

Uncooled 3.3 μm FSI Photodiode

PD33FS

TE cooled 3.3 μm FSI Photodiode

PD33FS TO39TEC

Uncooled 3.3 μm FSI Photodiode with microimmersion lens

PD33FSmIL

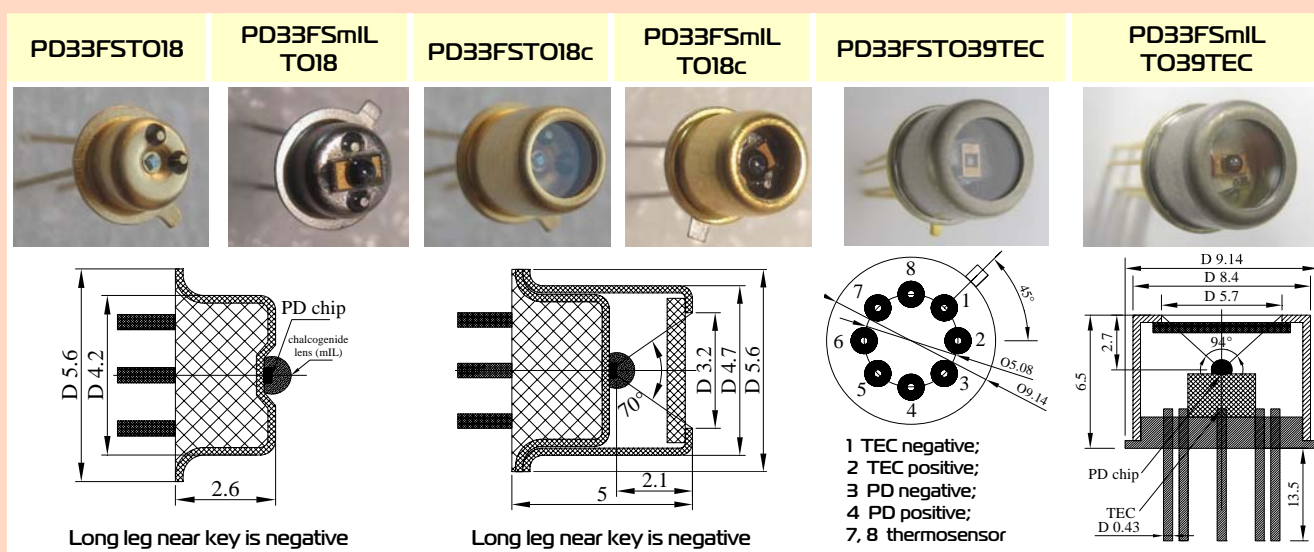
TE cooled 3.3 μm FSI Photodiode with microimmersion lens

PD33FSmIL TO39TEC

Peak wavelength	λ_{max}	μm	3.30 ± 0.05	@22 °C
Immersion lens			No	mIL
Current sensitivity	S_i	A/W	≥ 1 ^[1]	≥ 1
Shunt Resistance	R_0	Ohm	≥ 500	≥ 500
Detectivity	$D^*_{\lambda_{\text{max}}}$	$\text{cmHz}^{1/2}\text{W}^{-1}$	$\geq 0.6 \times 10^{10}$	$\geq 1.5 \times 10^{10}$
Voltage sensitivity	S_U	V/W	≥ 500	≥ 500
Switching time	τ	ns	≤ 20	≤ 20

Code	Sensitive area, mm	Weight, g	Optical components	Field of view, deg.	Optical axis deviation, deg.	Detectivity deviation in lot, %	Operation conditions, °C
PD33FSTO18		~0.2	-	~140			
PD33FSTO18c	0.35×0.35	~0.3	sapphire window	~65	-	±25	-60 ÷ +85
PD33FSTO39TEC		~1.2	sapphire window	~90			
PD33FSmILTO18		~0.2	-	~60			
PD33FSmILTO18c	~D=1	~0.3	sapphire window, chalcogenide lens	~60	≤5	±25	-60 ÷ +60
PD33FSmILTO39TEC		~1.2	sapphire window, chalcogenide lens	~60			

Product view



Features

- Original growth of narrow gap A3B5 semiconductor alloys;
- Front side illuminated design of PDs;
- "Wide gap" window
- Optical coupling through the use of chalcogenide glass lenses (photodiode with microimmersion lens)
- Ambient and high temperature operation;
- No bias required;
- Operation from DC to VHF;
- Highest long term stability;
- High value of shunt resistance

Photodiode could be equipped with preamplifier that is designed for conversion of PD photocurrent into a convenient output voltage and is adjusted for the particular PD taking into account the R_0 value and frequency range. Other packages are available upon request. Data are valid for PD thermostabilized at 22°C. Heatsink is essential for TEC operation!

Notes

¹ - process 400

Product specifications are subject to change without prior notice due to improvements or other reasons. Updated 21.03.13



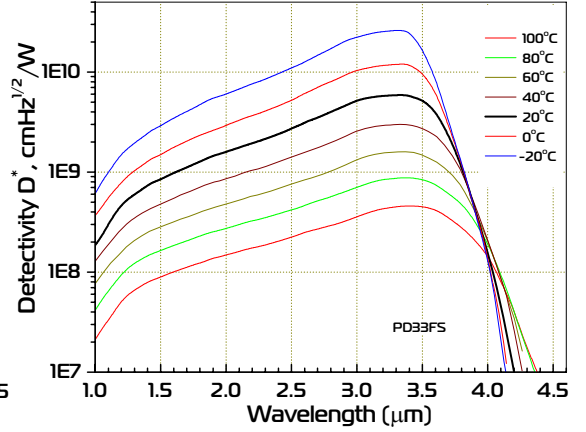
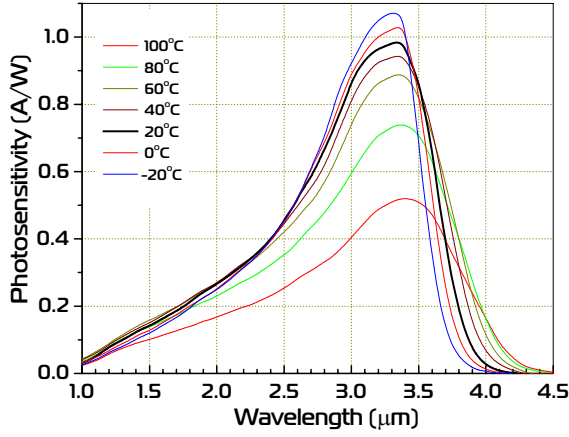
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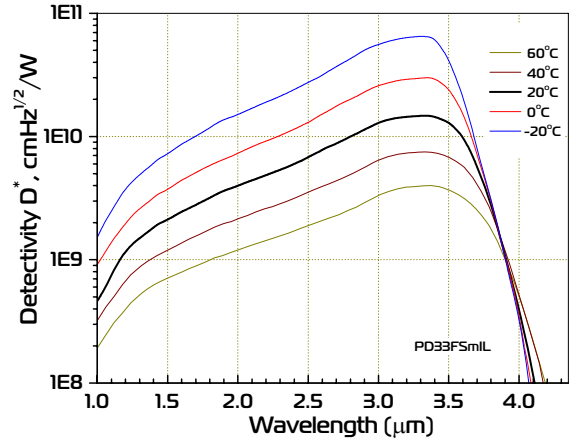
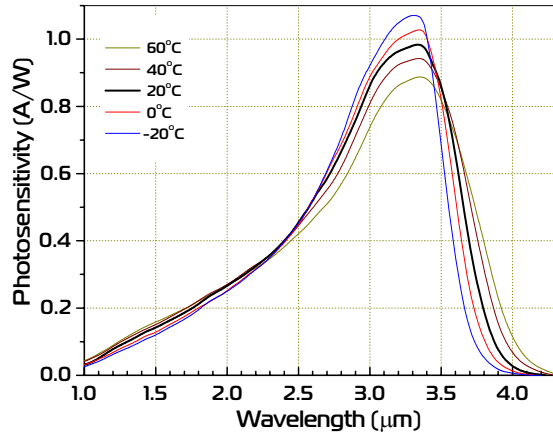
<http://www.ioffeled.com>; e-mail: Mremenny@mail.ioffe.ru
<http://www.mirdog.spb.ru>; e-mail: bmat@iropt3.ioffe.ru

Spectral response

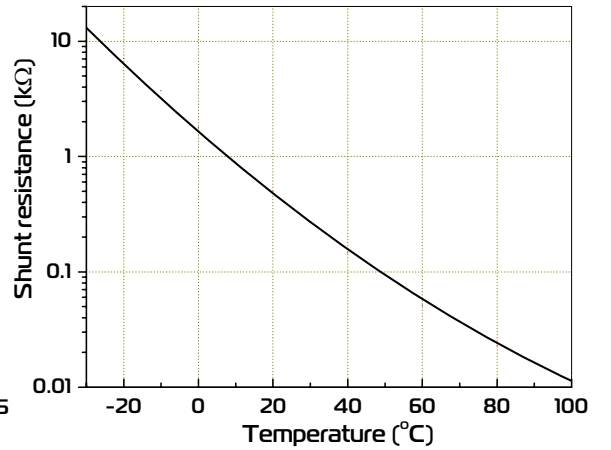
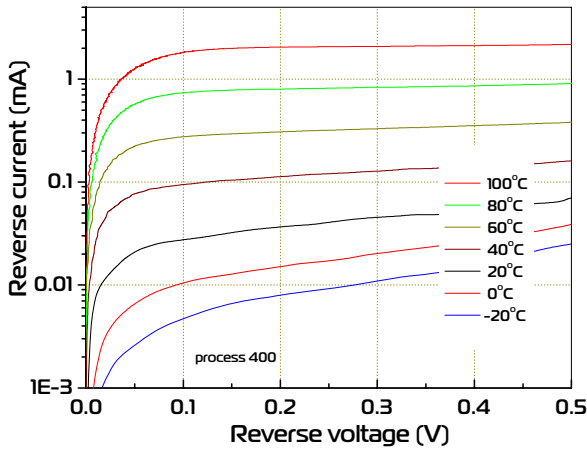
PD33FS



PD33FSmIL



Dark current vs. reverse voltage, shunt resistance vs. temperature



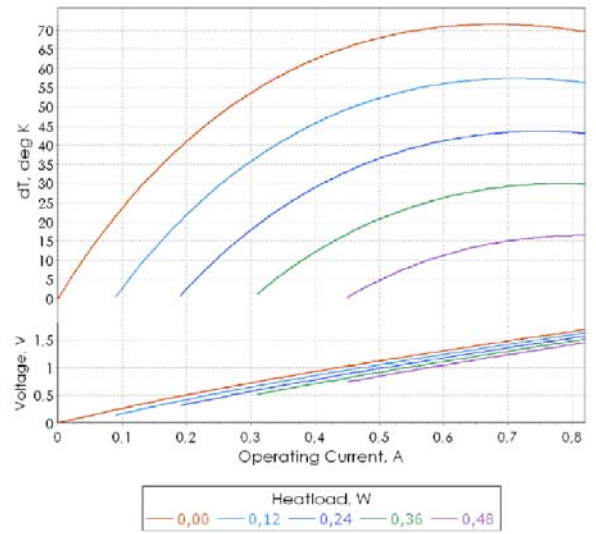
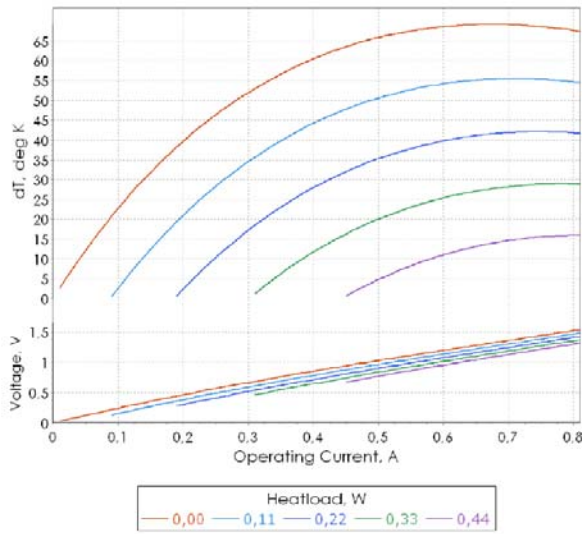
Mounted TEC

@ 27 °C, Vacuum

@ 50 °C, N2

1MD04-011/10

ΔT_{max} , K	Q_{max} , W	I_{max} , A	U_{max} , V	ΔT_{max} , K	Q_{max} , W	I_{max} , A	U_{max} , V
69	0.54	0.7	1.3	72	0.6	0.7	1.4



Data 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

