

Part Name	ZTP-148SRC1	Part No.	IRF038M01-00A0	Rev.	0.0
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SPECIFICATION of THERMOPILE IR SENSOR

Product Name: ZTP-148SRC1



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1. Feature of ZTP-148SRC1

1.1 Thermopile Chip

Parameter	LIMITS			UNIT	CONDITION
	MIN	TYP	MAX		
CHIP SIZE		1.8 X 1.8		mm ²	
DIAPHRAGM SIZE		1.0 X 1.0			
ACTIVE AREA		0.7 X 0.7		mm ²	Absorber area
INTERNAL RESISTANCE	60	85	110	kΩ	@25°C
RESISTANCE T.C			0.12	%/°C	
RESPONSIVITY		54		V/W	500K, 1Hz,
RESPONSIVITY T.C		-0.07		%/°C	
NOISE VOLTAGE		37		nV/Hz ^{1/2}	R.M.S, 25°C
NEP		0.69		nW/Hz ^{1/2}	
DETECTIVITY		1.02		cmHz ^{1/2} /W	
TIME CONSTANT		32		ms	

1.2 Thermistor

- NTC Thermistor for Temperature Compensation

Parameter	LIMITS			UNIT	CONDITION
	Min	Typ	Max		
RESISTANCE		100		kΩ	Tolerance.: ±3% @ 25°C
Beta – Value		3950		K	Tolerance.: ±1% @ 25°C/50°C

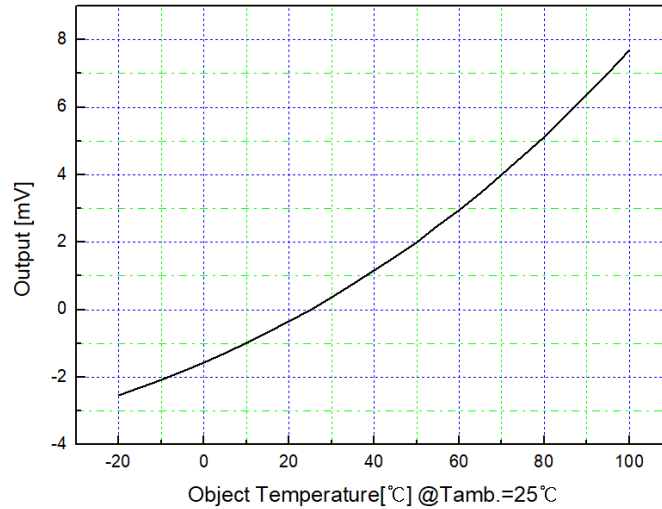
1.3 Absolute maximum ratings

- Operating Temperature : -20°C ~ 100°C
- Storage Temperature : -40°C ~ 120°C

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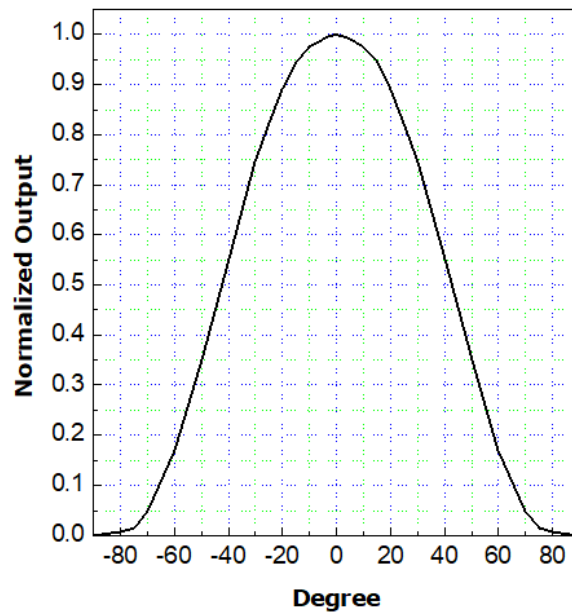
2. Typical Characteristic data of ZTP-148SRC1

2.1 Sensitivity



2.2 Field of View

Parameter	LIMITS			Units	Condition
	Min	Typ	Max		
Field of View		85		Degree	50% of Maximum Output

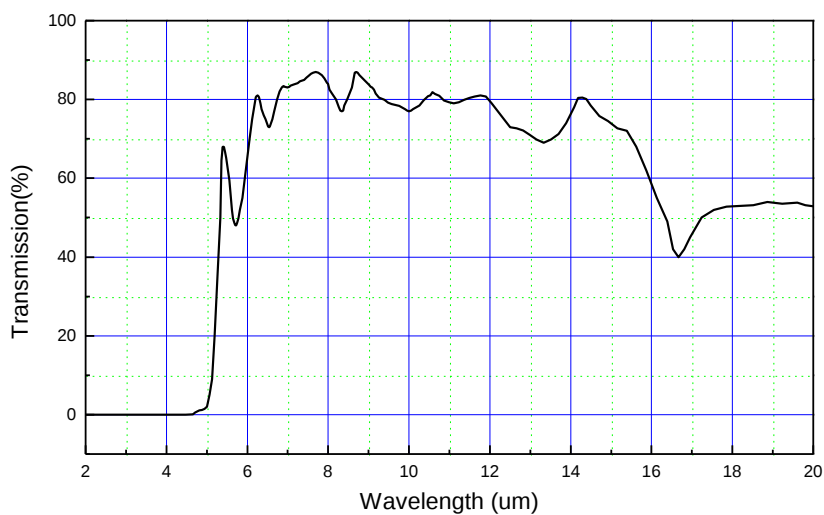


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2.3 Thermistor Resistance table

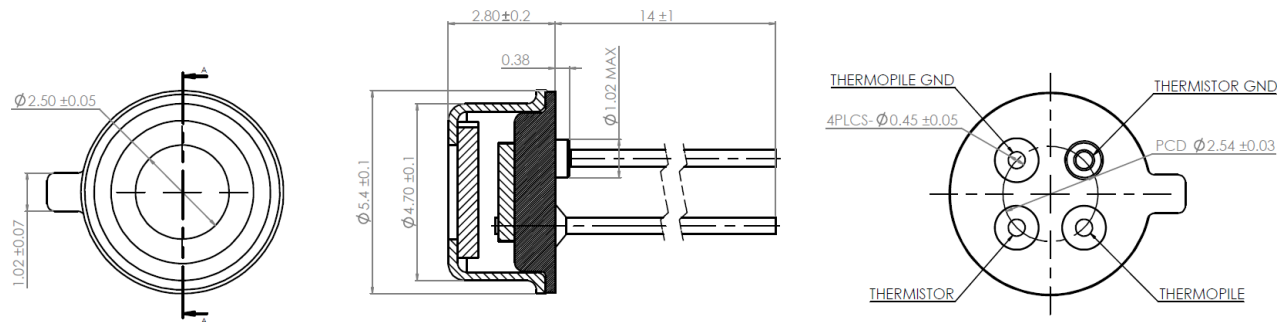
Temperature (°C)	Minimum resistance(k Ω)	Typical resistance(k Ω)	Maximum resistance(k Ω)
-20	925.2	975.8	1028.2
-15	696.2	732.2	769.3
-10	528.9	554.7	581.2
-5	405.5	424.1	443.2
0	313.5	327.0	340.8
5	244.3	254.2	264.3
10	191.9	199.2	206.6
15	151.8	157.2	162.7
20	121.0	125.0	129.0
25	97.0	100.0	103.0
30	77.9	80.5	83.1
35	63.0	65.2	67.5
40	51.2	53.2	55.1
45	41.9	43.6	45.2
50	34.5	35.9	37.3
55	28.5	29.7	31.0
60	23.6	24.7	25.8
65	19.7	20.7	21.6
70	16.5	17.3	18.2
75	13.9	14.6	15.4
80	11.8	12.4	13.0
85	10.0	10.5	11.1
90	8.5	9.0	9.5
95	7.3	7.7	8.1
100	6.2	6.6	7.0

2.4 Transmission data of Filter



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3. Outline of Sensor package and pin arrangement [Unit : mm]



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