

THERMOPILE OTP- N538U

## Thermopile Sensor OTP-N538U

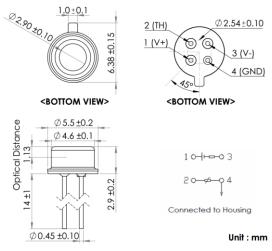
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The OTP-N538U is a thermopile sensor in classic TO-46 housing. The sensor is composed of 116 elements of thermocouple in series on a floating micro-membrane having an active area of diameter 545  $\mu$ m. The thermopile sensor provides nearly Johnson-noise-limited 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 with IR absorber coating inside
- Thermistor temperature reference included
- Low temperature coefficient of sensitivity
- Ideally suited for ear thermometers, miniature pyrometer.

Parameter	Тур	Unit	Conditions
Operating temperature	-20~100	င	
Storage temperature	-40~100	င	
Sensitivity	58	V/W	<b>※</b> 1
TC of sensitivity	0.11±0.05	%/K	<b>25</b> ℃
Thermopile voltage	1.3±0.4	mV	<b>※</b> 1
Active area in diameter	545	μm	
Resistance of thermopile	50±15	ΚΩ	<b>25</b> ℃
TC of resistance	0.09±0.05	%/K	<b>25</b> ℃
Time constant	16	ms	
Noise voltage	29	nV/Hz <sup>1/2</sup>	r.m.s, 25℃
NEP	0.48	nW/Hz <sup>1/2</sup>	<b>※</b> 1
Normalized detectivity (D*)	1.0*10 <sup>8</sup>	cm*Hz <sup>1/2</sup> /W	<b>※</b> 1
Thermistor resistance	100±5%	ΚΩ	<b>25</b> ℃
β value	3964±0.5%	K	<b>25℃/100℃</b>
Field of view	100	0	@50% target signal
Cut on wavelength	5±0.3	μm	@25℃, 50% transmittance



**%1** Test condition : Tb:50℃, Ta:25℃, 5-14μm filter

