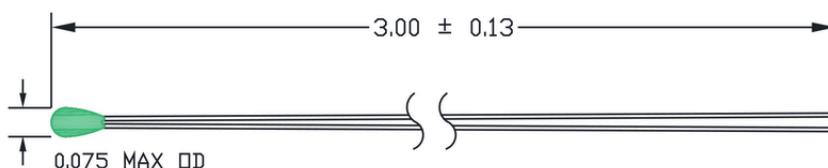
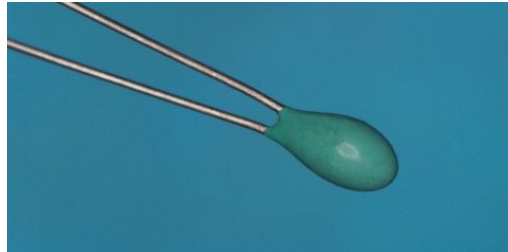




## 1FE NTC Thermistor

### Description:

Epoxy-coated NTC thermistor with 32 AWG solid tin-plated copper-nickel Alloy 180 leads, radial configuration, 3 in (72.6 mm) overall length



(Drawing dimensions are typical)

### Features:

- **R25 values from 50  $\Omega$  to 100,000  $\Omega$**
- **Cost-effective**
- **Available in point-matched and interchangeable temperature tolerances**
- **Available in all R/T Curves**

The 1FE NTC thermistor series offers low-cost, rugged temperature sensors suitable for many design applications. Because of the variety of options in this configuration, the 1FE series is an ideal temperature sensor for the temperature range of -50 °C to +125 °C. Contact us at [info@northstarsensors.com](mailto:info@northstarsensors.com) for assistance with your unique application.

### Applications:

- **Electronic thermometers**
- **Battery technology**
- **Industrial controls**
- **HVAC**
- **Food processing**
- **Cold junction compensation**

## 1FE NTC Thermistor

### Typical Configurations:

| Part Number  | Resistance at 25 °C | Temperature Tolerance            | R/T Curve | 25 °C / 85 °C $\beta$ |
|--------------|---------------------|----------------------------------|-----------|-----------------------|
| 1FE103R44T1A | 10 k $\Omega$       | $\pm 0.1$ °C from 0 °C to 70 °C  | 44        | 3978                  |
| 1FE222R44T1M | 2252 $\Omega$       | $\pm 0.1$ °C from 35 °C to 40 °C | 44        | 3978                  |
| 1FE351R38P2  | 350 $\Omega$        | $\pm 2\%$ $\Omega$ at 25 °C      | 38        | 3486                  |
| 1FE303R43T2A | 30 k $\Omega$       | $\pm 0.2$ °C from 0 °C to 70 °C  | 43        | 3943                  |
| 1FE104R47T5A | 100 k $\Omega$      | $\pm 0.5$ °C from 0 °C to 70 °C  | 47        | 4262                  |

A wide variety of configurations are possible. Contact us at [info@northstarsensors.com](mailto:info@northstarsensors.com) for assistance with your unique application.

### Other Specifications:

|                                          |                              |
|------------------------------------------|------------------------------|
| <b>Recommended Operating Temperature</b> | -50 °C to 100 °C             |
| <b>Max Temperature</b>                   | 125 °C                       |
| <b>Recommended Measurement Current</b>   | < 50 $\mu$ A                 |
| <b>Time Constant</b>                     | ~ 1 second in stirred liquid |
| <b>Dissipation Constant</b>              | ~ 1 mW / °C in ambient air   |
| <b>RoHS and REACH</b>                    | Compliant                    |

### Resistance vs Temperature Conversion Tables

| °C | CURVE 38       |        | CURVE 43       |        | CURVE 44       |        |
|----|----------------|--------|----------------|--------|----------------|--------|
|    | $\Omega$ RATIO | NTC    | $\Omega$ RATIO | NTC    | $\Omega$ RATIO | NTC    |
|    | $R_T / R_{25}$ | (%/°C) | $R_T / R_{25}$ | (%/°C) | $R_T / R_{25}$ | (%/°C) |
| 0  | 2.815          | -4.46  | 3.1660         | -4.94  | 3.2651         | -5.11  |
| 5  | 2.260          | -4.33  | 2.4815         | -4.80  | 2.5393         | -4.95  |
| 10 | 1.826          | -4.20  | 1.9583         | -4.67  | 1.9901         | -4.80  |
| 15 | 1.485          | -4.07  | 1.5556         | -4.54  | 1.5712         | -4.66  |
| 20 | 1.215          | -3.95  | 1.2434         | -4.42  | 1.2493         | -4.52  |
| 25 | 1.000          | -3.84  | 1.0000         | -4.30  | 1.0000         | -4.39  |
| 30 | 0.8276         | -3.73  | 0.80892        | -4.18  | 0.80567        | -4.26  |
| 35 | 0.6885         | -3.63  | 0.65804        | -4.07  | 0.65314        | -4.14  |
| 40 | 0.5758         | -3.53  | 0.53820        | -3.97  | 0.53266        | -4.02  |
| 45 | 0.4840         | -3.43  | 0.44249        | -3.87  | 0.43689        | -3.91  |
| 50 | 0.4087         | -3.33  | 0.36563        | -3.77  | 0.36031        | -3.81  |
| 55 | 0.3467         | -3.24  | 0.30357        | -3.67  | 0.29857        | -3.71  |
| 60 | 0.2954         | -3.16  | 0.25323        | -3.58  | 0.24869        | -3.61  |
| 65 | 0.2528         | -3.07  | 0.21219        | -3.49  | 0.20816        | -3.51  |
| 70 | 0.2172         | -2.99  | 0.17858        | -3.41  | 0.17508        | -3.42  |

Please visit  
[northstarsensors.com/temperature-curves](http://northstarsensors.com/temperature-curves)  
 for additional tables