

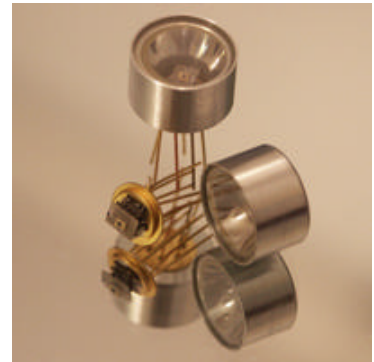
# PHOTO DIODES 2.4 $\mu\text{m}$

## Model PD24-05-TEC-PR 2.4 mm 0.5 mm

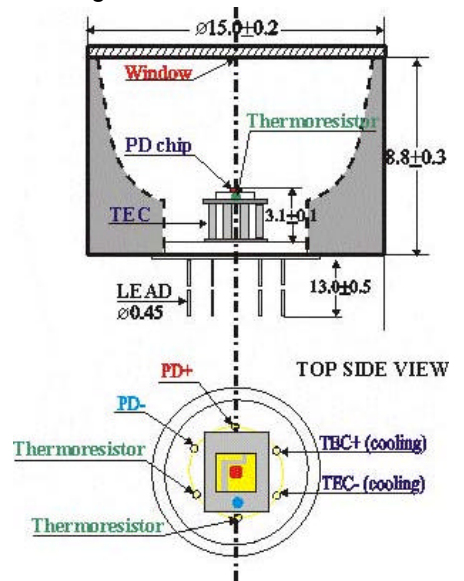
### One stage Thermoelectrically Cooled InGaAsSb photodiodes

Photodiodes **PD24-05-TEC-PR** are designed for detecting the radiation in the Middle Infrared spectral range from 800 to 2400 nm. Heterostructures with the InGaAsSb sensitive layer and the AlGaAsSb "window" are grown on GaSb substrates.

- Photodiodes **PD24-05-TEC-PR** are placed in standard 9 mm package TO-5. Thermocooler and thermoresistor are mounted inside package TO-5.
- Photodiodes **PD24-05-TEC-PR** have the photosensitive area with diameter of 500  $\mu\text{m}$ . Fast response makes possible their use for the detection of high frequency modulated laser or LED emission.
- Related products: **PD24-05** can be used in optical pair with our **LED16÷LED23** and **LD200÷LD230**. We offer the preamplifier model **AM-04** suitable for **PD24-05**



Package TO-5 with Parabolic Reflector



| Parameters                                                                                             | $t = -20^\circ\text{C}$                                | $t = +22^\circ\text{C}$ |
|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------|
| Cut-off wavelength, $\mu\text{m}$ (at 10%)                                                             | 2.32                                                   | 2.40                    |
| Responsivity, A/W ( $\lambda = 1.95 \div 2.1 \mu\text{m}$ )                                            | 0.9 – 1.1                                              |                         |
| Dark Current, $\mu\text{A}$ ( $V = -0.2\text{V}$ )<br>( $V = -0.5\text{V}$ )<br>( $V = -1.0\text{V}$ ) | 0.7-1.2                                                | 8-15                    |
|                                                                                                        | 0.9-2.0                                                | 10-20                   |
|                                                                                                        | 1.1-3.0                                                | 12-30                   |
| Impedance, kOhm ( $V = -10\text{mV}$ )                                                                 | 50-150                                                 | 5-12                    |
| Capacitance, pF ( $V = 0$ )                                                                            | 140-220                                                | 140-220                 |
| Rise and Fall Time, ns ( $V = 0, 50\text{ Ohm}$ )                                                      | 15-25                                                  |                         |
| Detectivity, $D^*$ , $\text{cm.Hz}^{1/2}/\text{W}$<br>( $\lambda_p, 1000, 1$ )                         | $(1.5 \div 3.0) 10^{11}$                               | $(4 \div 7) 10^{10}$    |
|                                                                                                        | 500                                                    |                         |
| Sensitive area diameter, $\mu\text{m}$                                                                 | 500                                                    |                         |
| Package                                                                                                | TO-5, thermocooler, thermistor and Parabolic Reflector |                         |

Main thermocooler parameters (without load)

| $I_{\text{max}}$<br>(Amps) | $Q_{\text{max}}$<br>(Watts) | $U_{\text{max}}$<br>(Volts) | $\Delta T_{\text{max}}$<br>$^\circ\text{C}$ |
|----------------------------|-----------------------------|-----------------------------|---------------------------------------------|
| 0.7                        | 0.4                         | 1.0                         | 67                                          |

