



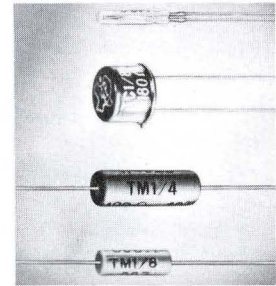
SOLID STATE TEMPERATURE SENSING RESISTORS SILICON TYPES TM 1/8, TM 1/4, TC 1/8 AND P-100 PROBE

Temperature Compensating • Temperature Sensing

Applicable from Geophysics to Missiles

Amplifiers • Power Supplies • Servos • Thermometry

Mag Amps • Computers • Telemetry



SOLID STATE TEMPERATURE SENSING RESISTORS
SILICON TYPES TM 1/8, TM 1/4, TC 1/8 AND P-100 PROBE
BULLETIN NO. DL-C 1122 AUGUST, 1959
SUPERCEDES BULLETIN NO. DL-C-860 MARCH, 1958

Large positive temperature coefficient of resistance (0.7%/°C)
mechanical specifications

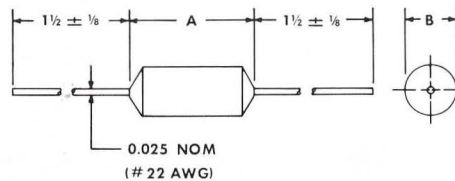
sensistor

Molded
Silicon Types TM 1/4 & TM 1/8

Axial Leads

Full Load at 100° C

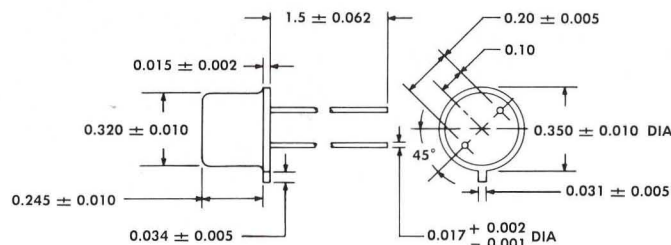
Derated Linearly to 150° C



COLOR: GREEN FOR EASY IDENTIFICATION
ALL DIMENSIONS IN INCHES

TYPE	A	B
TM 1/4	0.585 ± 0.015	0.200 ± 0.015
TM 1/8	0.406 ± 0.015	0.140 ± 0.015

mechanical specifications



COLOR: GREEN FOR EASY IDENTIFICATION
ALL DIMENSIONS IN INCHES

sensistor

Round Welded Case
Silicon Type TC 1/8

Glass-to-Metal Hermetic Seal
between case and leads

Full Load at 125° C

Derated Linearly to 200° C

sensistor

Glass Encased
Silicon Type P-100 Probe

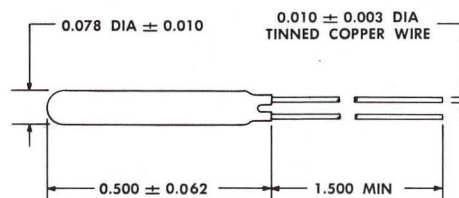
All Glass Package
Glass-to-Metal Hermetic
Seal at Leads

Accurate Resistance
to

Temperature Relationship
From -180° C to +200° C

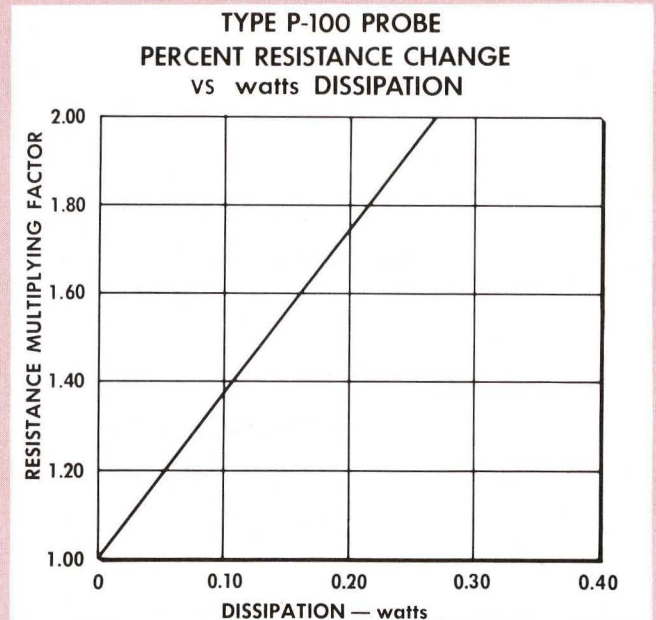
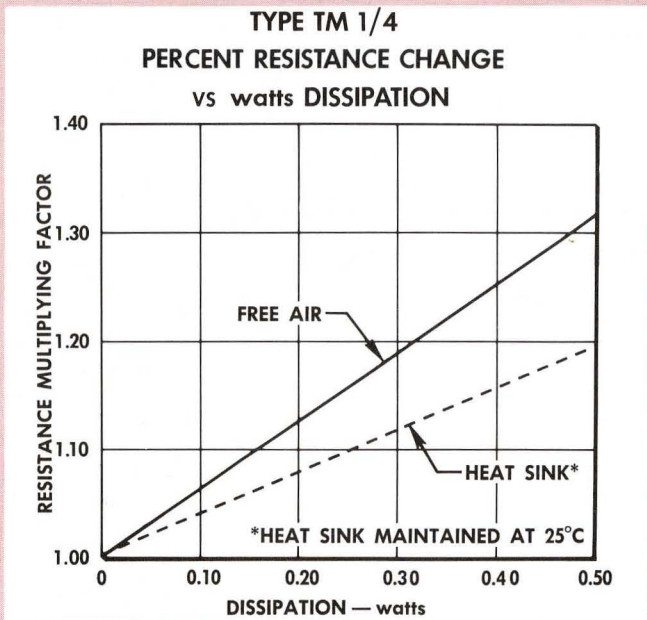
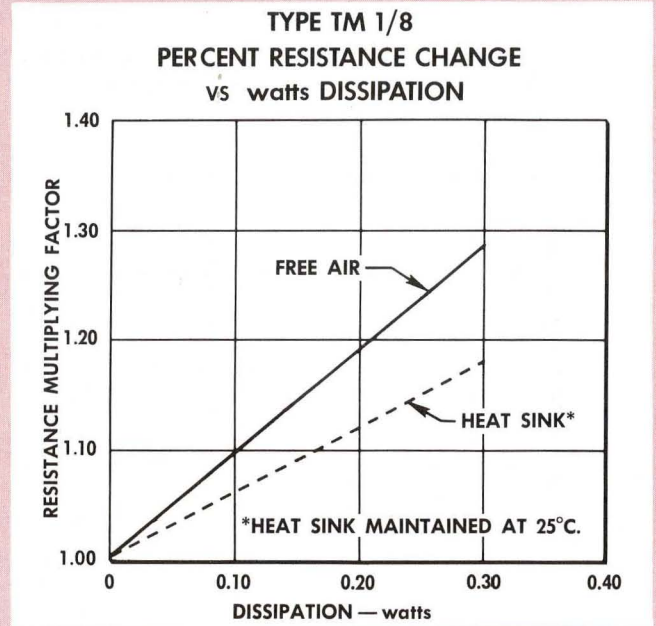
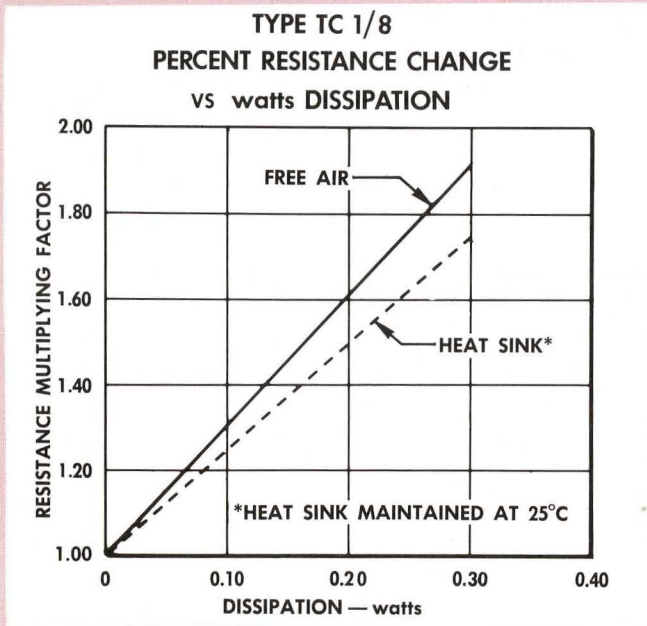
*A trademark of Texas Instruments Incorporated.

mechanical specifications



TYPES TM 1/8, TM 1/4, TC 1/8 AND P-100 PROBE

TYPICAL CHARACTERISTICS

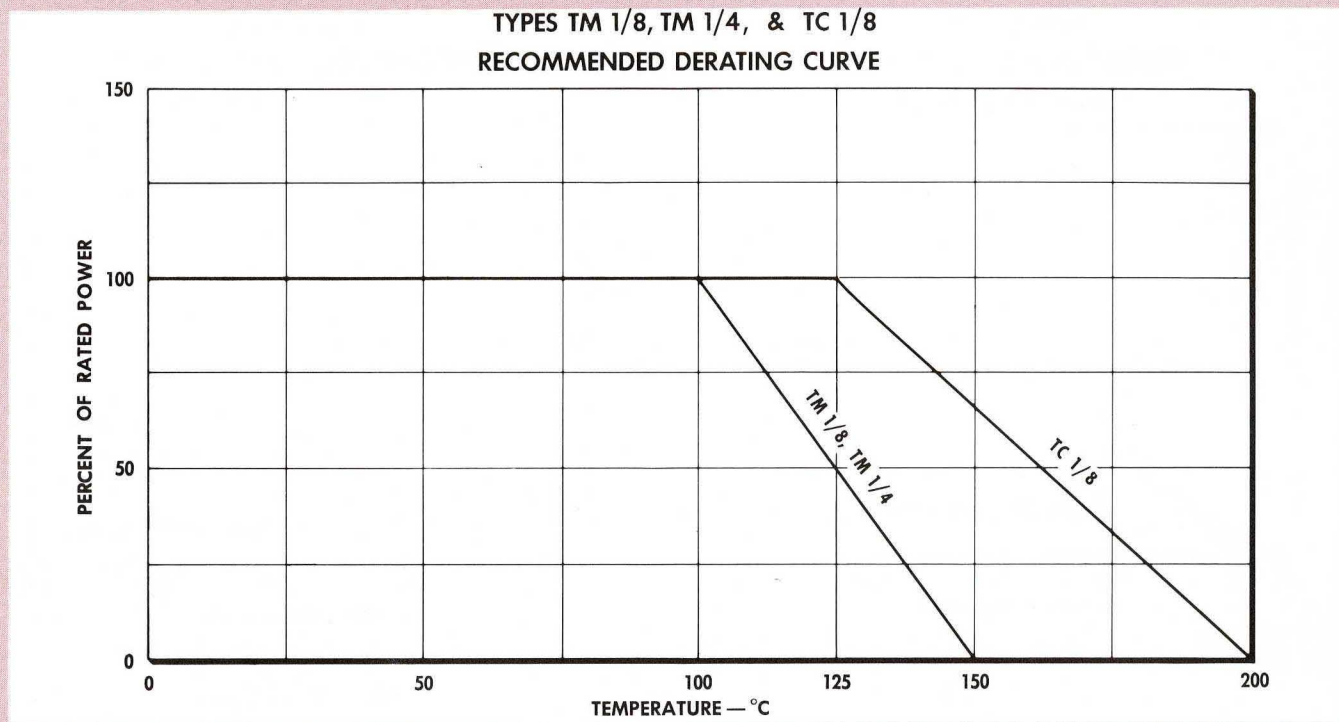


TO CORRECT RESISTANCE VALUE FOR SELF-HEATING EFFECT, DETERMINE CORRECTION FACTOR FROM THE ABOVE CURVE. CHOOSE THE NEAREST APPROXIMATE HEAT DISSIPATION CONDITION (FREE STILL AIR OR STRAPPED TO THE CHASSIS OR HEAT SINK). MULTIPLY THE FACTOR THUS OBTAINED BY RESISTOR VALUE WHICH HAS BEEN CORRECTED FOR NO LOAD AMBIENT TEMPERATURE IF NECESSARY.



TYPES TM 1/8, TM 1/4, TC 1/8 AND P-100 PROBE

TYPICAL CHARACTERISTICS



military applications

The *sensistor* silicon resistor has been designed to operate under military test conditions. Detailed test procedures and test limits have been developed using the methods of Mil-Std-202. Test details and parameters are available for the following:

Test Title	Mil-Std-202
Temperature Cycling	Method 102
Barometric Pressure	Method 105
Moisture Resistance	Method 106
Vibration	Method 201
Shock	Method 202
Dielectric Strength	Method 301
Insulation Resistance	Method 302

Special methods have been developed for load life and temperature coefficient. Test details, recommended test parameters, and test data are available upon request.

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TYPES TM 1/8, TM 1/4, TC 1/8 AND P-100 PROBE

TYPICAL CHARACTERISTICS

electrical specifications

	TM 1/8	TC 1/8	TM 1/4	P-100 PROBE	UNIT
Wattage Rating	1/8	1/8	1/4	rating not applicable	watt
Thermal Time Constant	34.8	54	54	9.0	sec

standard available resistance (ohms) at 25° C † — resistance tolerance ±10%

Type TM 1/8, TM 1/4, and TC 1/8

100	150	220	330	470	560	820
120	180	270	390	500	680	1000

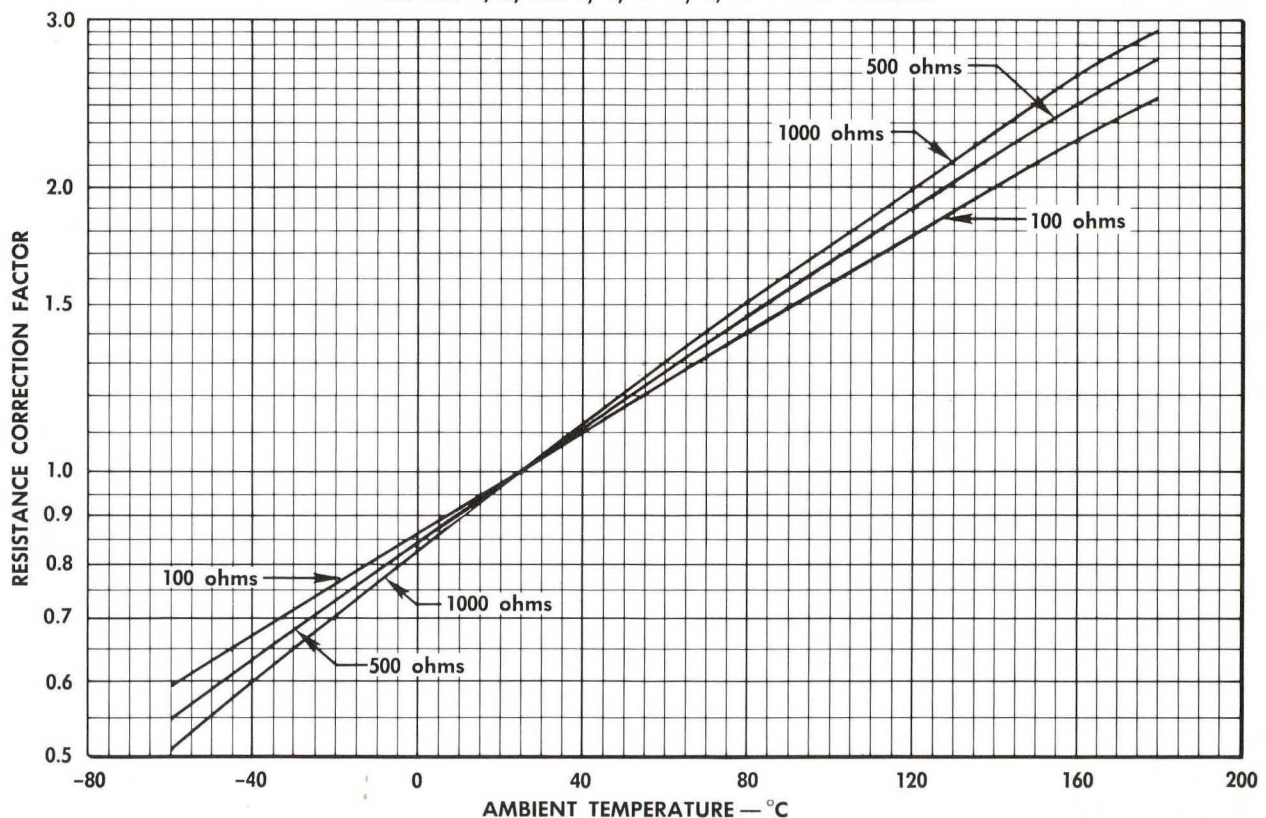
Type P-100 Probe

100	500	1000
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†5% tolerance, matched pairs, and other resistance values available as special devices.

AMBIENT TEMPERATURE CORRECTION FACTOR CURVE

TYPES TM 1/8, TM 1/4, TC 1/8, & P-100 PROBE



THE CORRECTION FACTOR IS A FUNCTION OF THE STANDARD RESISTANCE VALUE (PLOTTED CURVE) AND THE NEW TEMPERATURE (ABSCISSA)

TEXAS INSTRUMENTS

INCORPORATED

SEMICONDUCTOR COMPONENTS DIVISION

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