

NIFE TEMPERATURE SENSOR CHIP SPECIFICATIONS
 GENERAL DESCRIPTION: AN INTEGRATED CIRCUIT CONSISTING OF A NIFE THIN FILM RESISTANCE ELEMENT WITH A LASER TRIMMED SERIES LADDER

TABLE 1

ABSOLUTE MAXIMUM RATINGS	
OPERATING RANGE	-40°C (-40°F) TO 150°C (302°F)
STORAGE TEMPERATURE	-55°C (-67°F) TO 170°C (338°F)
VOLTAGE	10 VDC CONTINUOUS (24 HOURS)

TABLE 2

CHARACTERISTICS	
TEMPERATURE	RESISTANCE (OHMS)
-40°C (-40°F)	1584*12 (*1.9°C)
-30°C (-22°F)	1649*11 (*1.7°C)
-20°C (-4°F)	1715*10 (*1.5°C)
-10°C (14°F)	1784*9 (*1.3°C)
0°C (32°F)	1854*8 (*1.1°C)
+10°C (50°F)	1926*6 (*0.8°C)
+20°C (68°F)	2000*5 (*0.7°C)
+30°C (86°F)	2076*5 (*0.7°C)
+40°C (104°F)	2153*6 (*0.8°C)
+50°C (122°F)	2233*7 (*0.9°C)
+60°C (140°F)	2314*9 (*1.1°C)
+70°C (158°F)	2397*10 (*1.2°C)
+80°C (176°F)	2482*12 (*1.4°C)
+90°C (194°F)	2569*14 (*1.6°C)
+100°C (212°F)	2658*16 (*1.8°C)
+110°C (230°F)	2748*18 (*2.0°C)
+120°C (248°F)	2840*19 (*2.0°C)
+130°C (266°F)	2934*21 (*2.2°C)
+140°C (284°F)	3030*23 (*2.4°C)
+150°C (302°F)	3128*25 (*2.5°C)

RESISTANCE vs TEMPERATURE

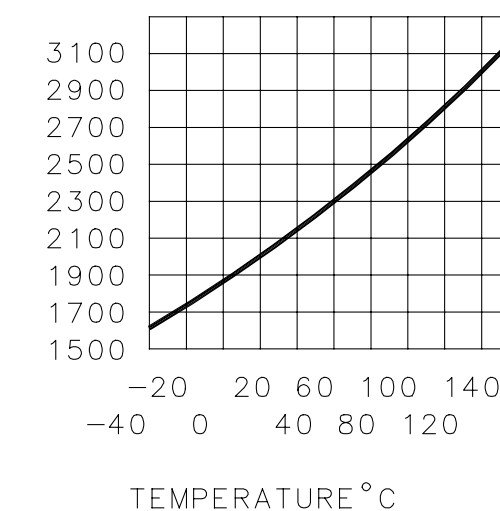


TABLE 3

TYPICAL TIME CONSTANT	11.0 SEC STILL AIR
TEMPERATURE RISE	.23°C PER MILLIWATT IN STILL AIR

EQUATION FOR COMPUTING RESISTANCE:

$$R_T = R_0(1 + 3.84 \times 10^{-3} T + 4.94 \times 10^{-6} T^2)$$

R_T = RESISTANCE AT TEMPERATURE T

R_0 = RESISTANCE AT 0°C

T = TEMPERATURE IN °C

NOTES

- ① CHARACTERISTICS IN TABLE 2 WERE READ AT 100 μ A WITH SENSOR SUSPENDED IN AIR. IT IS RECOMMENDED THAT RESISTANCE MEASUREMENTS BE MADE AT 100 μ A OR LESS TO MINIMIZE INTERNAL HEATING OF SENSOR. MEASUREMENTS AT CURRENTS UP TO 1 mA WILL NOT DAMAGE THE SENSOR BUT THE CHARACTERISTIC TABLE 2 SHOULD BE ADJUSTED FOR INTERNAL HEATING PER THE TEMPERATURE RISE VALUE IN TABLE 3
- ② TEMPERATURE ERROR EQUIVALENT TO RESISTANCE ERROR
- ③ - ABSOLUTE MAXIMUM RATINGS ARE THE EXTREME LIMITS THAT THE DEVICE WILL WITHSTAND WITHOUT DAMAGE TO THE DEVICE
- ④ .004 STEP PERMISSIBLE
- ⑤ ELECTRICAL CONNECTION MADE TO 2 OUTER LEADS
- ⑥ MOLDED PART DIMENSIONS DO NOT INCLUDE FLASH. FLASH IS LIMITED TO .005 MAXIMUM
- ⑦ - BURRS ARE ALLOWED ONLY IF FULL LENGTH OF LEADS WILL PASS THROUGH ϕ .023 HOLE. LEAD REFERENCE DIMENSIONS DO NOT INCLUDE SOLDER THICKNESS
- ⑧ DIMENSION REFERS TO THE LOCATION OF LEAD CENTERLINES AS THEY EXIT THE PLASTIC PACKAGE

DRAWING NUMBER TD5A
 ISSUE 4
 PAGE 1 OF 1
 RELEASE NO. PR-16645
 REPLACES X83522-TD

REVISIONS
 A CO-75147B
 J A 25 MAR 94
 B CO92291
 K 9 DEC 97
 C CO92862
 L 7 APR 98
 DDM/CAD
 DRAWN
 JAS 19OCT88
 CHECK KAG 19OCT88
 CHECK

MASTER REDUCED
 ANSI Y14.5M-1982 APPLIES

THIS DRAWING COVERS A PROPRIETARY ITEM AND IS THE PROPERTY OF MICRO SWITCH, A DIVISION OF HONEYWELL. THIS DRAWING IS NOT TO BE COPIED OR USED WITHOUT THE APPROVAL OF MICRO SWITCH.

MICRO SWITCH
 a Honeywell Division

CATALOG LISTING
TD5A

TEMPERATURE SENSOR

FED. MFG. CODE 91929

THIRD ANGLE PROJECTION

SCALE 8:1

DO NOT SCALE PRINT

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE

ONE PLACE	(.0)	±.030
TWO PLACES	(.00)	±.015
THREE PLACES	(.000)	±.005
ANGLES		±

WEIGHT