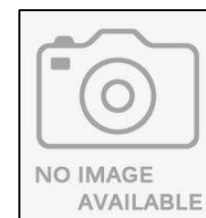




OTIR1017-3MD

- InGaAs PIN photodiode bare chip die
- 300 μm active area \varnothing
- 800 – 1700 nm spectral range
- High linearity
- Low voltage operation



Description

OTIR1017-3MD is a 500x500 μm InGaAs PIN photodiode **bare chip die** with a large active area diameter of **300 μm** , offering high linearity, low dark current and excellent responsivity from 1000 to 1700 nm. **OTIR1017-3MD** is widely used for infrared instrumentation, laser power measurement, and NIR sensing.

Maximum Rating ($T_{\text{CASE}} = 25^{\circ}\text{C}$)

Parameter	Symbol	Values		Unit
		Min.	Max.	
Forward Current	I_F		10	mA
Reverse Current	I_R		10	mA
Reverse Breakdown Voltage ($I_{R=10\mu\text{A}}$)	V_{RB}	50		V
Operating Temperature	T_{OPR}	- 40	+ 65	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	- 40	+ 85	$^{\circ}\text{C}$
Soldering Temperature (max. 5s)	T_{SOL}		260	$^{\circ}\text{C}$



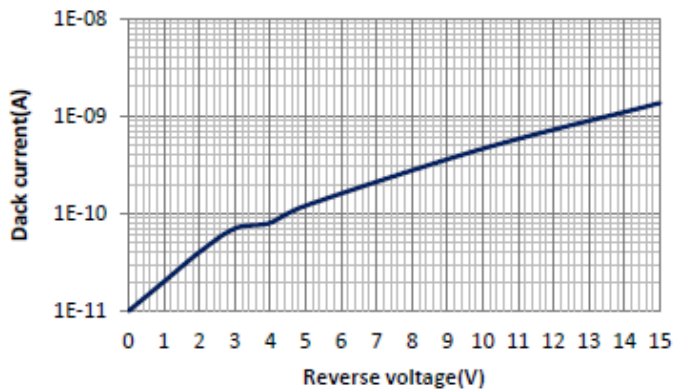
Electro-Optical Characteristics ($T_{\text{CASE}} = 25^{\circ}\text{C}$)

Parameter	Symbol	Condition	min.	typ.	max.	Unit
Spectral Range	λ		800		1700	nm
Peak Responsivity	λ_P			1680		nm
Photo Sensivity	S_R	1310 nm	0.90	0.95		A/W
		1550 nm	0.95	1.10		
Dark Current	I_D	$V_R=0\text{ V}$		100		pA
		$V_R=5\text{ V}$		500		
Saturation Power	L	$V_R=0\text{ V}, \lambda=1550\text{ nm}$	3	5		mW
		$V_R=2\text{ V}, \lambda=1550\text{ nm}$	6	8.80		
		$V_R=5\text{ V}, \lambda=1550\text{ nm}$	10	15.2		
Junction Capacitance	C_J	$V_R=0\text{ V}, f=1\text{ Mhz}$		13.2		pF
		$V_R=5\text{ V}, f=1\text{ Mhz}$		7.29		
Rise Time	t_R	$V_R=5\text{ V}, \lambda=1310\text{ nm}, R_L=500\ \Omega$		0.7	1.0	ns

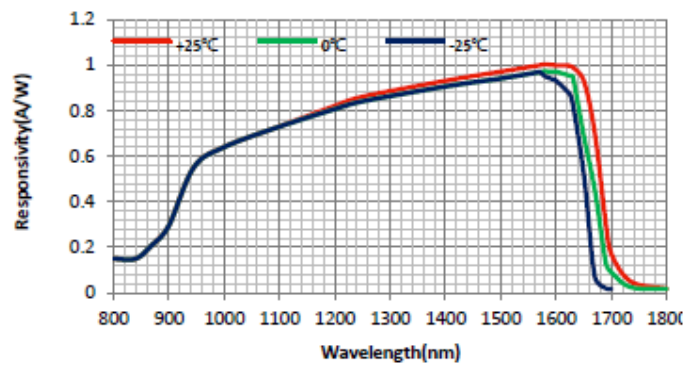


Performance Characteristics

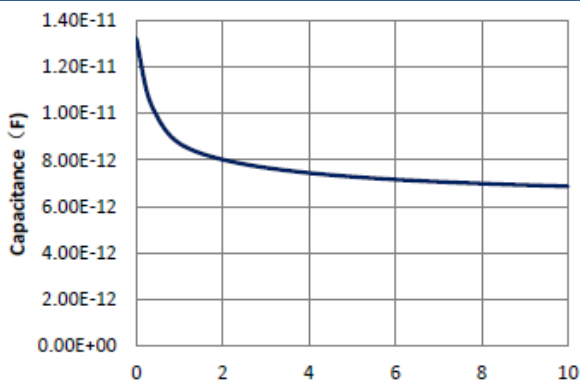
Dark Current vs. Reverse Voltage



Responsivity vs Wavelength

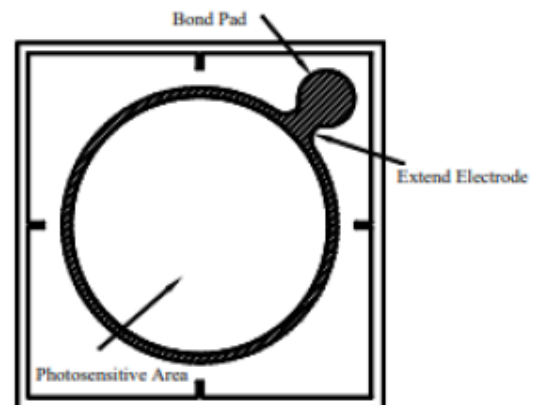


Capacitance vs Voltage



Outline & Material

Part	Outline
Die Size	500 x 500 μm
Die Thickness	175 \pm 10 μm
Bond Pad Diameter	75 μm
Active Area Diameter	300 μm
Extend Electrode Length	30 μm
P metal	Au
N metal	Au



P electrode on top