

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

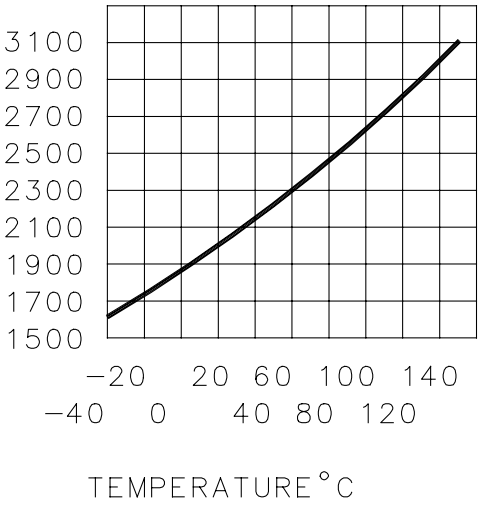


TABLE 3

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

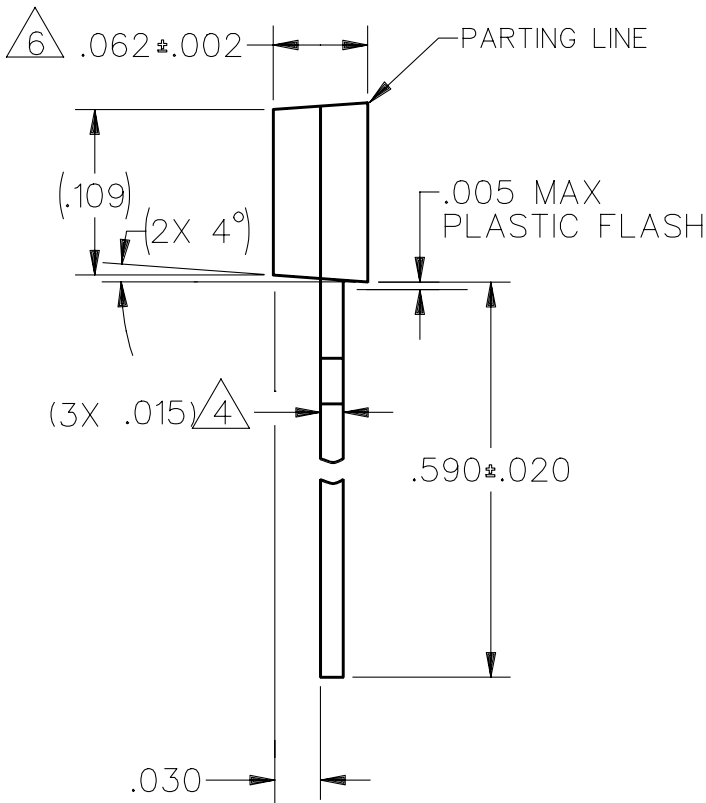
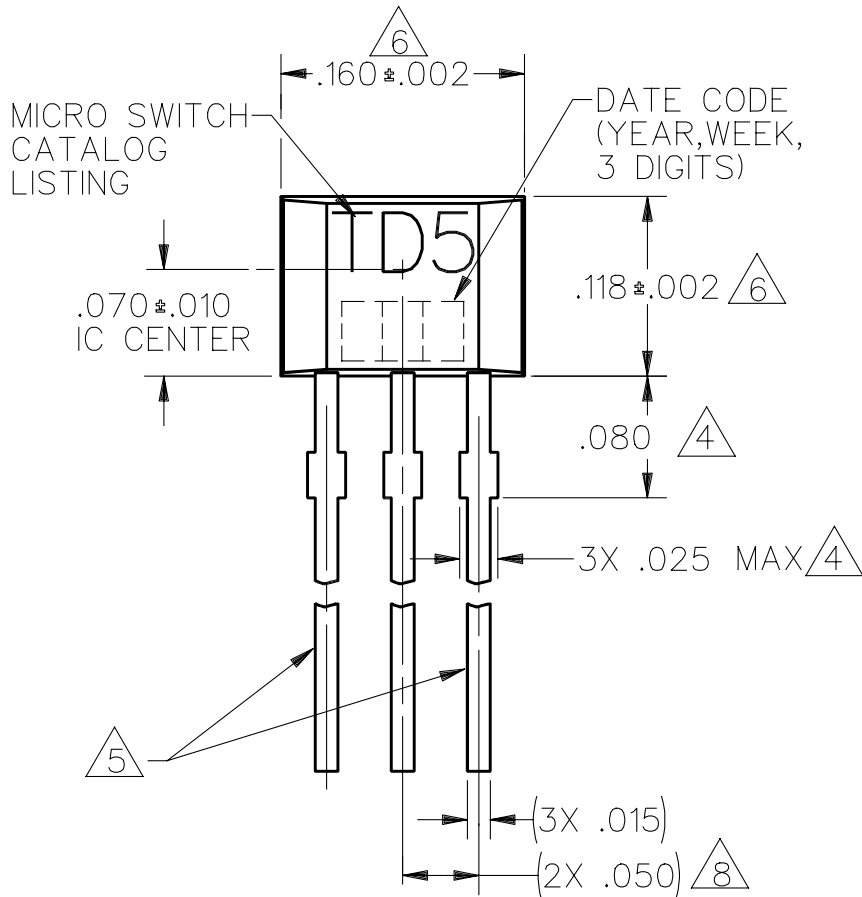
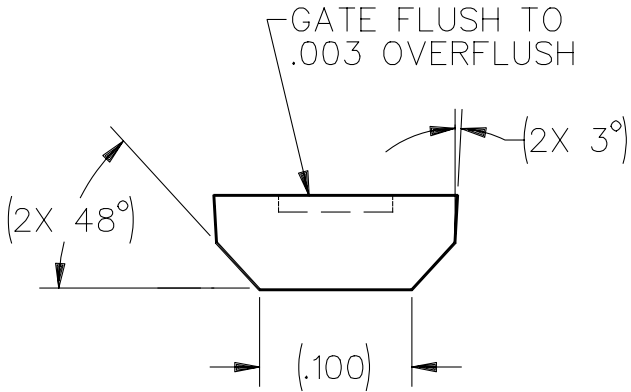
EQUATION FOR COMPUTING RESISTANCE:

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

R_T = RESISTANCE AT TEMPERATURE T

R_0 = RESISTANCE AT 0°C

T = TEMPERATURE IN °C



NOTES

- 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
- TEMPERATURE ERROR EQUIVALENT TO RESISTANCE ERROR
- ABSOLUTE MAXIMUM RATINGS ARE THE EXTREME LIMITS THAT THE DEVICE WILL WITHSTAND WITHOUT DAMAGE TO THE DEVICE
- .004 STEP PERMISSIBLE
- ELECTRICAL CONNECTION MADE TO 2 OUTER LEADS
- MOLDED PART DIMENSIONS DO NOT INCLUDE FLASH. FLASH IS LIMITED TO .005 MAXIMUM
- BURRS ARE ALLOWED ONLY IF FULL LENGTH OF LEADS WILL PASS THROUGH $\varnothing$.023 HOLE. LEAD REFERENCE DIMENSIONS DO NOT INCLUDE SOLDER THICKNESS
- DIMENSION REFERS TO THE LOCATION OF LEAD CENTERLINES AS THEY EXIT THE PLASTIC PACKAGE

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MICRO SWITCH a Honeywell Division	TEMPERATURE SENSOR	CATALOG LISTING
		TD5A
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		