

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

PD42BS 3×3

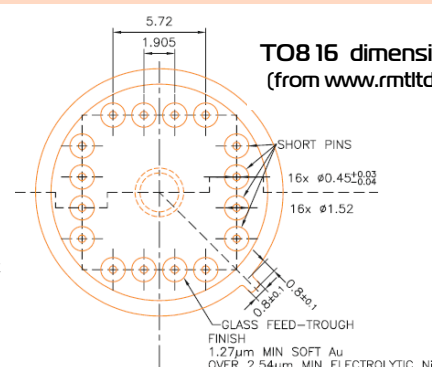
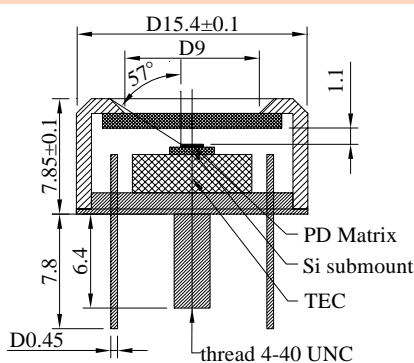
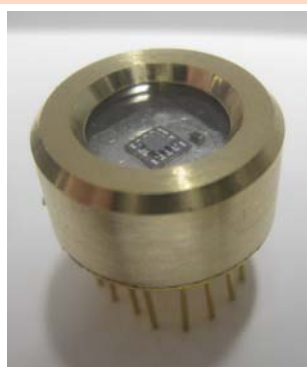
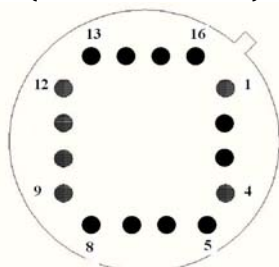
4-elements (2×2) Photodiode Arrays with TE cooling

PD42BS 2×2

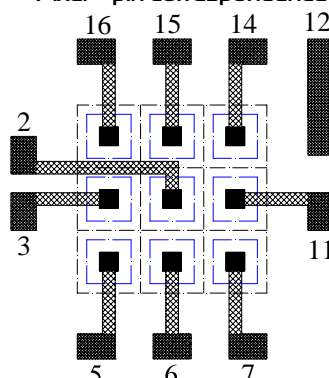
Peak wavelength	λ_{\max}	μm	3.9 ± 0.1	@22 °C
Current sensitivity	S_i	A/W	≥ 2.5 ¹	
Shunt Resistance	R_o	Ohm	20 ± 5	
Detectivity	$D^*_{\lambda_{\max}}$	$\text{cmHz}^{1/2}\text{W}^{-1}$	$\geq 2.4\times 10^9$	
Switching time	τ	ns	≤ 20 ²	

Code	Sensitive area, mm ²	Weight, g	Optical components	Field of view, deg.	Detectivity deviation in lot, %	Operation conditions, °C
PD42BS 3×3	9×(0.32×0.32)	~6.5	output sapphire window D=9 mm	~110	±12	-60÷+85
PD42BS 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 calculation² – according to estimation

Product specifications are subject to change without prior notice due to improvements or other reasons. Updated 03.05.14

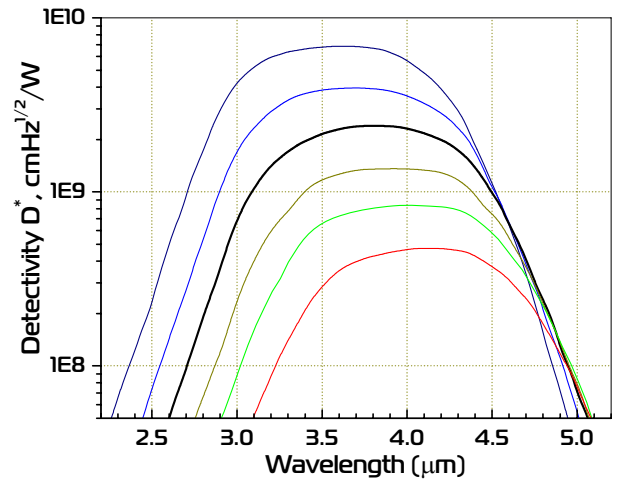
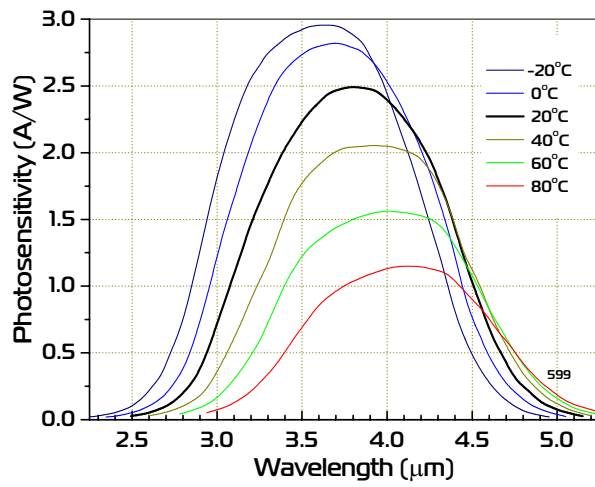
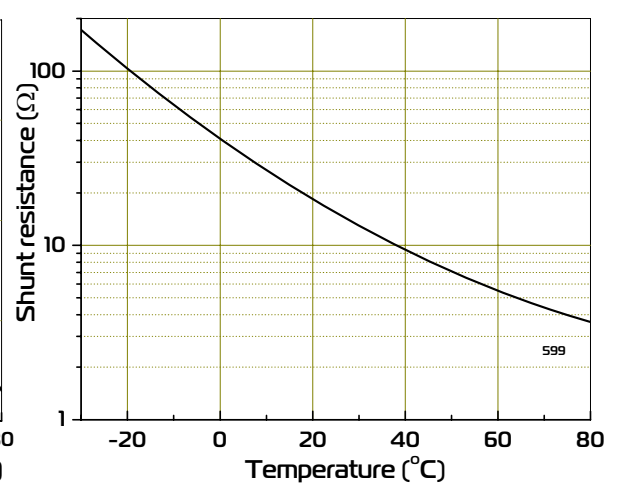
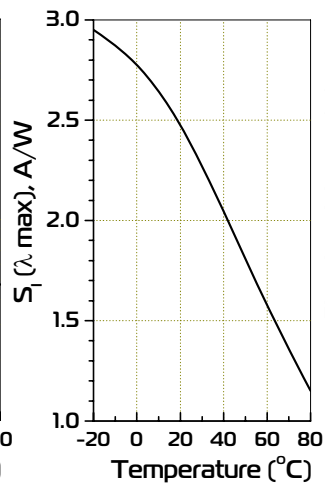
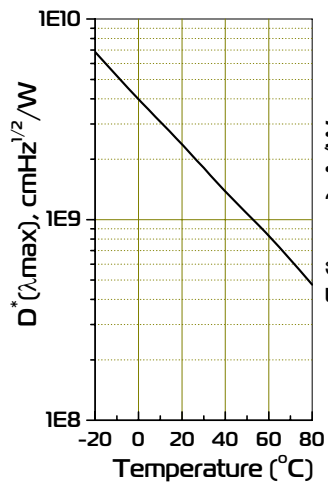


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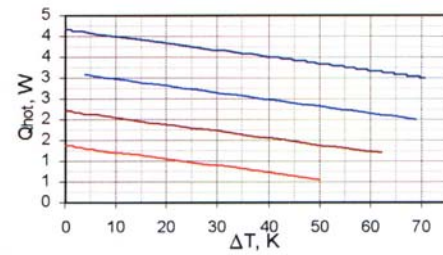
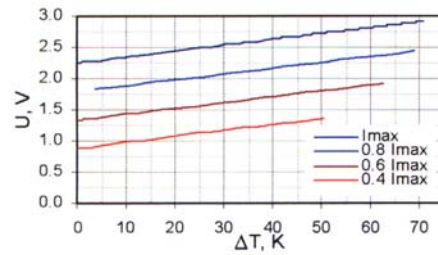
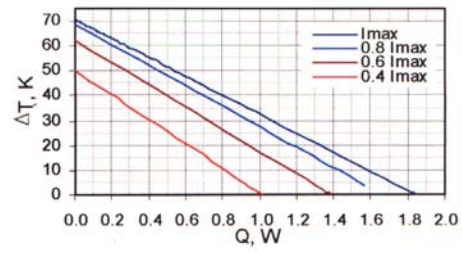
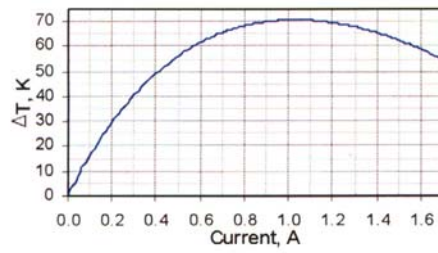
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Spectral response

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.rmtltd.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

