

THERMOPILE OTP-538U

## Thermopile Sensor OTP-538U

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The OTP-538U is a thermopile sensor in classic TO-46 housing. The sensor is composed of 116 elements of thermocouple in series on a floating micro-membrane having an active diameter of 545  $\mu$ m. The thermopile sensor provides nearly Johnson-noise-limited performance, which can be calculated by its ohmic series resistance. A thermistor element, with a lead connected to ground, is also provided inside the TO package for ambient temperature reference.

- TO-46 metal housing
- Thermistor temperature reference included
- Low temperature coefficient of sensitivity
- Ideally suited for ear thermometers, miniature pyrometer.

Parameter	Тур	Unit	Conditions
Sensitivity	85	V/W	500K, 5-14μm
TC of sensitivity	0.11	%/ <b>K</b>	Typical
Sensitivity area in diameter	545	μm	
Resistance of thermopile	65	ΚΩ	<b>25</b> ℃
TC of resistance	0.09	%/ <b>K</b>	Typical
Time constant	16	ms	
Noise voltage	32	nV/Hz <sup>1/2</sup>	r.m.s 300K
NEP	0.36	nW/Hz <sup>1/2</sup>	500K, 5-14μm
Normalized detectivity (D*)	1.3*10 <sup>8</sup>	cm*Hz <sup>1/2</sup> / W	500K, 5-14μm
Thermistor resistance	100.0	ΚΩ	<b>25</b> ℃
β value	3964	K	25℃/100℃
Field of view	66	0	At 50% target signal
Cut on wavelength	5.0	μm	At 25℃, 50% transmittance





