



Dual and Quad Element Thermopile Detectors

General Data

Tc of sensitivity (absolute value): 0.02%/K

Tc of resistance (absolute value): 0.02%/K

Max. operating temperature: -20 to 100°C

Max. storage temperature: -40 to 100°C

Thermistor BETA: 3964 K

Option for all types: 8-14 μm

Pyrometry filter: G9



Thermopile Sensors in TO-46 (left) and Isothermal (right) Housing



Thermopile TPMI® Modules

Single Element Thermopile Detectors

Technical Specification

Part Number	Housing	Field of View	DC Sensitivity V/W	Output Voltage at Tamb = 25°C Tobj = 40°C (mV)	Time Constant ms	Active Area mm ²	TP Chip Resistance kΩ	Thermistor kΩ
TPS333	TO-18	100°	35	1.6	25	0.7x0.7	75	100
TPS334	TO-39	60°	35	0.74	25	0.7x0.7	75	30
TPS334G9	TO-39****	60°	20	0.4	35	0.7x0.7	75	30
TPS334L5.5	TO-39**	7°	55	0.3	25	0.7x0.7	75	30
TPS336-IRA	TO-39***	15°	35	1.0	25	0.7x0.7	75	30
TPS232	TO-46	110°	36	0.73	16	round, Ø 0.5	87	100
TPS23B	Isothermal TO-46	90°	36	0.65	16	round, Ø 0.5	87	Spreading resistor 1
TPS535	TO-39	80°	20	1.5	35	1.2x1.2	50	30

Test conditions: T = 25°C

Field of view: at 50% intensity points

* 500 K black body

*** with int. reflector

Noise: r.m.s., 300 K

** with 5.5 mm lens

**** with 8...12 μm IR window

Dual and Quad Thermopile Detectors for Optical Gas Detection

Technical Specification

Part Number	Housing	Field of View	DC Sensitivity V/W	Time Constant ms	Active Area mm ²	TP Chip Resistance kΩ	Noise nV/√Hz	NEP nW/√Hz	D* cmV/Hz/W	Thermistor (25°C) kΩ
TPS2534	TO-39**	2x90°	42	35	1.2x1.2	50	29	0.7	1.8x10 ⁶	30
TPS4339	TO-39***	4x60°	75	25	0.7x0.7	75	35	0.5	1.5x10 ⁶	100

Test conditions: T = 25°C

Field of view: at 50% intensity points

* 500 K black body

** with 2 channels

*** with 4 channels

Above data are referenced without the bandpass filter.

Option for all types: individual bandpass filters for each channel

Line and Matrix Arrays

Technical Specification

Part Number	Housing	Number of Pixels	Field of View	Optics	Output Voltage V (80°C object, 20°C ambient)	Object Temperature	Noise mV/√Hz (.5-20Hz)
TPLM086L5.5	TO-39 on PCB	8 element line	41°x6°	f/1 optics, f=5.5 mm	0.95	-20-100°C or -20-200°C	0.4
TPAM166L3.9	TO-39 on PCB	4x4 matrix	41°x32°	f/1 optics, f=3.9 mm	0.95	-20-100°C	0.4

Test conditions: T = 25°C

Operating voltage: 5 V

Operating current: 1 mA

Zero signal offset: V_{DD}/2

Output resistance: 200 Ω

Power up time: 0.3 s

Sample frequency: 3 kHz

Max. operating temperature: -20-100°CMax.

storage temperature: -40-100°C

Temperature reference slope: 10 mV/K

Temperature reference offset: 0 mV

TPMI® Modules

Technical Specification

Part Number	Housing	Optics	Field of View
a2TPMI 334	TO-39	window opening 2.5 mm	60°
a2TPMI 334 L5.5	TO-39	integrated Si lens, 5.5 mm focal length	7° (D:S = 8:1)
a2TPMI 334 IRA	TO-39	internal mirror	15° (D:S = 4:1)

Technical Specification

Mfr Type	Package	Object Temperature Range	Analog Output	Supply Voltage	Optics	Field of View
A2TPMI334-L5.5 OAA180 / 6264	TO-39, 8.3 mm height (without pins)	-20-180 °C	0-5 V	5 V	Si-lens	7°
A2TPMI334-L5.5 OAA060 / 6266	TO-39, 8.3 mm height (without pins)	-20-60 °C	0-5 V	5 V	Si-lens	7°
A2TPMI334 OAA060 / 6259	TO-39, 4.2 mm height (without pins)	-20-60 °C	0-5 V	5 V	infrared window	60°

For further details please contact us.