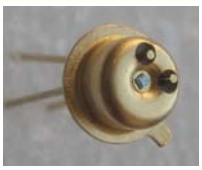
Uncooled 2.7 μm FSI Photodiode — PD27FS
TE cooled 2.7 μm FSI Photodiode — PD27FS TO39TEC
Uncooled 2.7 μm FSI Photodiode with microimmersion lens — PD27FSmIL
TE cooled 2.7 μm FSI Photodiode with microimmersion lens — PD27FSmIL TO39TEC

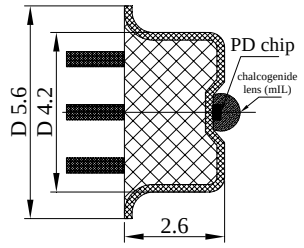
Peak wavelength	λ_{max}	μm	2.75±0.05	@22 °C
Immersion lens			No	mIL
Current sensitivity	S_I	A/W	≥0.6 [1]	≥0.6
Shunt Resistance	R_0	Ohm	≥800	≥800
Detectivity	$D^*_{\lambda max}$	$cmHz^{1/2}W^{-1}$	$\geq 0.5\times10^{10}$	$\geq 1.0\times10^{10}$
Voltage sensitivity	S_U	V/W	≥500	≥500
Switching time	τ	ns	≤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
PD27FSTO18	0.35×0.35	~0.2	-	~140	-	±25	-60÷+85
PD27FSTO18c		~0.3	sapphire window	~65			
PD27FSTO39TEC		~1.2	sapphire window	~90			
PD27FSmILTO18	~D=1	~0.2	-	~60	≤5	±25	-60÷+60
PD27FSmILTO18c		~0.3	sapphire window, chalcogenide lens	~60			
PD27FSmILTO39TEC		~1.2	sapphire window, chalcogenide lens	~60			

Product view

PD27FSTO18

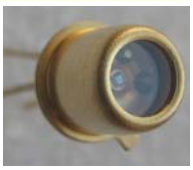


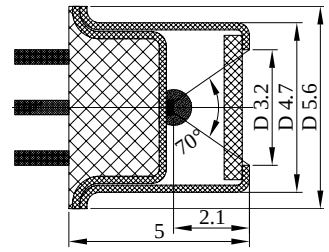


Long leg near key is negative

PD27FSmIL TO18

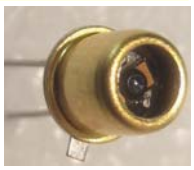
PD27FSTO18c



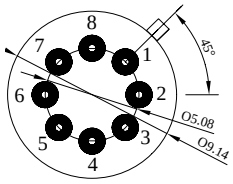


Long leg near key is negative

PD27FSmIL TO18c

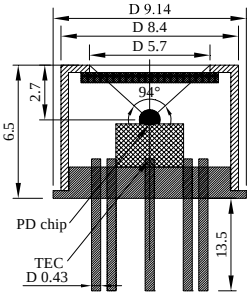


PD27FSTO39TEC



1 TEC negative;
2 TEC positive;
3 PD negative;
4 PD positive;
7, 8 thermosensor

PD27FSmIL TO39TEC



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 Ro 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 285

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

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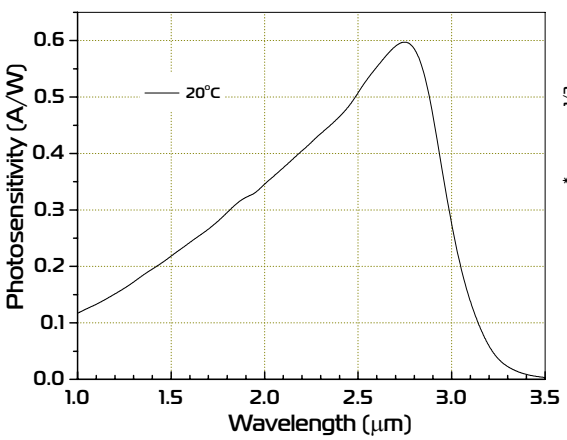
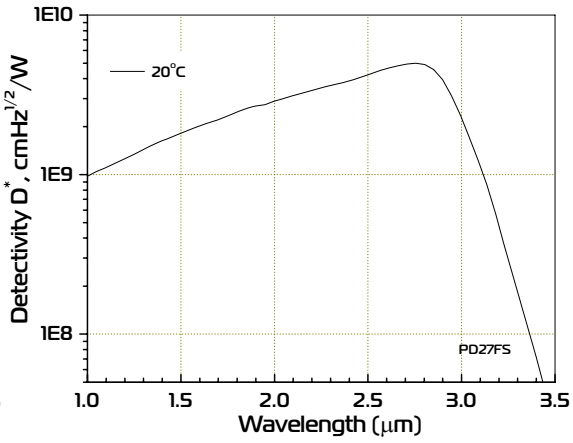
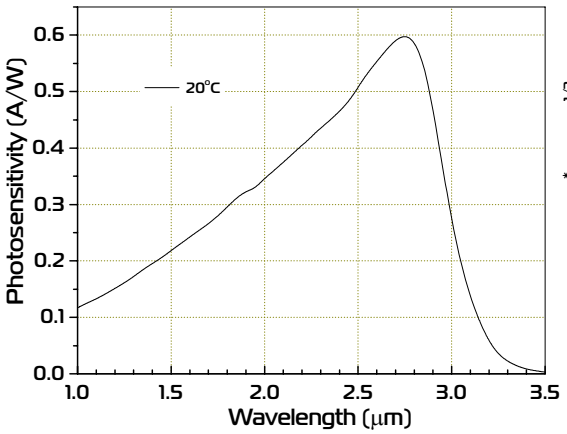
Spectral response

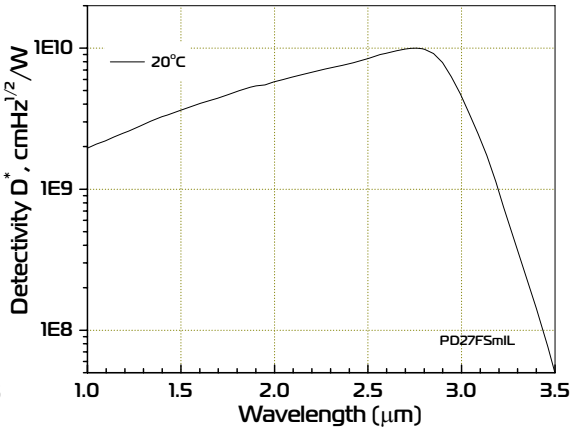
PD27FS





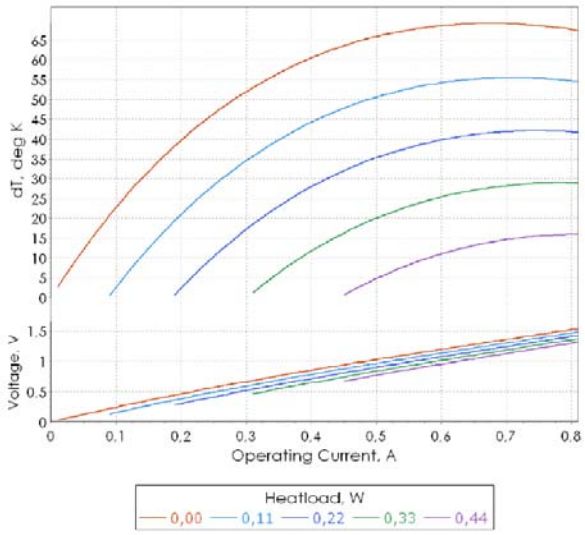
PD27FSmIL

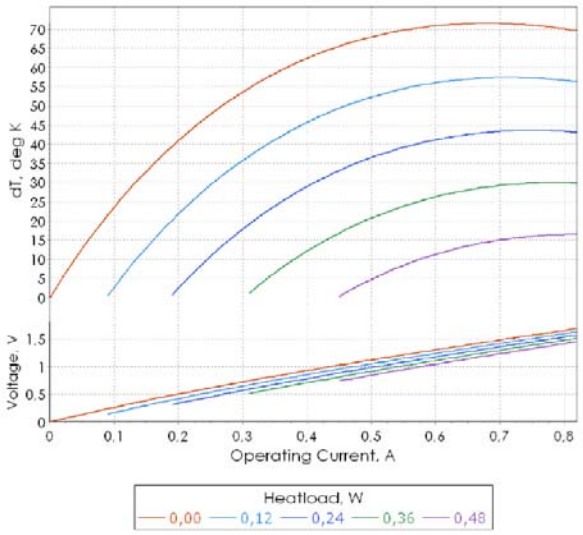




Thermoelectric cooling module datasheet

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



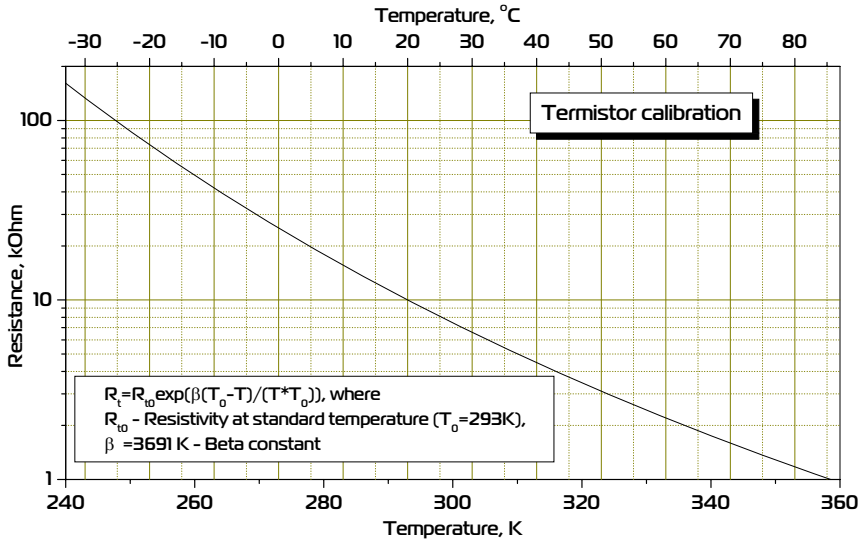


Data from www.tec-microsystems.com; www.rmtltd.ru

Thermistor specification

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



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