PCB-Mounted Thermal Detector



TD2XP

Description

The TD2XP features the TD2X, which is the smallest thermopile-based thermal detector offered by Thorlabs (4.0 mm^2 active sensing area), mounted on a PCB featuring through-contacts and ground layers and includes an integrated thermistor. The active sensing area measures optical power levels between 100 µW and 500 mW, possesses a nearly flat broadband spectral absorption ranging from the UV through the MIR, has negligible dependency on the angle of incidence, and a homogeneous response over the full sensing area. The copper solder pads on the PCB facilitate electrical connection to the voltmeter and the thermistor. Two mounting holes allow for easy integration with other components.

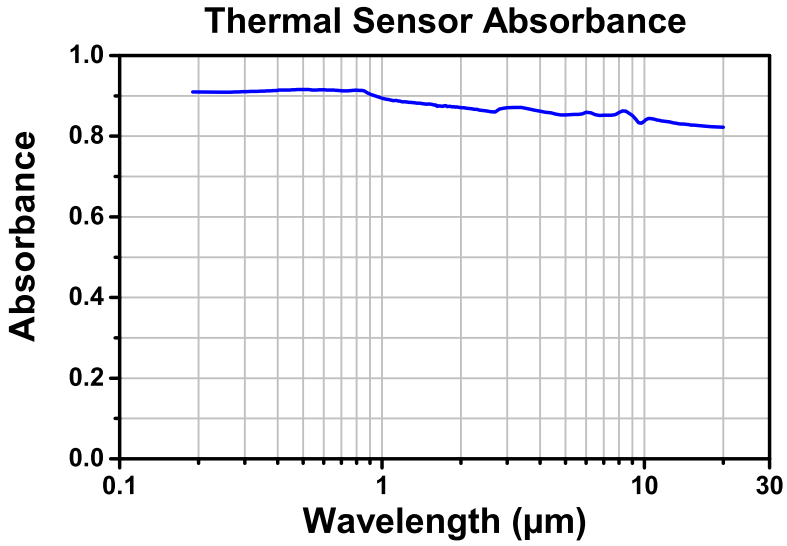
Please read the *Handling Instructions* document for information on mounting the thermal detector, making electrical connections, maintenance, and safety.

The *Handling Instructions* document can be downloaded at www.thorlabs.com/manuals.cfm.

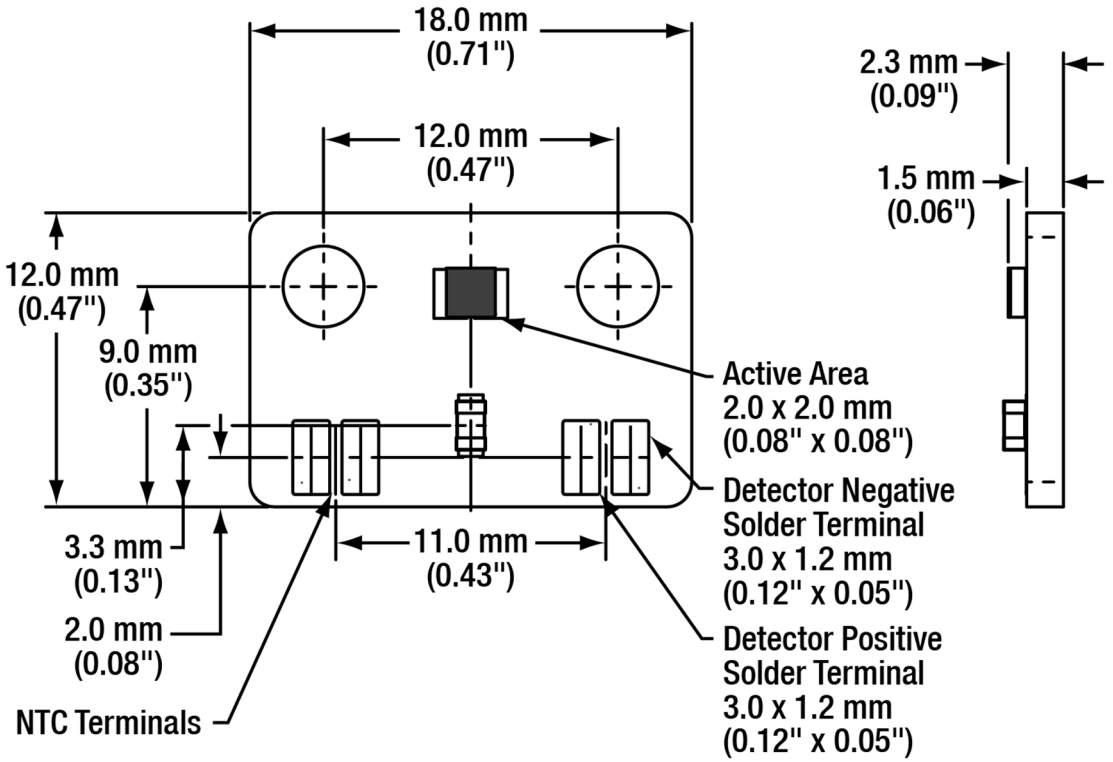
Specifications

TD2XP	
Detector Type	Thermopile
Wavelength Range	190 nm - 20 µm
Optical Power Working Range[a]	100 µW - 0.5 W
Max Average Power Density[b]	1.5 kW/cm^2
Max Pulse Energy Density	0.3 J/cm^2 (1 ns Pulse), 5 J/cm^2 (1 ms Pulse)
Typical Responsivity	>100 mV/W
Linearity with Optical Power	±0.2%
Rise Time[c]	1.5 s
Active Sensor Area	2.0 mm x 2.0 mm (0.08" x 0.08")
Active Area Uniformity	±1% (>1 mm Beam Diameter)
Temperature Sensor	NTC Thermistor, 10 kΩ
Detector Dimensions	18.0 mm x 11.0 mm x 1.6 mm (0.71" x 0.43" x 0.06")
Mounting	Two Ø3.3 mm (Ø0.13") Mounting Holes
Connection	Wire

a. Mounting on appropriate heat sink is required.
b. Damage Threshold
c. Typical Natural Response Time (0 - 95%)


Thermal Sensor Absorbance
Absorbance
1.0
0.8
0.6
0.4
0.2
0.0
0.1
1
10
30
Wavelength (µm)

Drawings


18.0 mm
(0.71")
12.0 mm
(0.47")
12.0 mm
(0.47")
9.0 mm
(0.35")
3.3 mm
(0.13")
2.0 mm
(0.08")
NTC Terminals
11.0 mm
(0.43")
Active Area
2.0 x 2.0 mm
(0.08" x 0.08")
Detector Negative
Solder Terminal
3.0 x 1.2 mm
(0.12" x 0.05")
Detector Positive
Solder Terminal
3.0 x 1.2 mm
(0.12" x 0.05")
2.3 mm
(0.09")
1.5 mm
(0.06")

