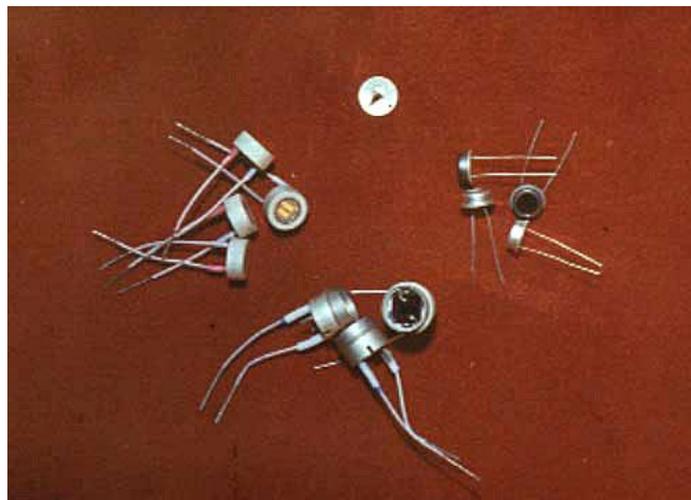


THIN FILM THERMOELECTRIC RADIATION RECEIVER

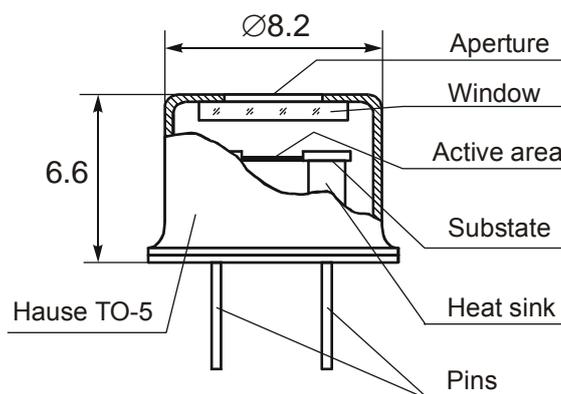


- Principle of operation radiation energy conversion into thermal one. Energy, that in its turn, is converted into an electric signal by thermoelectric microbatteries.

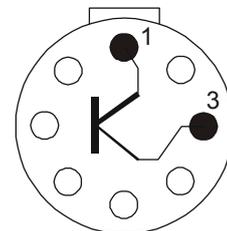
Appearance of thin film thermoelectric radiation receiver



- Schematic diagram of receiver and contacts arrangement is in the drawing.



TD -510



- The detector has an optical filter. On the customer's request the detector is provided with interferential or cutting filters for the required wave length range. The sensitive element is the film thermobattery made of specially optimized semiconductor materials.

- Advantages of the detector:
 - no power supply;
 - no optical signal modulation;
 - no cooling;
 - perfect for application in DC electrical circuits;
 - on the customer's request we can change the battery structure for the best adjustment with measuring equipment;
 - on the customer's request the detector can be mounted in a special case for the best adjustment with mirror or lens optics;
 - air-tight case of the detector is filled with argon, xenon, dry air;
 - not less than 90° vision angle;
 - 150 mW/cm² of incident energy maximum flow;
 - the detector can be mounted into a hybrid circuit case;
 - on the customer's request a temperature sensor is mounted into the detector case.
- Fields of the efficient application:
 - low-temperature contactless temperature meters (pyrometers);
 - long-wave IR spectrophotometers of 0.4-50 μm range;
 - contactless fire detectors and systems for a fire fight in rooms, transport means, etc.;
 - optical elements of machine vision;
 - industrial robots;
 - IR gas analyzers;
 - technological processes temperature detectors for movable heated objects –belts, details, wires, etc.

Typical characteristics

Parameter	Dimension	Measurement condition	Type of receiver
			TD-510
Active area	∅, mm	-	1.0
Sensitivity	V/W	500 K, DC	120
Resistance	Ohm	AC, 1000 Hz	65
NEP	10-10W Hz ^{-0.5}	500 K, DC, 1.0	2.7
D*	10 ⁸ cm·W Hz ^{0.5}	500 K, DC, 1.0	3.3
Time constant	ms	IR-LED, 0.63 E _{max}	40÷50

Window's material – CaF₂ (0.13 < λ < 12 μ).

Order and additional information: General P. O. box 86, Chernivtsi, 58002, Ukraine, e-mail: ite@inst.cv.ua; fax: (380-3722)-41917; tel: (380-3722)-41917; <http://ite.cv.ukrtel.net>.