

T H E R M O M E T R I C S
A COMMITMENT TO EXCELLENCE

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

Amphenol
Advanced Sensors

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

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

Absolute Maximum Ratings

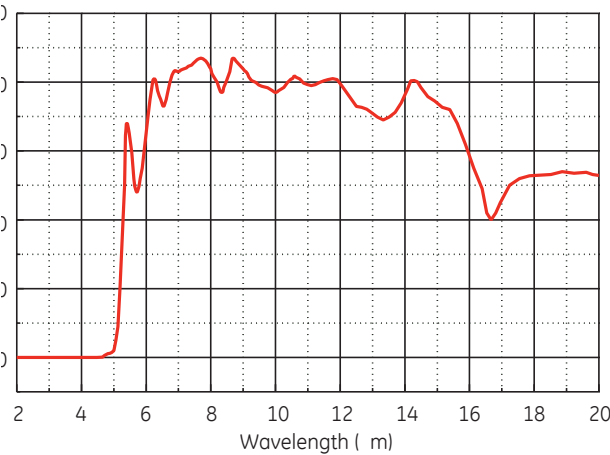
Operating Temperature

-20°C ~ 100°C

Storage Temperature

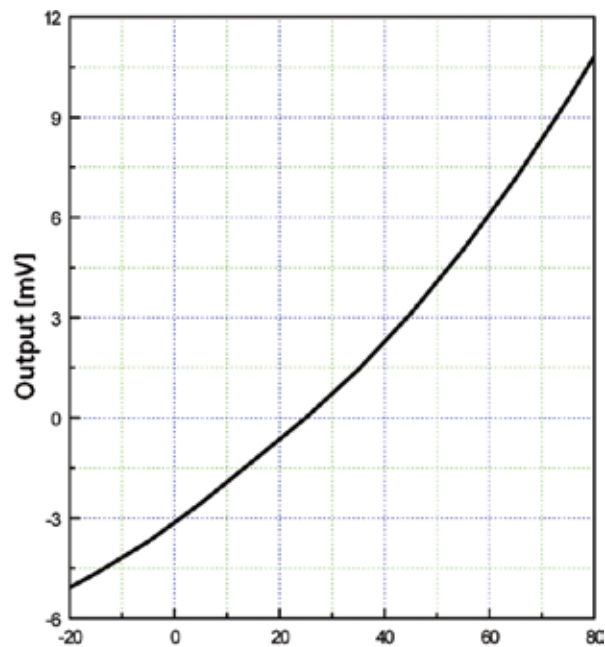
-40°C ~ 120°C

Filter Transmission Data



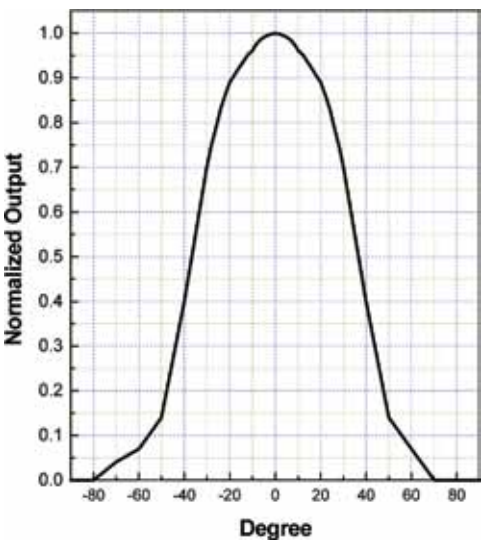
Typical Characteristic Data

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

