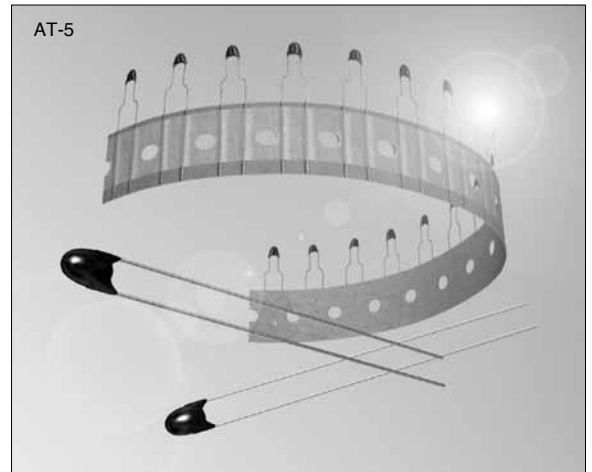
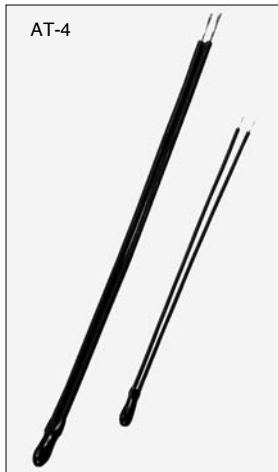


# HIGH PRECISION THERMISTOR

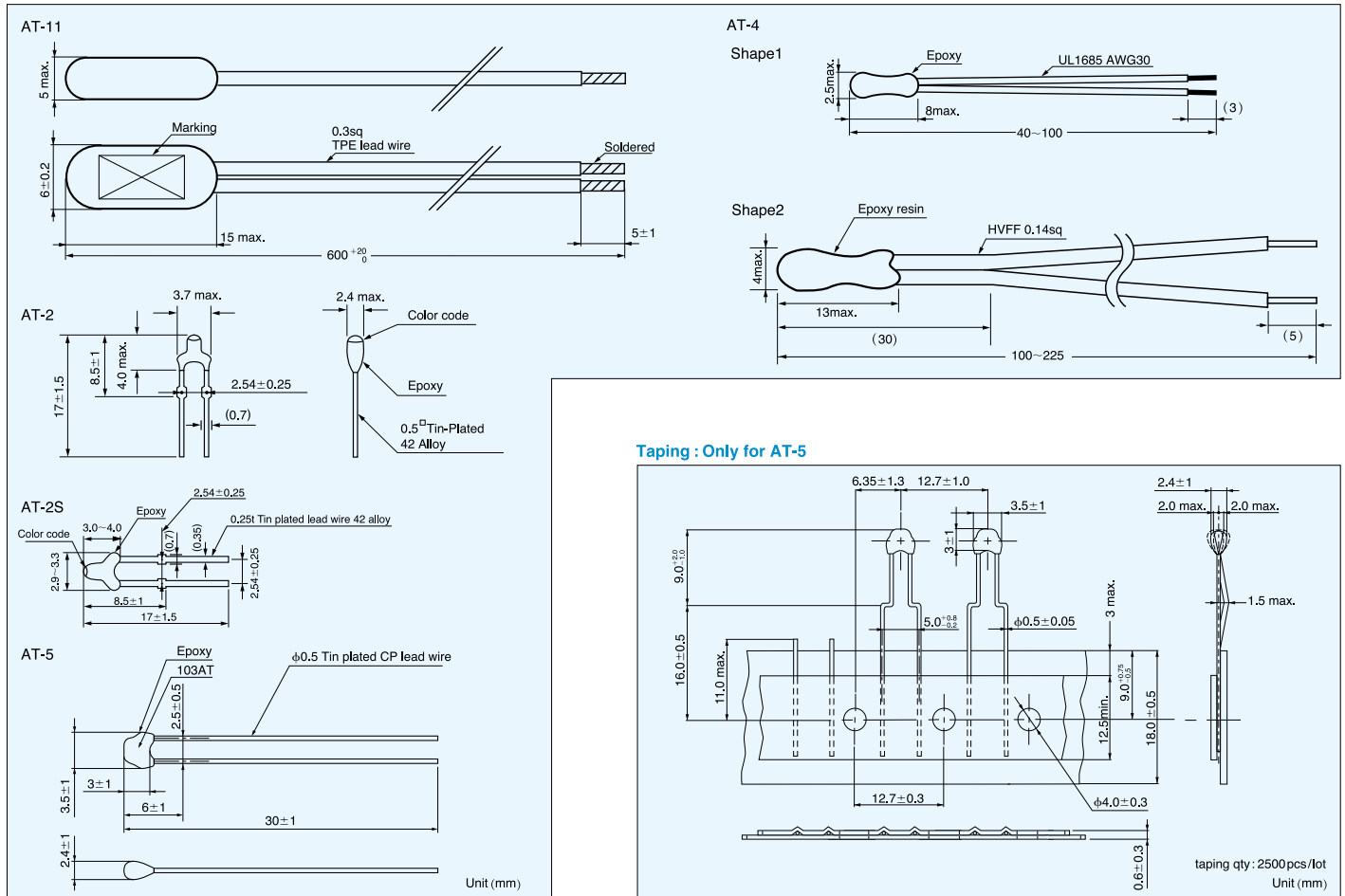
## AT THERMISTOR

The AT thermistor is a high-precision thermal sensing device featuring extremely small B-value tolerance and resistance. When used as a temperature gauge, the AT thermistor requires no adjustment between the control circuit and the sensor.

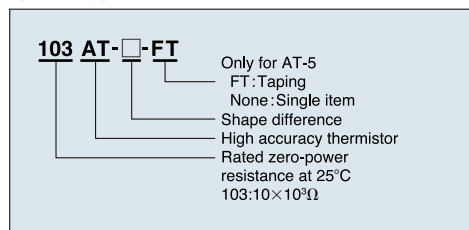
This insures temperature precision of  $\pm 0.3^{\circ}\text{C}$ . Temperature indicators and control instruments are now available for use with the thermistor.



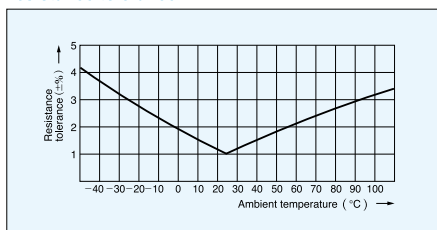
### Dimensions



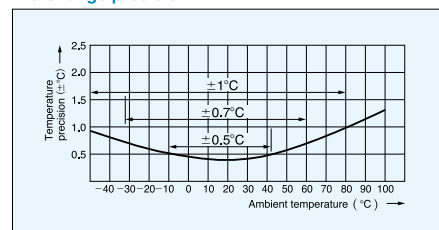
### Part number



### Resistance tolerance



### Interchange precision



### Acquisition Standard

For AT-2 type :UL1434, CSA-C22.2, No.0 Authorized.

### Specifications

| Part No        | R <sub>25</sub> <sup>1</sup> | B value <sup>2</sup> | Dissipation factor (mW/°C) Approx. | Thermal time constant (s) <sup>3</sup> Approx. | Rated maximum power dissipation (at 25°C)(mW) | Category temp. range(°C) | Color code |         |
|----------------|------------------------------|----------------------|------------------------------------|--|---|--------------------------|------------|---------|
| 102AT-2        | 1.0kΩ±1%                     | 3100K±1%             | 2                                  | 15   | 10  | -50~+90                  | Black      |         |
| 202AT-2        | 2.0kΩ±1%                     | 3182K±1%             |                                    |  |   |                          | Red        |         |
| 502AT-2        | 5.0kΩ±1%                     | 3324K±1%             |                                    |  |   | -50~+110                 | Yellow     |         |
| 103AT-2        | 10.0kΩ±1%                    | 3435K±1%             |                                    |  |   |                          | White      |         |
| 203AT-2        | 20.0kΩ±1%                    | 4013K±1%             |                                    |  |   |                          |            |         |
| 104AT-2        | 100.0kΩ±1%                   | 4665K±1%             |                                    |  |   |                          |            |         |
| 102AT-11       | 1.0kΩ±1%                     | 3100K±1%             | 3                                  | 75   | 13  | -50~+90                  | None       |         |
| 202AT-11       | 2.0kΩ±1%                     | 3182K±1%             |                                    |  |   |                          |            |         |
| 502AT-11       | 5.0kΩ±1%                     | 3324K±1%             |                                    |  |   |                          |            |         |
| 103AT-11       | 10.0kΩ±1%                    | 3435K±1%             |                                    |  |   | -50~+105                 |            |         |
| 103AT-4 Shape1 | 10.0kΩ±1%                    | 3435K±1%             | 2                                  | 10   | 10  |                          |            | -50~+90 |
| 103AT-4 Shape2 | 10.0kΩ±1%                    | 3435K±1%             | 4                                  | 35   | 20  |                          |            |         |
| 103AT-2S       | 10.0kΩ±1%                    | 3435K±1%             | 1                                  | 15   | 5   | -50~+110                 |            | White   |
| 103AT-5        | 10.0kΩ±1%                    | 3435K±1%             | 2.5                                |  | 12.5  |                          |            | None    |

※Other resistance is also available, please ask.

<sup>1</sup> R<sub>25</sub> : Rated zero-power resistance value at 25°C.

<sup>2</sup> B value : determined by rated zero-power resistance at 25°C and 85°C.

<sup>3</sup> Time when thermistor temperature reaches 63.2% of the temperature difference. The value is measured in the air.

### Resistance -Temperature

| Temperature (°C) | Type   |       |       |       |       |       |       | Temperature (°C) | Type   |        |        |        |        |       |       |
|------------------|--------|-------|-------|-------|-------|-------|-------|------------------|--------|--------|--------|--------|--------|-------|-------|
|                  | 102AT  | 202AT | 502AT | 103AT | 203AT | 503AT | 104AT |                  | 102AT  | 202AT  | 502AT  | 103AT  | 203AT  | 503AT | 104AT |
| -50              | 24.46  | 55.66 | 154.6 | 329.5 | 1253  | 3168  | 11473 | 35               | 0.7229 | 1.424  | 3.508  | 6.940  | 13.06  | 32.48 | 60.94 |
| -45              | 18.68  | 42.17 | 116.5 | 247.7 | 890.5 | 2257  | 7781  | 40               | 0.6189 | 1.211  | 2.961  | 5.827  | 10.65  | 26.43 | 48.10 |
| -40              | 14.43  | 32.34 | 88.91 | 188.5 | 642.0 | 1632  | 5366  | 45               | 0.5316 | 1.033  | 2.509  | 4.911  | 8.716  | 21.59 | 38.13 |
| -35              | 11.23  | 24.96 | 68.19 | 144.1 | 465.8 | 1186  | 3728  | 50               | 0.4587 | 0.8854 | 2.137  | 4.160  | 7.181  | 17.75 | 30.44 |
| -30              | 8.834  | 19.48 | 52.87 | 111.3 | 342.5 | 872.8 | 2629  | 55               | 0.3967 | 0.7620 | 1.826  | 3.536  | 5.941  | 14.64 | 24.42 |
| -25              | 6.998  | 15.29 | 41.21 | 86.43 | 253.6 | 646.3 | 1864  | 60               | 0.3446 | 0.6587 | 1.567  | 3.020  | 4.943  | 12.15 | 19.72 |
| -20              | 5.594  | 12.11 | 32.44 | 67.77 | 190.0 | 484.3 | 1340  | 65               | 0.3000 | 0.5713 | 1.350  | 2.588  | 4.127  | 10.13 | 15.99 |
| -15              | 4.501  | 9.655 | 25.66 | 53.41 | 143.2 | 364.6 | 969.0 | 70               | 0.2622 | 0.4975 | 1.168  | 2.228  | 3.464  | 8.482 | 13.05 |
| -10              | 3.651  | 7.763 | 20.48 | 42.47 | 109.1 | 277.5 | 709.5 | 75               | 0.2285 | 0.4343 | 1.014  | 1.924  | 2.916  | 7.129 | 10.68 |
| -5               | 2.979  | 6.277 | 16.43 | 33.90 | 83.75 | 212.3 | 523.3 | 80               | 0.1999 | 0.3807 | 0.8835 | 1.668  | 2.468  | 6.022 | 8.796 |
| 0                | 2.449  | 5.114 | 13.29 | 27.28 | 64.88 | 164.0 | 390.3 | 85               | 0.1751 | 0.3346 | 0.7722 | 1.451  | 2.096  | 5.105 | 7.271 |
| 5                | 2.024  | 4.188 | 10.80 | 22.05 | 50.53 | 127.5 | 292.5 | 90               | 0.1536 | 0.2949 | 0.6771 | 1.266  | 1.788  | 4.345 | 6.041 |
| 10               | 1.684  | 3.454 | 8.840 | 17.96 | 39.71 | 99.99 | 221.5 | 95               |        |        | 0.5961 | 1.108  | 1.530  | 3.712 | 5.037 |
| 15               | 1.408  | 2.862 | 7.267 | 14.69 | 31.36 | 78.77 | 168.6 | 100              |        |        | 0.5265 | 0.9731 | 1.315  | 3.185 | 4.220 |
| 20               | 1.184  | 2.387 | 6.013 | 12.09 | 24.96 | 62.56 | 129.5 | 105              |        |        | 0.4654 | 0.8572 | 1.134  | 2.741 | 3.546 |
| 25               | 1.000  | 2.000 | 5.000 | 10.00 | 20.00 | 50.00 | 100.0 | 110              |        |        | 0.4128 | 0.7576 | 0.9807 | 2.369 | 2.994 |
| 30               | 0.8486 | 1.684 | 4.179 | 8.313 | 16.12 | 40.20 | 77.81 |                  |        |        |        |        |        |       |       |

Unit(kΩ)