

T H E R M O M E T R I C S
A C O M M I T M E N T T O E X C E L L E N C E

ZTP-135SR

Thermometrics Thermopile IR Sensor



This thermopile sensor is used for non-contact surface temperature measuring. The ZTP-135SR model consists of thermo-elements, flat IR filter, a thermistor for temperature compensation in a hermetically-sealed TO-46(18) package. There is also a variety of filters available to help maximize performance in specific applications.

Applications

- Ear thermometers
- Non-contact thermometers
- Appliances
- Electronics

Features

- Small-size sensor (TO-46 package)
- Included ambient temperature (thermistor) sensor for compensation
- High sensitivity
- Fast response time
- Low cost

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Thermopile Chip

Parameter	Limits			Units	Condition
	Min	Typ	Max		
Chip Size	1.8 x 1.8			mm ²	
Diaphragm Size	1.4 x 1.4			mm ²	
Active Area	0.7 x 0.7			mm ²	
Internal Resistance	42	60	81	kΩ	25 °C
Resistance T.C.				0.12	%/°C
Responsivity	43	62	81	V/W	500K, 1Hz
Responsivity T.C.				-0.10	%/°C
Noise Voltage	32			nV rms	R.M.S., 25 °C
NEP	0.51			nW/Hz ^{1/2}	500K, 1Hz
Detectivity	1.35 E08			cmHz ^{1/2} /W	500K, 1Hz
Time Constant	25			ms	

Thermistor

Parameter	Limits			Units	Condition
	Min	Typ	Max		
Resistance	97	100	103	kΩ	Tol.:3%, @25 °C
Beta - Value	3920	3960	4000	K	Tol.:1%, Defined at @25 °C/50 °C

Absolute Maximum Ratings

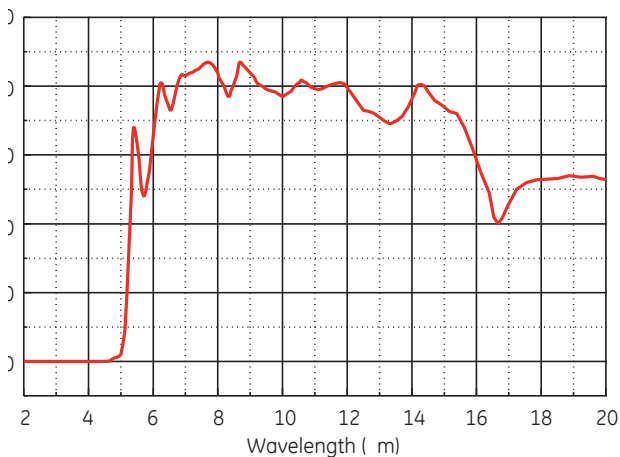
Operating Temperature

-20°C ~ 100°C

Storage Temperature

-40°C ~ 120°C

Filter Transmission Data

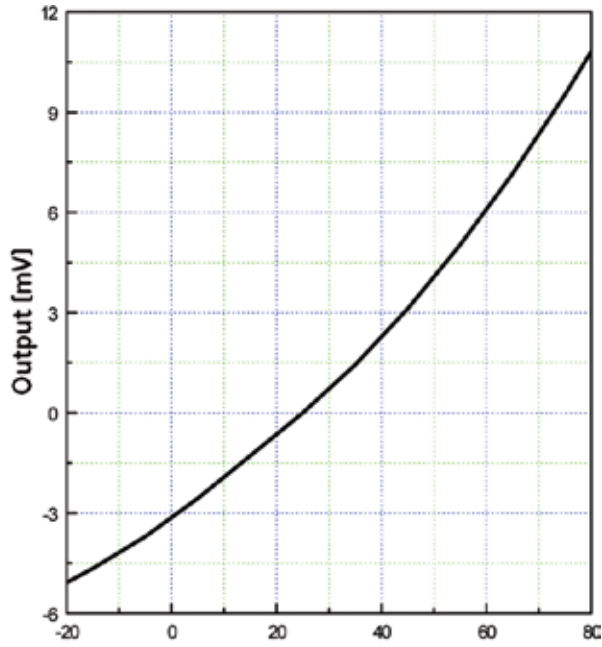


Thermistor Resistance (R-T Table)

Tamb (°C)	Rmin (kΩ)	Rcent (kΩ)	Rmax (kΩ)
-20	909.1	947.9	987.3
-15	687.7	715.9	744.7
-10	524.5	545.4	566.5
-5	403.3	418.8	434.5
0	312.6	324.1	335.8
5	244.0	252.7	261.5
10	191.8	198.5	205.1
15	151.9	156.9	162.0
20	121.0	124.9	128.8
25	97.00	100.0	103.0
30	78.05	80.55	83.06
35	63.16	65.25	67.36
40	51.39	53.15	54.91
45	42.03	43.51	45.00
50	34.54	35.79	37.05
55	28.52	29.58	30.65
65	19.70	20.47	21.25
70	16.48	17.14	17.81
75	13.83	14.40	14.98
80	11.66	12.15	12.65
85	9.867	10.29	10.72
90	8.380	8.745	9.118
95	7.143	7.460	7.785
100	6.111	6.388	6.670

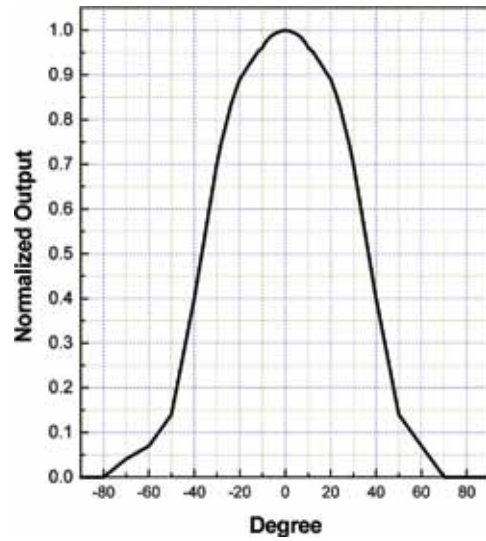
Typical Characteristic Data

Sensitivity

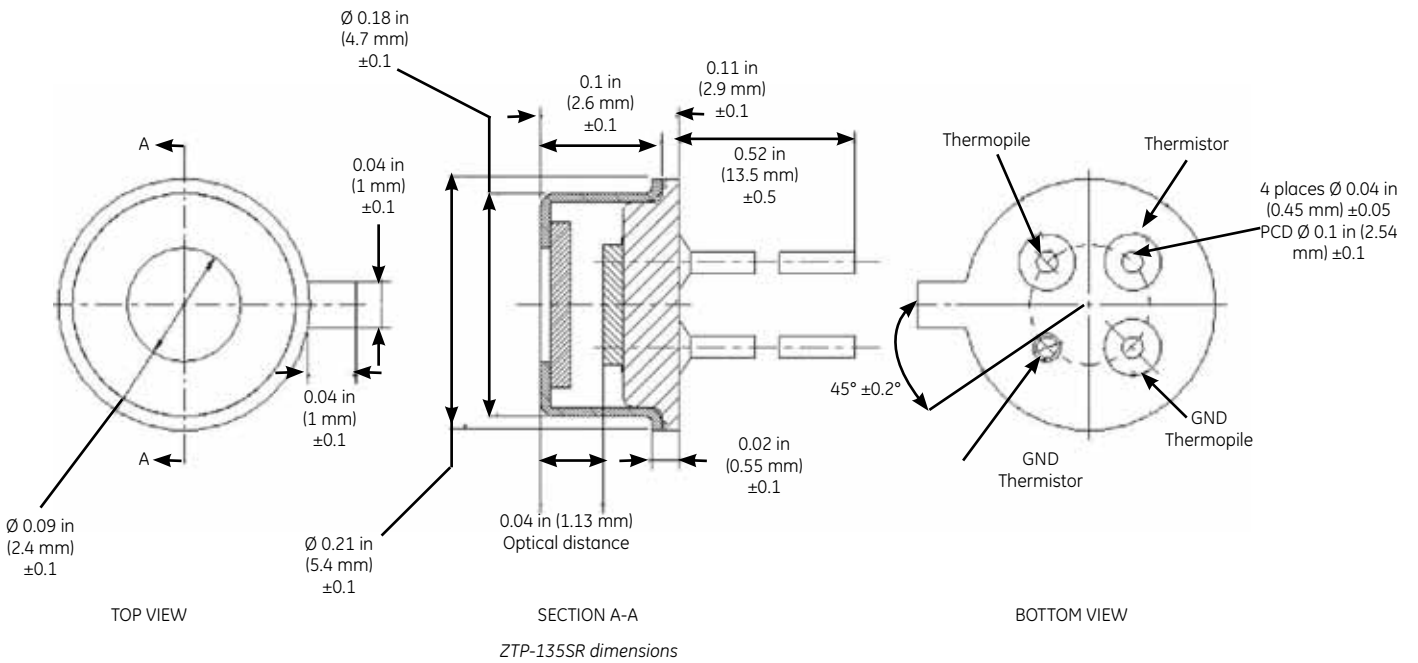


Field of View

Parameter	Limits			Units	Condition
	Min	Typ	Max		
Field of View	80	85	90	Degree	50% of Maximum Output



Outline of Sensor Package and Pin Arrangement



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