



## MODEL 44909

### GSFC Space Qualified Thermistor

- Fully Qualified to GSFC S311-P18-09S7R6 Specification for Flight Use
- 30,000 ohm Resistance @ 25°C
- Interchangeable  $\pm 0.2^{\circ}\text{C}$ , 0°C to 70°C
- Pressed Disk Ceramic Sensor
- High sensitivity
- Thermally conductive epoxy coating that meet Outgassing Requirements
- 32 AWG, 3" (7.6 cm) long Solder plated copper leads
- Serialized and Color Coded for Identification

#### FEATURES

- Flight Qualified
- 30,000 ohm Resistance @ 25°C
- Interchangeability
- High Sensitivity
- Thermally Conductive Epoxy Coating Exhibits <0.66% TML, <0.01% CVCM, 0.10% WVR when tested per ASTM E-595-90

#### APPLICATIONS

- Extended Space Applications
- Low and Mid Range Temperature Applications
- Tight Tolerance Instrumentation
- Applications Requiring Sensing Small Changes in Temperature
- Applications with Outgassing Requirements

NASA Qualified epoxy encapsulated precision interchangeable NTC thermistors for use in extended space flight applications. All parts are fully flight tested and characterized. Line re-qualified yearly per MIL-PRF-23648 requirements as specified in S311-P18 document. Resistance (Type 09) available in other lead and resistance configurations per S311-P18.

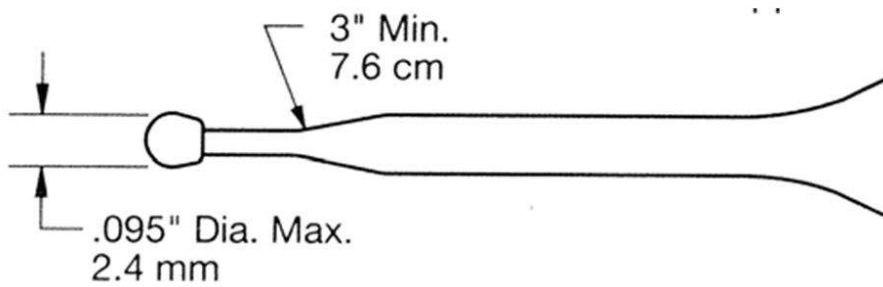
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### PERFORMANCE SPECS

| Parameter  | Units   | Value  |
|--|---------|--------|
| Resistance @ 25°C                                    | Ohms    | 30,000 |
| Tolerance 0°C to 70°C                                | °C      | ± 0.2  |
| Beta Value 25/85                                     | K       | 3943   |
| Tolerance on Beta Value                              | %       | 0.8    |
| Time response in air                                 | Seconds | < 10   |
| Dissipation Constant in air                          | mW/°C   | 1      |
| Insulation Resistance (Min. of 100 Mohms for 1 sec.) | Volts   | 500    |

### MECHANICAL DETAILS



**TYPICAL PERFORMANCE CURVES (RESISTANCE OF INDIVIDUAL THERMISTORS)**

| Temp °C | K-Ohms | Temp °C | K-Ohms | Temp °C | K-Ohms | Temp °C | K-Ohms |
|---------|--------|---------|--------|---------|--------|---------|--------|
| -40     | 884.6  | 0       | 94.98  | 40      | 16.15  | 80      | 3.843  |
| -39     | 830.9  | 1       | 90.41  | 41      | 15.52  | 81      | 3.720  |
| -38     | 780.8  | 2       | 86.09  | 42      | 14.92  | 82      | 3.602  |
| -37     | 733.9  | 3       | 81.99  | 43      | 14.35  | 83      | 3.489  |
| -36     | 690.2  | 4       | 78.11  | 44      | 13.80  | 84      | 3.379  |
| -35     | 649.3  | 5       | 74.44  | 45      | 13.28  | 85      | 3.273  |
| -34     | 611.0  | 6       | 70.96  | 46      | 12.77  | 86      | 3.172  |
| -33     | 575.2  | 7       | 67.66  | 47      | 12.29  | 87      | 3.073  |
| -32     | 541.7  | 8       | 64.53  | 48      | 11.83  | 88      | 2.979  |
| -31     | 510.4  | 9       | 61.56  | 49      | 11.39  | 89      | 2.887  |
| -30     | 481.0  | 10      | 58.75  | 50      | 10.97  | 90      | 2.799  |
| -29     | 453.5  | 11      | 56.07  | 51      | 10.57  |         |        |
| -28     | 427.7  | 12      | 53.54  | 52      | 10.18  |         |        |
| -27     | 403.5  | 13      | 51.13  | 53      | 9.807  |         |        |
| -26     | 380.9  | 14      | 48.84  | 54      | 9.450  |         |        |
| -25     | 359.6  | 15      | 46.67  | 55      | 9.109  |         |        |
| -24     | 339.6  | 16      | 44.60  | 56      | 8.781  |         |        |
| -23     | 320.9  | 17      | 42.64  | 57      | 8.467  |         |        |
| -22     | 303.3  | 18      | 40.77  | 58      | 8.166  |         |        |
| -21     | 286.7  | 19      | 38.99  | 59      | 7.876  |         |        |
| -20     | 271.2  | 20      | 37.30  | 60      | 7.599  |         |        |
| -19     | 256.5  | 21      | 35.70  | 61      | 7.332  |         |        |
| -18     | 242.8  | 22      | 34.17  | 62      | 7.076  |         |        |
| -17     | 229.8  | 23      | 32.71  | 63      | 6.830  |         |        |
| -16     | 217.6  | 24      | 31.32  | 64      | 6.594  |         |        |
| -15     | 206.2  | 25      | 30.00  | 65      | 6.367  |         |        |
| -14     | 195.4  | 26      | 28.74  | 66      | 6.149  |         |        |
| -13     | 185.2  | 27      | 27.54  | 67      | 5.940  |         |        |
| -12     | 175.6  | 28      | 26.40  | 68      | 5.738  |         |        |
| -11     | 166.6  | 29      | 25.31  | 69      | 5.545  |         |        |
| -10     | 158.0  | 30      | 24.27  | 70      | 5.359  |         |        |
| -9      | 150.0  | 31      | 23.28  | 71      | 5.180  |         |        |
| -8      | 142.4  | 32      | 22.33  | 72      | 5.007  |         |        |
| -7      | 135.2  | 33      | 21.43  | 73      | 4.842  |         |        |
| -6      | 128.5  | 34      | 20.57  | 74      | 4.682  |         |        |
| -5      | 122.1  | 35      | 19.74  | 75      | 4.529  |         |        |
| -4      | 116.0  | 36      | 18.96  | 76      | 4.381  |         |        |
| -3      | 110.3  | 37      | 18.21  | 77      | 4.239  |         |        |
| -2      | 104.9  | 38      | 17.49  | 78      | 4.102  |         |        |
| -1      | 99.80  | 39      | 16.80  | 79      | 3.970  |         |        |