THERMOMETRICS
A COMMITMENT TO EXCELLENCE

ZTP-135BS

Thermometrics Thermopile IR Sensor

This thermopile sensor is used for non-contact surface temperature measuring. The ZTP-135BS model consists of thermo-elements, a flat IR filter, and 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

- Industrial IR thermometer
- Ear thermometers
- Non-contact thermometers

Features

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

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Specifications

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	78	kΩ	25 °C
Resistance T.C.			0.12	%./ °C	
Responsivity	38	54	70	V/W	500K, 1Hz
Responsivity T.C.		-0.03		%./ °C	
Noise Voltage		32		nV rms	R.M.S., 25 °C
NEP		0.59		$nW/Hz^{1/2}$	500K, 1Hz
Detectivity		1.18 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	3901	3940	3979	K	Tol.:1%, Defined at @25 °C/50 °C

Absolute Maximum Ratings

Operating Temperature
-20°C ~ 100°C

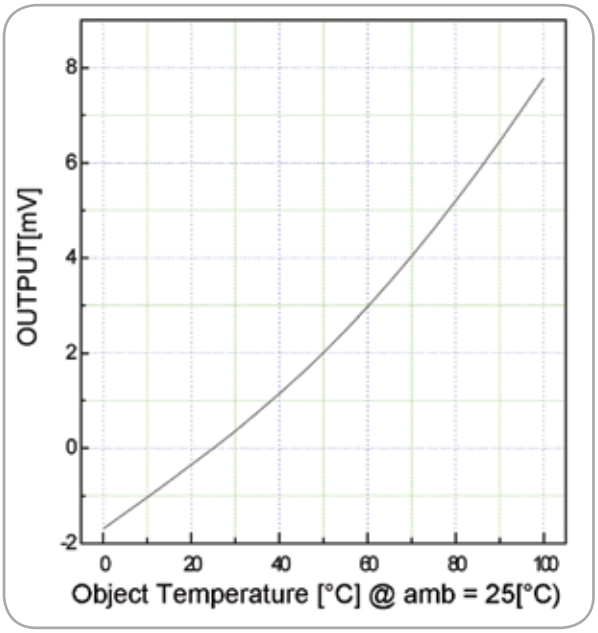
Storage Temperature
-40°C ~ 120°C

Thermistor Resistance (R-T Table)

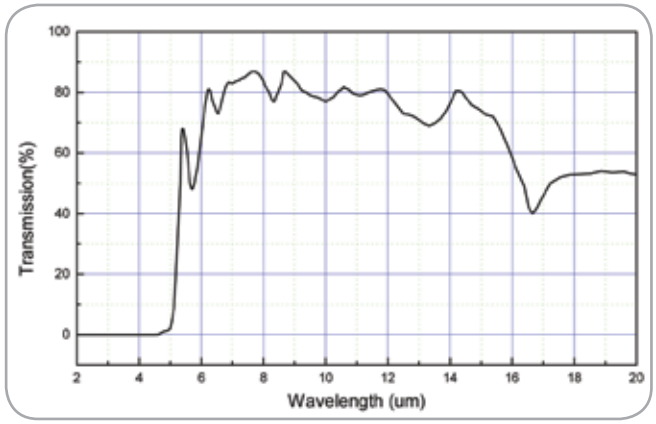
Tamb (°C)	Rmin (kΩ	Rcent (kΩ)	Rmax (kΩ)
-20	893.6	931.5	970.3
-15	677.5	705.3	733.6
-10	518.0	538.5	559.4
-5	399.2	414.5	430.0
0	310.1	321.5	333.1
5	242.5	251.2	259.9
10	191.0	197.6	204.2
15	151.5	156.5	161.6
20	120.8	124.7	128.6
25	97.00	100.0	103.0
30	78.14	80.65	83.15
35	63.30	65.40	67.50
40	51.56	53.32	55.09
45	42.21	43.69	45.19
50	34.72	35.98	37.25
55	28.70	29.77	30.85
60	23.83	24.74	25.66
65	19.88	20.66	21.44
70	16.65	17.32	17.99
75	14.00	14.58	15.16
80	11.82	12.32	12.82
85	10.022	10.45	10.88
90	8.526	8.896	9.275
95	7.278	7.601	7.930
100	6.235	6.516	6.804

Typical ZTP-135BS Characteristic Data

Sensitivity

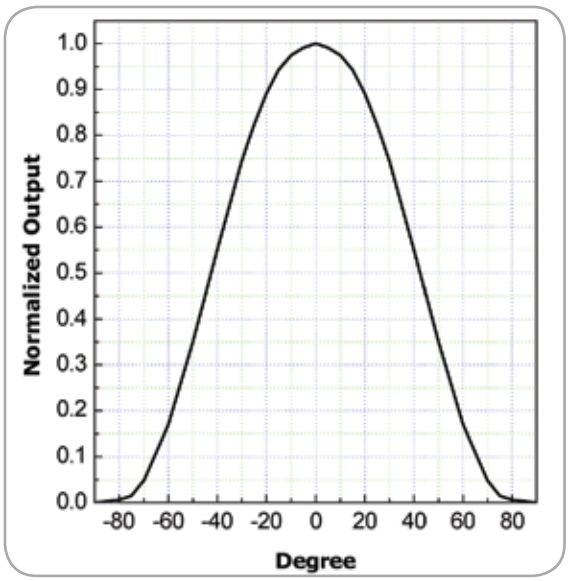


Filter Transmission Data

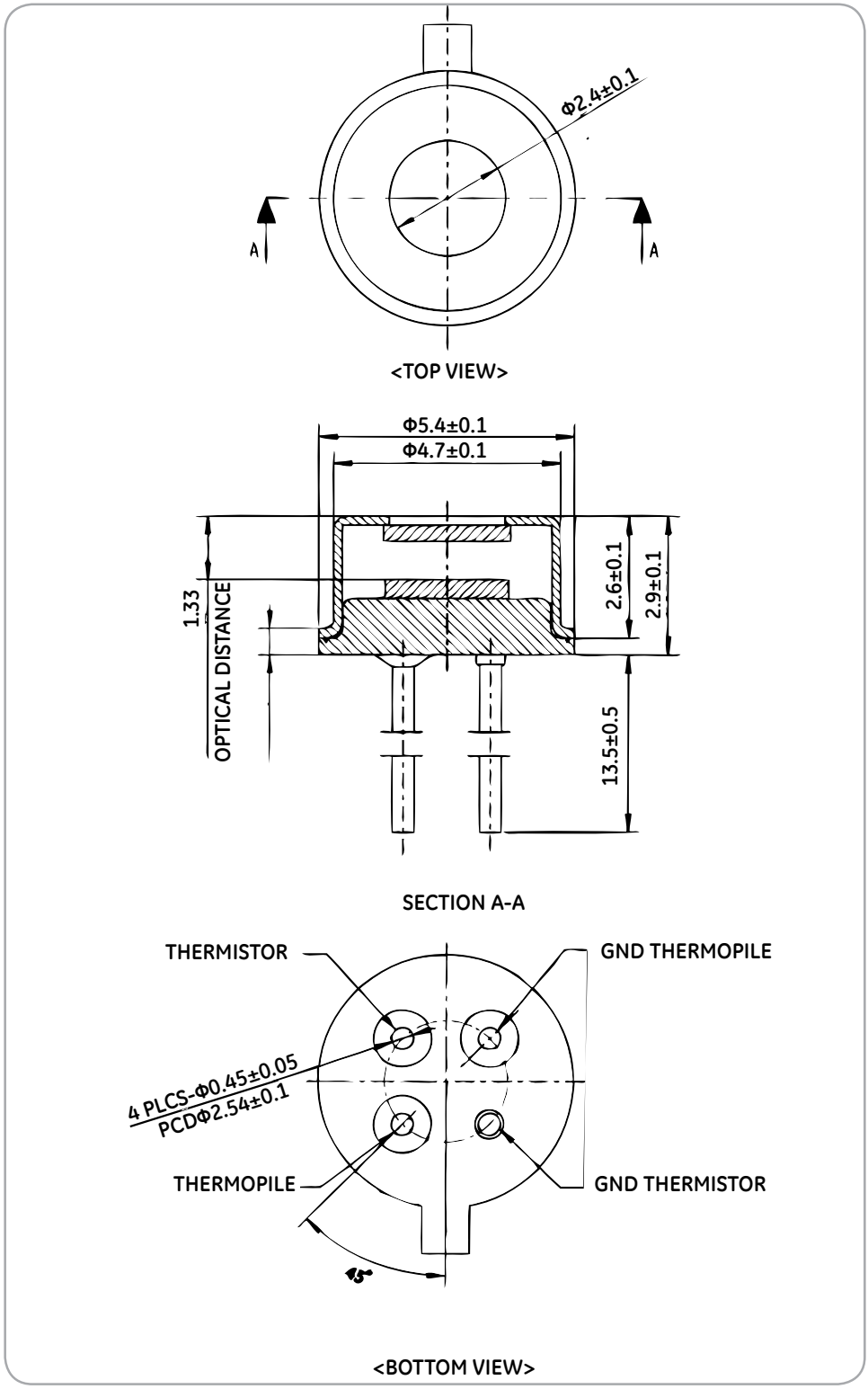


Field of View

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 (unit: mm)



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