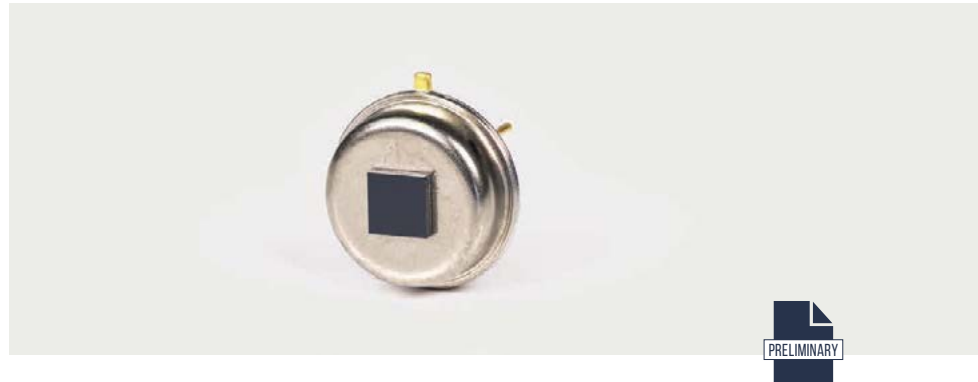


➤ PRODUCT DATA SHEET

MTS1 TEMP eco

Thermal IR detectors for temperature measurement



The thermo-electric IR detectors of the MTS eco series (Micro-Hybrid thermopile sensors) are developed for mass market applications.

The base of each thermopile detector is formed by the so-called thermocouple. Due to thermal diffusion currents of two different metals (Seebeck effect), it generates an electrical voltage – the measurement signal. These thermocouples, called thermopiles, achieve higher output voltage in series connection.

The sensitive component of Micro-Hybrid thermopile detectors is a MEMS-based thin-layer system on a silicon substrate.

FEATURES

- Good sensitivity
- Suitable for consumer applications
- Short time constant

APPLICATIONS

- **Consumer markets:** Temperature measurements and monitoring for home and building
- **Life science medicals:** Contactless temperature measurement of laboratory parameters

BENEFITS

- Cost effective components
- High volume availability

PRODUCT DATA SHEET > IR detectors > MTS1 TEMP eco | © Micro-Hybrid-Electronic GmbH | 2020-10

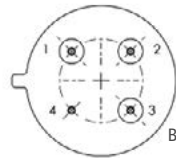
All rights reserved. All specifications – technical included – are subject to change without notice. No liability is accepted for any consequential losses, injury or damage resulting from the use of this document or from any omissions or errors herein.

 INFRARED COMPONENTS
AND SYSTEMS

Technical data

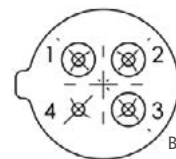
Technical parameter	TEMP eco T039	TEMP eco T046	Unit
Active area	0.7 x 0.7	0.7 x 0.7	mm ²
Aperture	∅ 2.55	∅ 2.55	mm
Time constant <small>(10-90 %)</small>	typ. 40	typ. 40	ms
DC sensitivity	typ. 45	typ. 45	V/W
Noise voltage	typ. 35	typ. 35	nV/Hz ^{1/2}
Noise equivalent power NEP	typ. 0.78	typ. 0.78	nW/Hz ^{1/2}
Specific detectivity D*	typ. 0.9*10 ⁸	typ. 0.9*10 ⁸	cmHz ^{1/2} /W
Resistance of thermopile	typ. 75 ± 25	typ. 75 ± 25	kΩ
Thermistor	NTC100k ± 5 %, B value 3964 ppm/K ± 1 %	NTC100k ± 5 %, B value 3964 ppm/K ± 1 %	Ω
Filling gas	N ₂	N ₂	
Filters	Si, cut on 5.5 μm	Si, cut on 5.5 μm	

Pin out



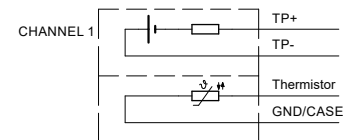
Bottom view T039

- Pin 1 – TP+
- Pin 2 – TP-
- Pin 3 – NTC
- Pin 4 – Case

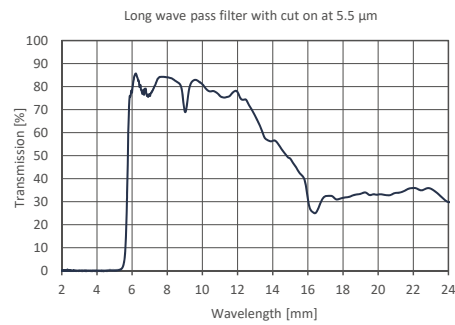
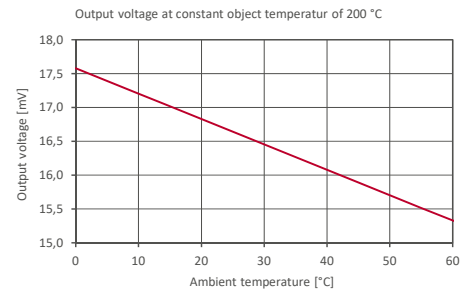
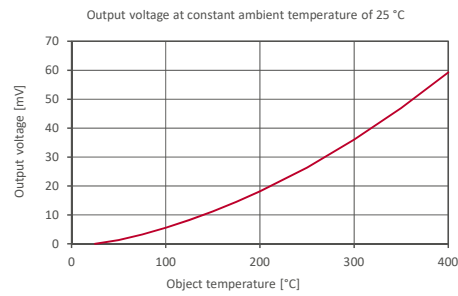


Bottom view T046

- Pin 1 – TP+
- Pin 2 – NTC
- Pin 3 – TP-
- Pin 4 – Case

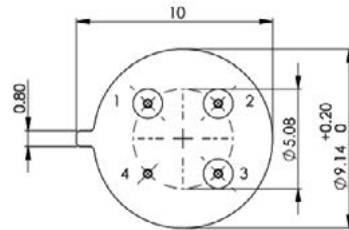


Typical operating characteristics of transmission filter B2

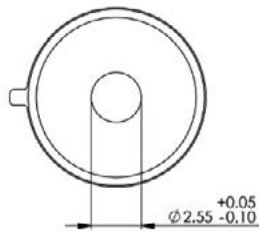


Mechanical drawings T039

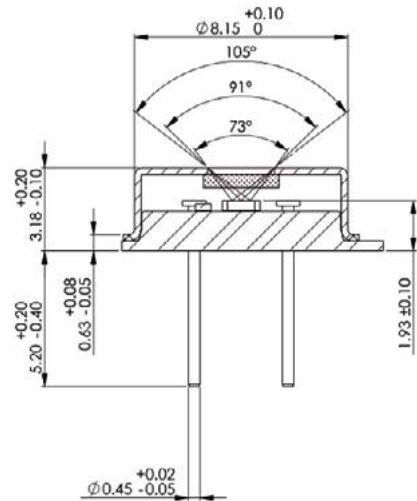
Bottom view



Top view

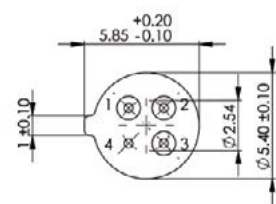


Side view

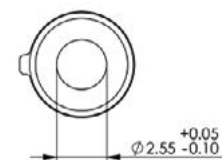


Mechanical drawings T046

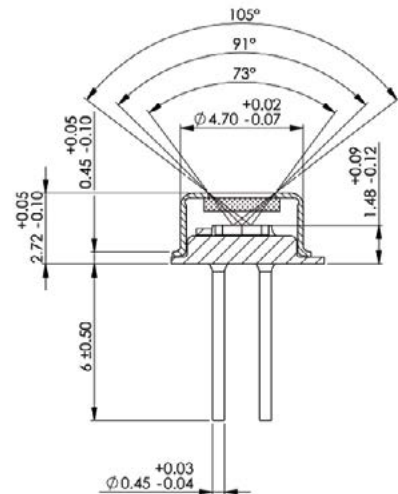
Bottom view



Top view



Side view



all geometrical dimensions in mm

Product overview

Article		Temp. min	Temp. max	Aperture	Channel	Package
TS1xECO-A-D2.55-3-1-B2	S	-20 °C	85 °C	2.55 mm	1	T039
TS1xECO-B-D2.55-3-1-B2	S	-20 °C	85 °C	2.55 mm	1	T046

S in stock

NOVA IR and **CMOS IR** are companies of Micro-Hybrid Electronic GmbH.