
| 55 | 0.2816 | 28 156 | 4.98 | -3.90 | 1.28 | 26 752 | 29 559 |
| 60 | 0.2322 | 23 222 | 5.28 | -3.80 | 1.39 | 21 996 | 24 449 |
| 65 | 0.1925 | 19 246 | 5.57 | -3.71 | 1.50 | 18 174 | 20 318 |
| 70 | 0.1602 | 16 025 | 5.85 | -3.62 | 1.62 | 15 088 | 16 961 |
| 75 | 0.1340 | 13 402 | 6.12 | -3.53 | 1.73 | 12 582 | 14 222 |
| 80 | 0.1126 | 11 258 | 6.38 | -3.45 | 1.85 | 10 539 | 11 976 |
| 85 | 0.09496 | 9496 | 6.64 | -3.36 | 1.97 | 8866 | 10 126 |
| 90 | 0.08042 | 8042 | 6.89 | -3.28 | 2.10 | 7488 | 8596 |
| 95 | 0.06837 | 6837 | 7.13 | -3.21 | 2.22 | 6350 | 7325 |
| 100 | 0.05835 | 5835 | 7.36 | -3.13 | 2.35 | 5405 | 6265 |
| 105 | 0.04998 | 4998 | 7.59 | -3.06 | 2.48 | 4618 | 5377 |
| 110 | 0.04296 | 4296 | 7.82 | -2.99 | 2.61 | 3960 | 4632 |
| 115 | 0.03705 | 3705 | 8.03 | -2.93 | 2.75 | 3407 | 4003 |
| 120 | 0.03206 | 3206 | 8.25 | -2.86 | 2.88 | 2942 | 3470 |
| 125 | 0.02783 | 2783 | 8.45 | -2.80 | 3.02 | 2548 | 3018 |



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