



TECHNICAL DATA THERMOPILE SENSORS
TPS 334-L10.6 / Preliminary

ONLY FOR INFORMATION
SUBJECT TO CHANGE

DESCRIPTION

The sensor type TPS334-L10.6 consists of a series of thermoelements, forming a sensitive area of 0.7*0.7mm². The sensor is hermetically sealed into a metal housing. The size of the housing is similar to TO-5. The window is equipped with a lens optics based on silicon. The TPS334-L10.6 is assembled with an additional thermistor temperature reference. The thermopile sensor exhibits an almost white noise, comparable to an ohmic resistance. The thermopile output signal is directly proportional to incident radiation power largely independent from the wavelength. The frequency behaviour corresponds to a low pass characteristic.

GENERAL DATA

Parameter	Value	Unit	Conditions
Thermopiles			
Sensitive Area	0.7*0.7	mm ²	absorber, typical
Responsivity	55	V/W	without filter or optics,500K,1Hz,typical
Resistance	75	kΩ	typical
Noise Voltage	35	nV/√Hz	r.m.s.,25°C,typical
NEP	0.58	nW/√Hz	without filter or optics,500K,1Hz,typical
Detectivity	1.2*10 ⁸	cm√Hz/W	without filter or optics,500K,1Hz,typical
Time Constant	25	ms	typical
TC of Resistance	<0.1	%/K	
TC of Responsivity	0.02	%/K	typical
Thermistor Temperature Reference			
Resistance	30	kΩ	defined at 25°C
Resistance Tolerance	+3 / -5	%	defined at 25°C
BETA - Value	3964	K	defined at 25°C/100°C
BETA -Tolerance	±1	%	for the total range of operation temperature
Temperature Range	-40..100	°C	operation / storage

HERMETIC SEAL

The Thermopile sensor is hermetically sealed to withstand a gross leaktest according toMIL Std.883 method 1014c1. The sensor is sealed with dry nitrogen.

SOLDERING

Hand soldering and wave soldering may be applied by a maximum temperature of 260°C for a dwell time less than 10s. Avoid heat exposure to the top and the window of the detector. Reflow soldering is not recommended.

QUALITY

HEIMANN is a ISO 9001 certified manufacturer with established SPC and TQM. All materials are checked according to specifications and final goods meet the specified tests.

HANDLING

Do not expose the sensors to aggressive detergents such as freon, trichlorethylen, etc. Windows may be cleaned with alcohol and cotton swab.

CAUTION

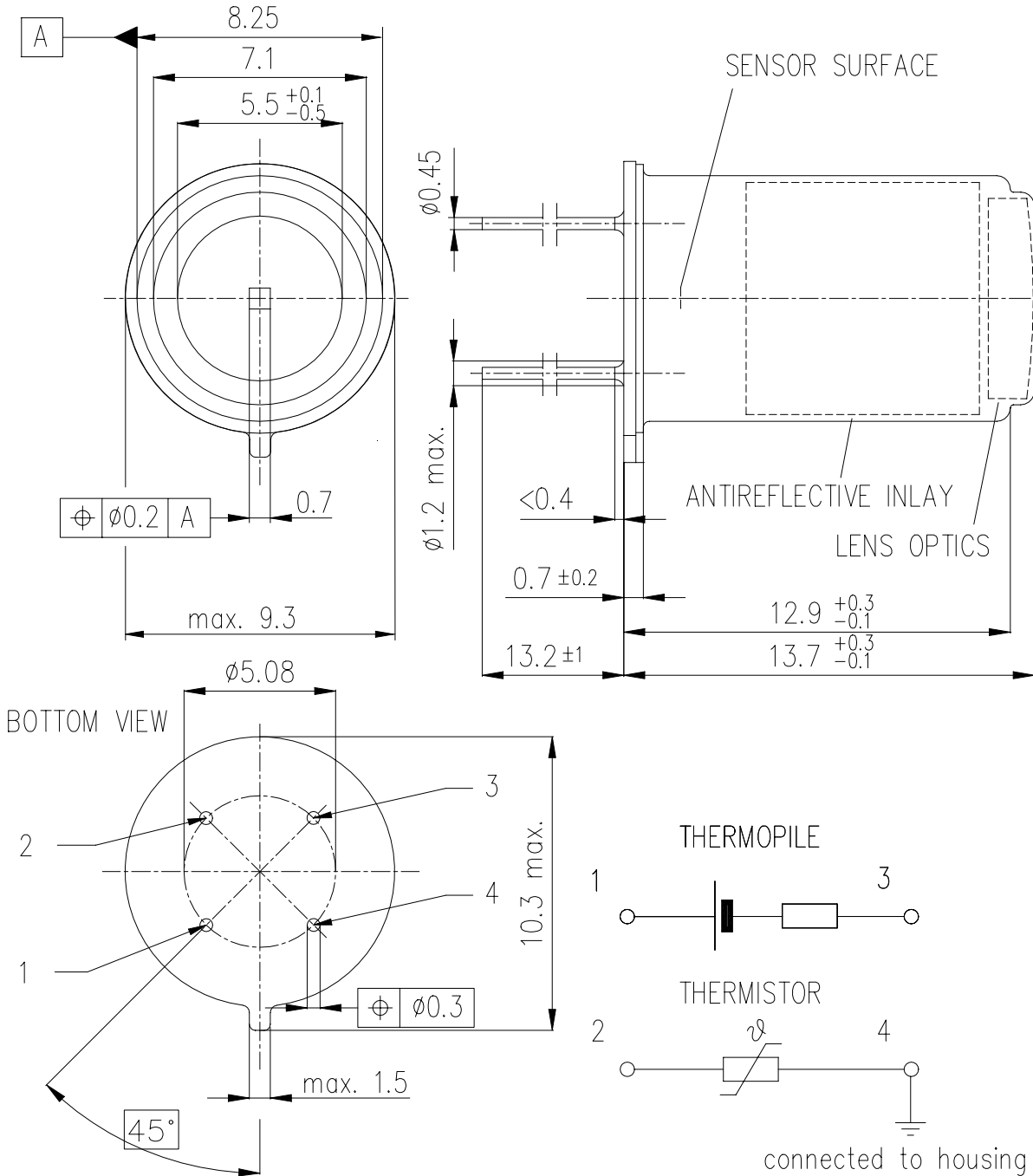
The thermopile sensors can be damaged by electrostatic discharges. Please take appropriate precautions for the handling.



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DIMENSIONS AND CONNECTIONS

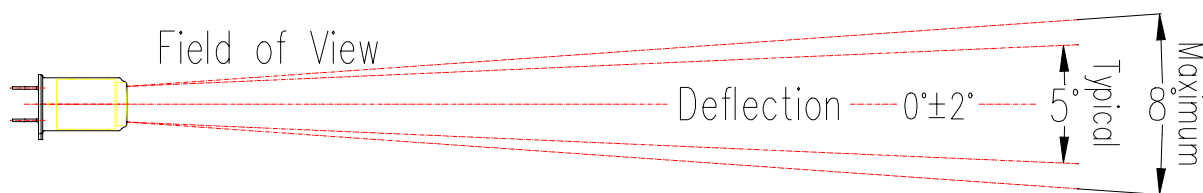
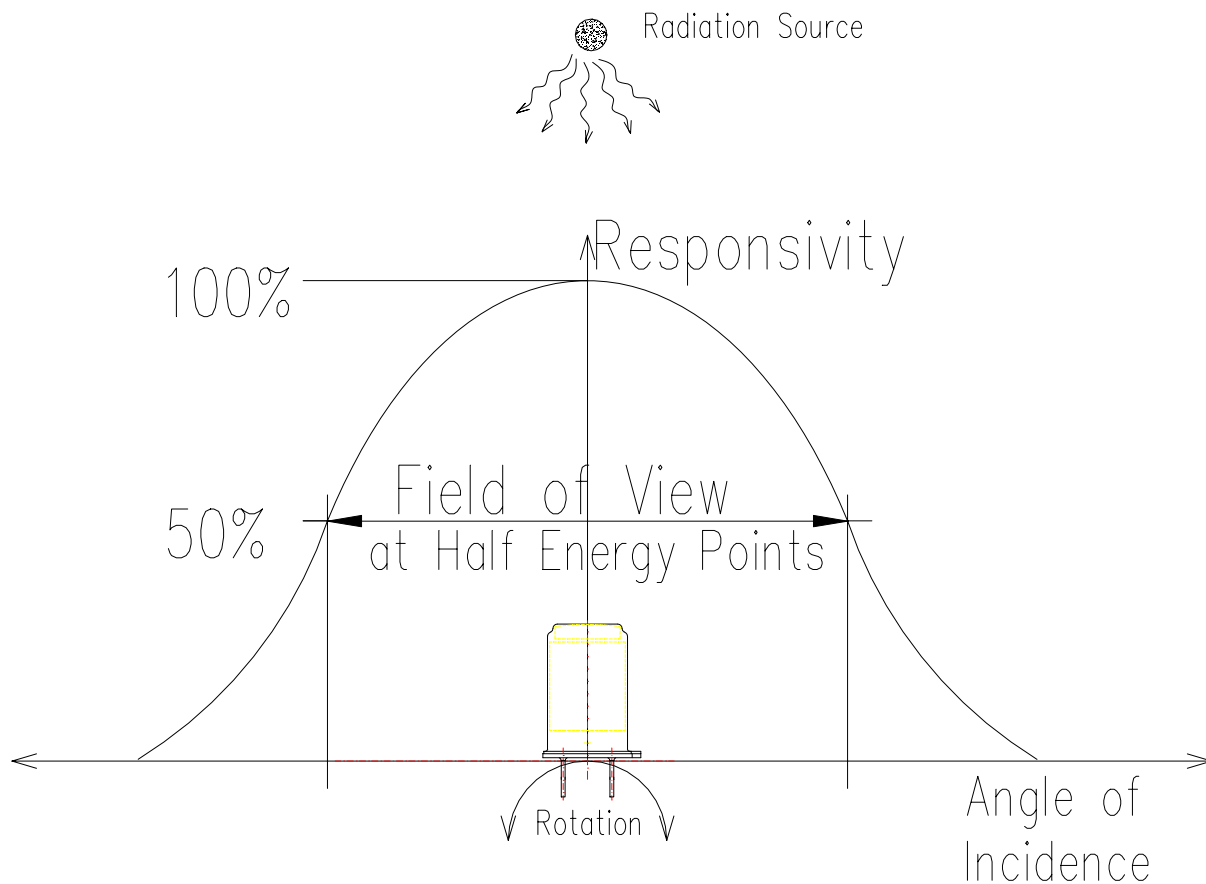




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FIELD OF VIEW





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THERMISTOR REFERENCE DATA

T	Rmin1	Rmin2	Rnom	Rmax2	Rmax1	ΔT_{min1}	ΔT_{min2}	ΔT_{max2}	ΔT_{max1}
°C	Ω	Ω	Ω	Ω	Ω	°C	°C	°C	°C
-40	808655	854015	907200	960385	987601	-1.74	-0.94	0.94	1.42
-35	594742	627892	663000	698108	717998	-1.67	-0.86	0.86	1.35
-30	441842	466322	489600	512878	527566	-1.63	-0.8	0.8	1.29
-25	331372	349627	365100	380573	391526	-1.6	-0.74	0.74	1.26
-20	250577	264307	274590	284873	293111	-1.58	-0.68	0.68	1.22
-15	191113	201531	208350	215169	221420	-1.54	-0.61	0.61	1.17
-10	146923	154893	159390	163887	168669	-1.49	-0.54	0.54	1.11
-5	113827	119973	122910	125847	129535	-1.43	-0.47	0.47	1.04
0	88824	93599	95490	97381	100246	-1.37	-0.39	0.39	0.98
5	69841	73578	74730	75882	78124	-1.33	-0.32	0.32	0.93
10	55297	58241	58890	59539	61305	-1.34	-0.25	0.25	0.9
15	44016	46352	46710	47068	48470	-1.38	-0.19	0.19	0.91
20	35330	37196	37320	37444	38563	-1.24	-0.08	0.08	0.78
25	28500	30000	30000	30000	30900	-1.17	0	0	0.7
30	22930	24143	24250	24357	25085	-1.3	-0.11	0.11	0.82
35	18570	19556	19720	19884	20475	-1.42	-0.21	0.21	0.94
40	15118	15924	16120	16316	16799	-1.56	-0.31	0.31	1.06
45	12383	13045	13250	13455	13852	-1.7	-0.41	0.41	1.18
50	10197	10744	10950	11156	11484	-1.84	-0.51	0.51	1.31
55	8434	8888	9090	9292	9564	-1.99	-0.62	0.62	1.44
60	7010	7389	7581	7773	8001	-2.13	-0.72	0.72	1.57
65	5858	6176	6354	6532	6723	-2.25	-0.81	0.81	1.68
70	4916	5183	5349	5515	5675	-2.38	-0.92	0.92	1.79
75	4146	4372	4524	4676	4812	-2.5	-1.01	1.01	1.9
80	3508	3700	3840	3980	4095	-2.63	-1.11	1.11	2.02
85	2981	3145	3273	3401	3500	-2.77	-1.22	1.22	2.15
90	2542	2682	2799	2916	3000	-2.93	-1.34	1.34	2.29
95	2179	2299	2405	2511	2583	-3.11	-1.46	1.46	2.45
100	1873	1977	2073	2169	2231	-3.34	-1.6	1.6	2.64



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TYPICAL FILTER CHARACTERISTICS

