

9-elements (3×3) Photodiode Arrays with TE cooling

PD34BS 3×3

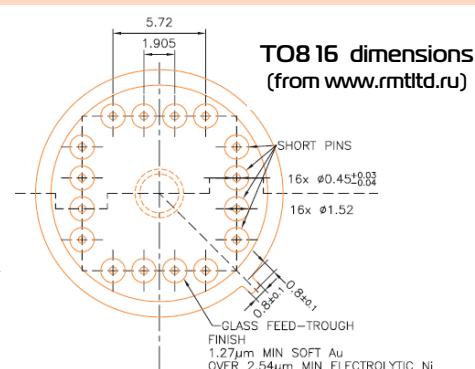
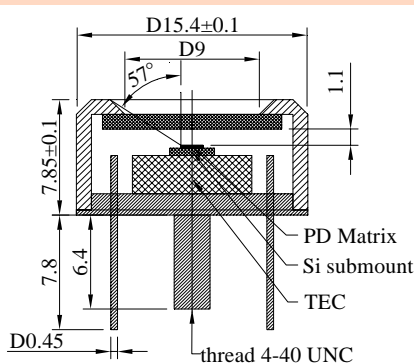
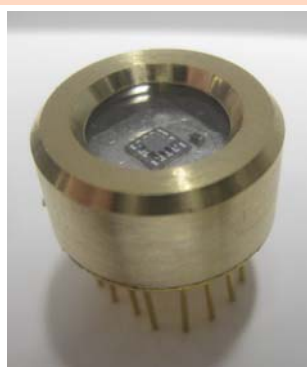
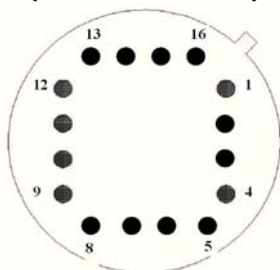
4-elements (2×2) Photodiode Arrays with TE cooling

PD34BS 2×2

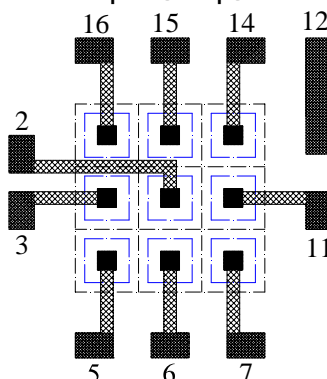
| | | | | |
|---------------------|------------------------|----------------------------------|---------------------------|--------|
| Peak wavelength | λ_{\max} | μm | 3.35 ± 0.05 | @22 °C |
| Current sensitivity | S_i | A/W | ≥ 2.5 ¹ | |
| Shunt Resistance | R_o | Ohm | ≥ 500 | |
| Detectivity | $D^*_{\lambda_{\max}}$ | $\text{cmHz}^{1/2}\text{W}^{-1}$ | $\geq 1.4 \times 10^{10}$ | |
| Switching time | τ | ns | ≤ 20 ² | |

| Code | Sensitive area, mm ² | Weight, g | Optical components | Field of view, deg. | Detectivity deviation in lot, % | Operation conditions, °C |
|------------|---------------------------------|-----------|-------------------------------|---------------------|---------------------------------|--------------------------|
| PD34BS 3×3 | 9×(0.32×0.32) | ~6.5 | output sapphire window D=9 mm | ~110 | ±12 | -60 ÷ +85 |
| PD34BS 2×2 | 4×(0.32×0.32) | | | | | |

Product view

TO8 16 dimensions
(from www.rmttd.ru)TO8 16 pin numeration
(view from bottom side)

Pixel – pin correspondence



Pin assignment

| | |
|----------------|-------------------|
| 1 TEC negative | 9 thermoresistor |
| 2 PD + | 10 thermoresistor |
| 3 PD + | 11 PD + |
| 4 TEC positive | 12 PD negative |
| 5 PD + | 13 free |
| 6 PD + | 14 PD + |
| 7 PD + | 15 PD + |
| 8 free | 16 PD + |

Features

- Original growth of narrow gap A3B5 semiconductor alloys onto n⁺-InAs substrate;
- Deep mesa chip and backside illuminated design;
- Individually addressable PD elements with common cathode
- Ambient and high temperature operation;
- No bias required;
- Operation from DC to VHF;
- Highest long term stability;
- High value of shunt resistance;

Other packages are available upon request. Data are valid for PD thermostabilized at 22°C. Heatsink is essential for TEC operation!

Notes

- ¹ – according to p-n junction area calculation
² – according to estimation

Product specifications are subject to change without prior notice due to improvements or other reasons. Updated 20.03.14

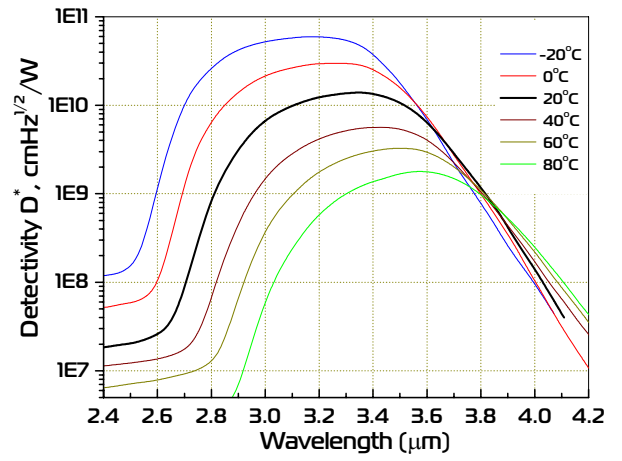
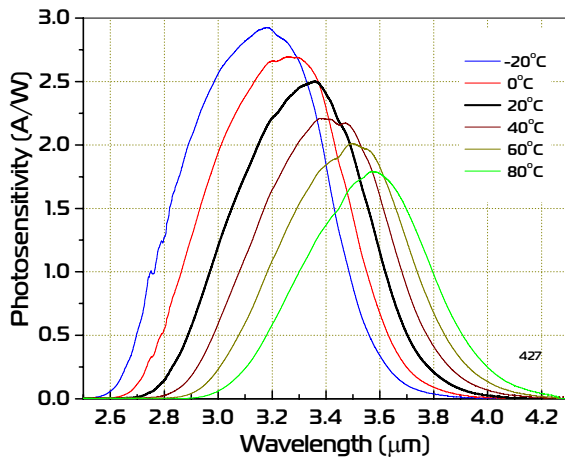
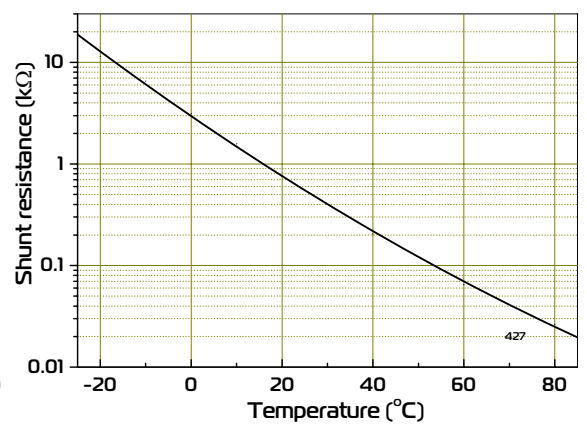
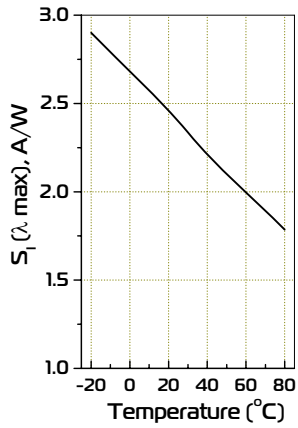
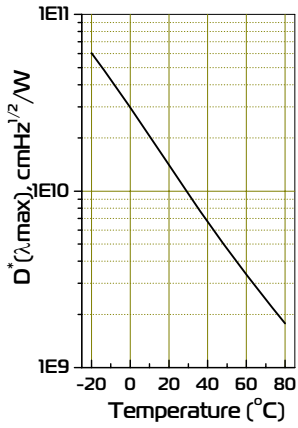


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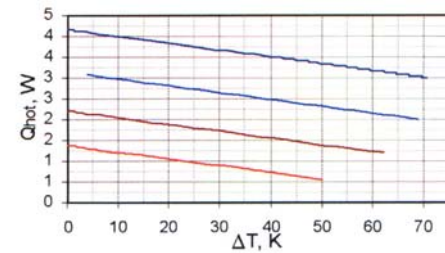
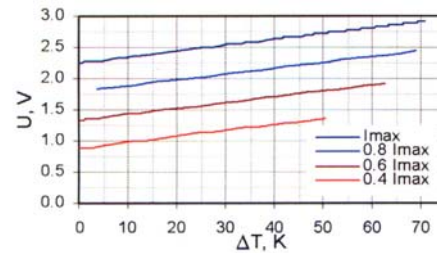
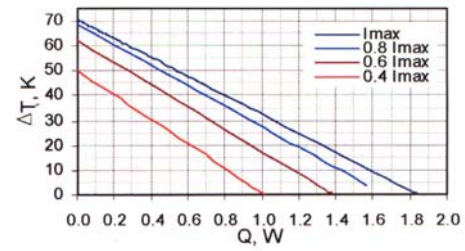
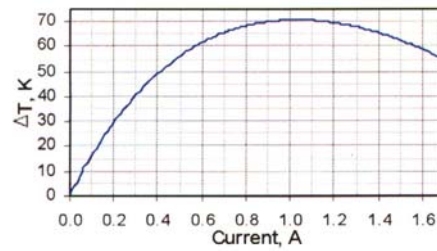
Politechnicheskaya 26,
St.Petersburg, 194021, RUSSIA

<http://www.ioffeled.com>; e-mail: Mremenny@mail.ioffe.ru
<http://www.mirdog.spb.ru>; e-mail: bmat@iropt3.ioffe.ru

Spectral response

Detectivity, current sensitivity at λ_{max} and shunt resistance vs. temperature

| Mounted TEC | H, mm | ΔT_{max} , K | Q_{max} , W | I_{max} , A | U_{max} , V | R_{θ} , K/W |
|----------------|-------|----------------------|---------------|---------------|---------------|--------------------|
| 1MC06-024/1-15 | 2.6 | 70 | 1.86 | 1.0 | 2.78 | 1.07 |



Data for $T_{hot}=300$ K, from www.tec-microsystems.com; www.rmtitd.ru

Type TB04-103

| T, °C | R, kΩ | T, °C | R, kΩ |
|-------|--------|-------|-------|
| -60 | 1134.5 | 15 | 12.44 |
| -55 | 762.4 | 20 | 10.00 |
| -50 | 521.6 | 25 | 8.09 |
| -45 | 362.8 | 25 | 8.09 |
| -40 | 256.3 | 30 | 6.60 |
| -35 | 183.8 | 35 | 5.41 |
| -30 | 133.6 | 40 | 4.47 |
| -25 | 98.3 | 45 | 3.71 |
| -20 | 73.3 | 50 | 3.10 |
| -15 | 55.2 | 55 | 2.61 |
| -10 | 42.1 | 60 | 2.20 |
| -5 | 32.4 | 65 | 1.87 |
| 0 | 25.2 | 70 | 1.59 |
| 5 | 19.7 | 75 | 1.37 |
| 10 | 15.6 | 80 | 1.18 |

