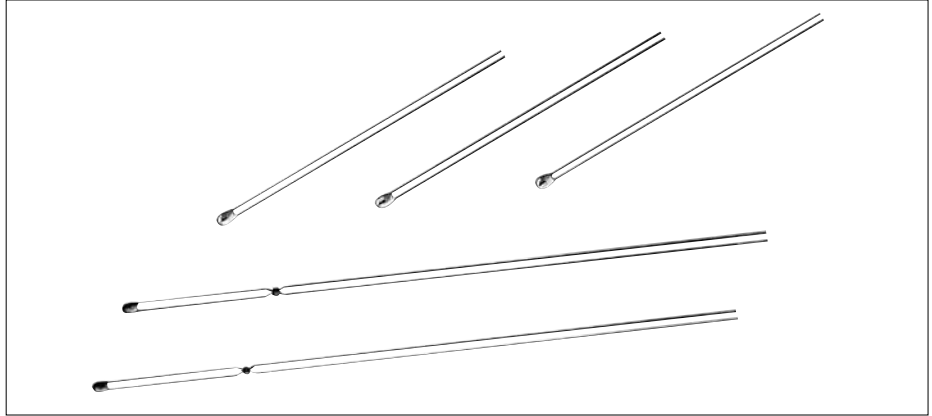


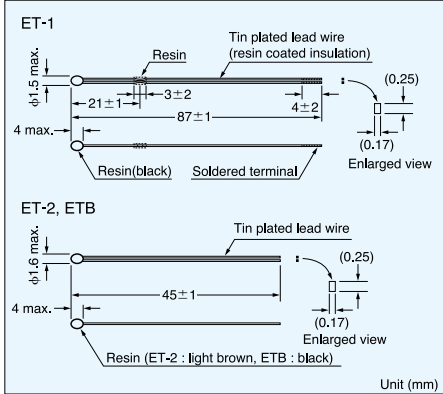
# ET THERMISTOR

The ET thermistor is smaller version of the AT thermistor. Its fast response time and high reliability makes it particularly suitable for use in medical equipment and thermometers. Manufactured by full-automated production line, all ET thermistors have identical size and that makes it possible to assemble sensors automatically.

## Part number



## Dimensions



## Specifications

| Part No.    | R <sub>25</sub> *1 | B value*2 | Dissipation factor (mW/°C) Approx. | Thermal time constant (s)*3 Approx. | Rated maximum power dissipation (at 25°C)(mW) | Category temp. range (°C) |
|-------------|--------------------|-----------|------------------------------------|-------------------------------------|-----------------------------------------------|---------------------------|
| 402ET-1(2)  | 4.0kΩ±3%           | 3100K±1%  | 0.7                                | 3.2<br>(3.4)                        | 3.5                                           | -40~ +90                  |
| 103ET-1(2)  | 10.0kΩ±3%          | 3250K±1%  |                                    |                                     |                                               | -40~ +100                 |
| 303ET-1(2)  | 30.0kΩ±3%          | 3760K±1%  |                                    |                                     |                                               | -40~ +100                 |
| 403ET-1(2)  | 40.0kΩ±3%          | 3525K±1%  |                                    |                                     |                                               | -40~ +90                  |
| 413ET-1(2)  | 41.0kΩ±3%          | 3435K±1%  |                                    |                                     |                                               | -40~ +100                 |
| 503ET-1(2)  | 50.0kΩ±3%          | 4055K±1%  |                                    |                                     |                                               | -40~ +90                  |
| 593ET-1(2)  | 59.0kΩ±3%          | 3617K±1%  |                                    |                                     |                                               | -40~ +100                 |
| 833ET-1(2)  | 83.0kΩ±3%          | 4013K±1%  |                                    |                                     |                                               | -40~ +90                  |
| 104ET-1(2)  | 100.0kΩ±3%         | 4132K±1%  |                                    |                                     |                                               | -40~ +100                 |
| 224ET-1(2)  | 226.0kΩ±3%         | 4021K±1%  |                                    |                                     |                                               | -40~ +90                  |
| 234ET-1(2)  | 232.0kΩ±3%         | 4274K±1%  |                                    |                                     |                                               | -40~ +100                 |
| 103ETB(-1P) | 10.0kΩ±1%,±2%      | 3435K±1%  |                                    |                                     |                                               | -40~ +90                  |

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

\*2 B value : determined by rated zero-power resistance at 25°C and 85°C.

\*3 Time when thermistor temperature reaches 63.2% of the temperature difference. The value is measured in the air.

## Resistance-Temperature

| Temperature (°C) | Type   |       |       |       |       |       |       |       |       |       |       |        |
|------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
|                  | 402ET  | 103ET | 303ET | 403ET | 413ET | 503ET | 593ET | 833ET | 104ET | 224ET | 234ET | 103ETB |
| -40              | 57.71  | 170.9 | 810.7 | 833.3 | 772.8 | 1602  | 1318  | 2664  | 3325  | 7005  | 9046  | 204.7  |
| -30              | 35.34  | 102.2 | 445.1 | 481.1 | 456.5 | 855.0 | 754.3 | 1421  | 1769  | 3784  | 4680  | 118.5  |
| -20              | 22.38  | 63.07 | 253.7 | 287.5 | 277.9 | 474.4 | 445.8 | 788.5 | 977.5 | 2116  | 2515  | 71.02  |
| -10              | 14.60  | 40.08 | 149.8 | 177.2 | 174.1 | 272.7 | 271.7 | 453.0 | 559.0 | 1225  | 1401  | 43.67  |
| 0                | 9.797  | 26.16 | 91.30 | 112.4 | 111.7 | 161.9 | 170.1 | 269.3 | 329.8 | 730.1 | 808.2 | 27.70  |
| 10               | 6.737  | 17.51 | 57.31 | 73.00 | 73.63 | 99.13 | 109.4 | 164.8 | 200.5 | 447.8 | 480.2 | 18.07  |
| 20               | 4.736  | 11.99 | 37.00 | 48.61 | 49.57 | 62.38 | 72.10 | 103.6 | 125.3 | 282.1 | 293.7 | 12.11  |
| 25               | 4.000  | 10.00 | 30.00 | 40.00 | 41.00 | 50.00 | 59.00 | 83.00 | 100.0 | 226.0 | 232.0 | 10.00  |
| 30               | 3.394  | 8.387 | 24.47 | 33.08 | 34.08 | 40.24 | 48.55 | 66.91 | 80.27 | 182.1 | 184.4 | 8.301  |
| 40               | 2.476  | 5.988 | 16.56 | 22.96 | 23.89 | 26.58 | 33.41 | 44.18 | 52.62 | 120.3 | 118.6 | 5.811  |
| 50               | 1.835  | 4.353 | 11.45 | 16.26 | 17.06 | 17.93 | 23.44 | 29.80 | 35.23 | 81.07 | 78.00 | 4.147  |
| 60               | 1.378  | 3.217 | 8.070 | 11.70 | 12.38 | 12.33 | 16.73 | 20.51 | 24.00 | 55.75 | 52.39 | 3.011  |
| 70               | 1.049  | 2.414 | 5.791 | 8.569 | 9.135 | 8.588 | 12.15 | 14.37 | 16.59 | 39.01 | 35.87 | 2.224  |
| 80               | 0.7997 | 1.836 | 4.222 | 6.367 | 6.838 | 6.064 | 8.951 | 10.24 | 11.64 | 27.78 | 24.99 | 1.668  |
| 90               | 0.6145 | 1.416 | 3.125 | 4.797 | 5.190 | 4.338 | 6.697 | 7.419 | 8.287 | 20.10 | 17.72 | 1.267  |
| 100              |        |       | 2.346 | 3.662 | 3.990 | 3.142 | 5.077 | 5.459 |       | 14.75 | 12.75 |        |

Unit (kΩ)

## Specifications

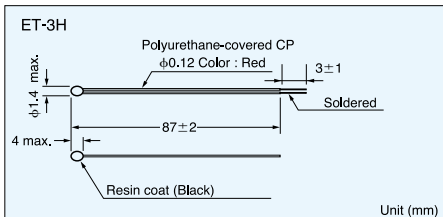
| Part No.          | R <sub>37</sub> *1 | B value*2  | Dissipation factor (mW/°C) Approx. | Thermal time constant (s)*3 Approx. | Rated maximum power dissipation (at 25°C)(mW) | Category temp. range (°C) |
|-------------------|--------------------|------------|------------------------------------|-------------------------------------|-----------------------------------------------|---------------------------|
| 503ET-3H87L-20073 | 29.615kΩ~30.263kΩ  | 3944K±0.5% | 0.7                                | 0.8                                 | 3.5                                           | -40~ +100                 |

\*1 R<sub>37</sub> : Rated zero-power resistance value at 37°C.

\*2 B value : determined by rated zero-power resistance at 30°C and 45°C.

\*3 Time when thermistor temperature reaches 63.2% of the temperature difference. The value is measured in oil.

## Dimensions



## Tolerance of the group : ± 0.09% /group

| Group | Resistance(kΩ)       | Group | Resistance(kΩ)       |
|-------|----------------------|-------|----------------------|
| C     | 29.615/29.641/29.667 | I     | 29.937/29.964/29.991 |
| D     | 29.668/29.695/29.721 | J     | 29.992/30.018/30.045 |
| E     | 29.722/29.749/29.775 | K     | 30.046/30.073/30.100 |
| F     | 29.776/29.802/29.828 | L     | 30.101/30.127/30.154 |
| G     | 29.829/29.856/29.883 | M     | 30.155/30.182/30.209 |
| H     | 29.884/29.910/29.936 | N     | 30.210/30.237/30.263 |

Notes : Min./Center/Max.