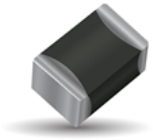
# NB20N50104MBA

(1206, 100 kOhm ±20%, 4160K, Ni/100% Sn)

## NTC SMD Thermistor with Ni/Sn termination

for Automotive, Industrial and General applications

To view data online visit:
**SpiCAT**



KYOCERA AVX Chip NTC Thermistors are high quality devices developed especially for surface mounting applications. They are widely used for temperature compensation, but can also achieve temperature control of printed circuits in a wide range of applications, including automotive, industrial and general purpose. Ni barrier/100% Sn plated termination for lead free soldering.

## Characteristics

| Case Size | 1206 |
|---|---|
| **Operating temperature** | -55°C to +150°C |
| **Resistance** | 100 kOhm |
| **Tolerance on Resistance (25°C)** | ±20% |
| **B 25/85** | 4160K±3% |
| **Maximum dissipation at 25°C** | 0.24 W |
| **Thermal dissipation factor** | 4 mW/°C |
| **Thermal time constant** | 7 s |
| **Termination** | Ni barrier/100%Sn (for Pb free soldering) |

RoHS COMPLIANT

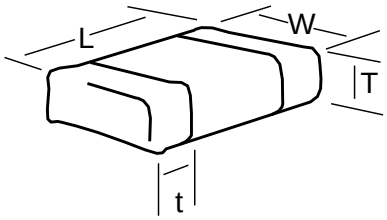
MSL 1
Pb Free
260°C

AEC-Q200
based qualification

## Dimensions WWWW

mm (inches)

| Size (EIA) | Length (L) | Width (W) | Thickness (T) | Terminal (t) |
|---|---|---|---|---|
| 1206 | 3.2±0.4 | 1.6±0.25 | 1.5 max | 0.2 min |
| | (0.126±0.016) | (0.063±0.01) | (0.059) max | (0.008) min |




## How to Order (Packaging options)

| NB | 20 | N5 | 0104 | M | BA |
|---|---|---|---|---|---|
| **Type** | **Size** | **Material Code** | **Resistance (Ohm)** | **Tolerance** | **Suffix: Packaging** |
| NB = Ni/Sn Term for lead free soldering | 20 = 1206 | See Datasheet | 2 Sig. Digits + Number of Zeros | H = ±3%*<br>J = ±5%<br>K = ±10%<br>M = ±20%<br><br>* For selected PNs | BA = Plastic tape (180mm reel, 3,000 pcs/reel)<br>BE = Plastic tape (180mm reel, 1,500 pcs/reel)<br>BC = Plastic tape (330mm reel, 10,000 pcs/reel)<br>-- = Bulk (5000 pcs/bag) |

NOTICE: Specifications are subject to change without notice. All statements, information and data given herein are beleived to be accurate and reliable, but are presented without guarantee or responsibility of any kind, expressed or implied. Specifications are typical and may not apply to all applications.

# Material Table

## N5 (B25/85 = 4160K±3%)

| B25/50 | B25/75 | B25/85 | B25/100 | B Tol |
|---|---|---|---|---|
| 4124 K | 4151 K | 4160 K | 4171 K | ±3% |

| T (°C) | R(T) / R25 | TF (%) | α (%/°C) | R Min (Ω) | R Nom (Ω) | R Max (Ω) |
|---|---|---|---|---|---|---|
| -55 | 115.8 | 16.32 | -7.52 | 7,376,799 | 11,583,639 | 15,790,480 |
| -50 | 79.72 | 14.10 | -7.28 | 5,254,014 | 7,972,380 | 10,690,746 |
| -45 | 55.54 | 12.12 | -7.04 | 3,770,222 | 5,554,320 | 7,338,417 |
| -40 | 39.15 | 10.36 | -6.82 | 2,726,458 | 3,915,244 | 5,104,030 |
| -35 | 27.91 | 8.80 | -6.61 | 1,987,181 | 2,791,050 | 3,594,919 |
| -30 | 20.11 | 7.42 | -6.40 | 1,459,810 | 2,011,236 | 2,562,662 |
| -25 | 14.64 | 6.19 | -6.20 | 1,080,838 | 1,464,401 | 1,847,964 |
| -20 | 10.77 | 5.11 | -6.01 | 806,483 | 1,076,916 | 1,347,350 |
| -15 | 7.996 | 4.16 | -5.83 | 606,388 | 799,577 | 992,767 |
| -10 | 5.991 | 3.33 | -5.65 | 459,373 | 599,149 | 738,924 |
| -5 | 4.529 | 2.60 | -5.48 | 350,568 | 452,950 | 555,332 |
| 0 | 3.454 | 1.97 | -5.31 | 269,461 | 345,351 | 421,240 |
| 5 | 2.655 | 1.43 | -5.16 | 208,574 | 265,475 | 322,376 |
| 10 | 2.057 | 0.97 | -5.00 | 162,548 | 205,687 | 248,825 |
| 15 | 1.606 | 0.58 | -4.86 | 127,521 | 160,575 | 193,628 |
| 20 | 1.263 | 0.26 | -4.72 | 100,688 | 126,274 | 151,860 |
| 25 | 1.000 | 0.00 | -4.58 | 80,000 | 100,000 | 120,000 |
| 30 | 0.7973 | 0.25 | -4.45 | 63,582 | 79,729 | 95,877 |
| 35 | 0.6398 | 0.54 | -4.32 | 50,840 | 63,983 | 77,125 |
| 40 | 0.5167 | 0.86 | -4.20 | 40,891 | 51,668 | 62,446 |
| 45 | 0.4198 | 1.21 | -4.09 | 33,075 | 41,977 | 50,879 |
| 50 | 0.3430 | 1.58 | -3.97 | 26,900 | 34,302 | 41,704 |
| 55 | 0.2819 | 1.97 | -3.86 | 21,994 | 28,188 | 34,381 |
| 60 | 0.2329 | 2.39 | -3.76 | 18,076 | 23,289 | 28,502 |
| 65 | 0.1934 | 2.82 | -3.66 | 14,929 | 19,342 | 23,755 |
| 70 | 0.1614 | 3.26 | -3.56 | 12,389 | 16,144 | 19,900 |
| 75 | 0.1354 | 3.72 | -3.46 | 10,329 | 13,541 | 16,753 |
| 80 | 0.1141 | 4.19 | -3.37 | 8,649.8 | 11,410 | 14,171 |
| 85 | 0.0966 | 4.67 | -3.29 | 7,275.2 | 9,658.4 | 12,042 |
| 90 | 0.0821 | 5.17 | -3.20 | 6,144.7 | 8,211.1 | 10,277 |
| 95 | 0.0701 | 5.66 | -3.12 | 5,210.9 | 7,010.0 | 8,809.0 |
| 100 | 0.0601 | 6.17 | -3.04 | 4,436.4 | 6,008.8 | 7,581.3 |
| 105 | 0.0517 | 6.68 | -2.96 | 3,791.3 | 5,170.9 | 6,550.4 |
| 110 | 0.0447 | 7.19 | -2.89 | 3,251.9 | 4,466.6 | 5,681.2 |
| 115 | 0.0387 | 7.71 | -2.82 | 2,799.2 | 3,872.3 | 4,945.4 |
| 120 | 0.0337 | 8.23 | -2.75 | 2,417.7 | 3,368.9 | 4,320.1 |
| 125 | 0.0294 | 8.76 | -2.68 | 2,095.2 | 2,941.0 | 3,786.8 |
| 130 | 0.0258 | 9.28 | -2.62 | 1,821.6 | 2,575.9 | 3,330.2 |
| 135 | 0.0226 | 9.81 | -2.55 | 1,588.6 | 2,263.3 | 2,938.0 |
| 140 | 0.0199 | 10.34 | -2.49 | 1,389.6 | 1,994.8 | 2,599.9 |
| 145 | 0.0176 | 10.86 | -2.44 | 1,219.1 | 1,763.3 | 2,307.5 |
| 150 | 0.0156 | 11.39 | -2.38 | 1,072.5 | 1,563.2 | 2,053.9 |