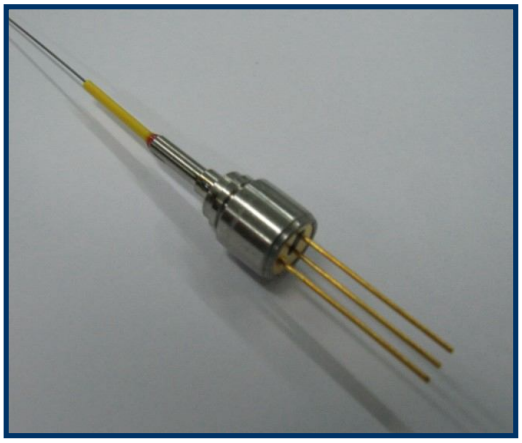
DATA SHEET

Low Noise InGaAs PIN PD Module for Optical Power Monitor

XL P/N ***XPD0250C-002-MNCN***

FEATURES

- High responsivity
- Low dark current under 0.5 nA
- Low back reflection
- Bandwidth up to 2.6 GHz
- Large dynamic range & High saturation power
- Low cost coaxial type package



APPLICATIONS

- Monitors for optical amplifiers
- Wavelength monitors for DWDM or CWDM

ELECTRICAL CHARACTERISTICS (T_C = 25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Photodiode bias voltage	V_{PD}	-	1.0	-	5.0	V
Dark current	I_D	V_{PD} = 2.5 V, 25℃ V_{PD} = 2.5 V, 75℃		0.05	0.5 2	nA
3dB bandwidth (small signal)	F_{3dB}	Pin=-10dBm	2.5			GHz
Total capacitance	C_{PD}	f = 1MHz, V_{PD} = 5.0 V case not grounded			0.7	pF
Responsivity	R	λ = 1550nm λ = 980nm	0.85 0.53			A/W

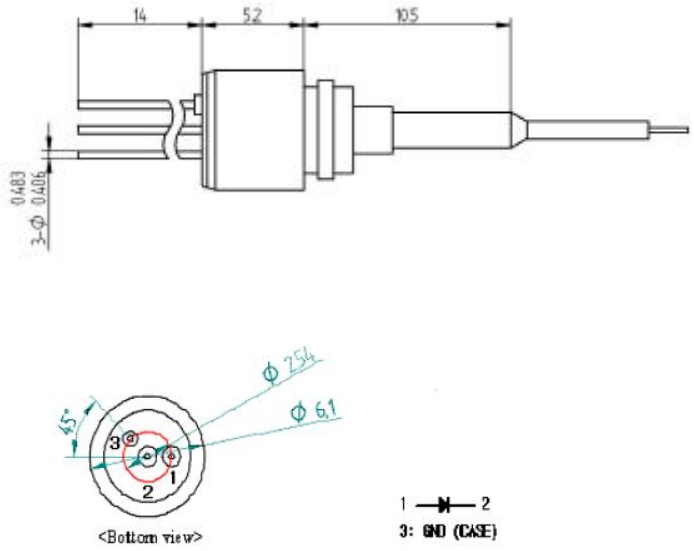
OPTICAL CHARACTERISTICS (T_C = 25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Optical wavelength Range	λ	-	1100	-	1600	nm
Linear optical power range	P_{in}	λ = 1550nm, ΔR<5% , V_{PD} = 2.5 V	-40		5	dBm
Polarization dependence on Responsivity	PDR	λ = 1550nm, Pin=-3dBm V_{PD} = 2.5 V			0.1	dB
Optical return loss	RL	λ = 1550nm	30			dB

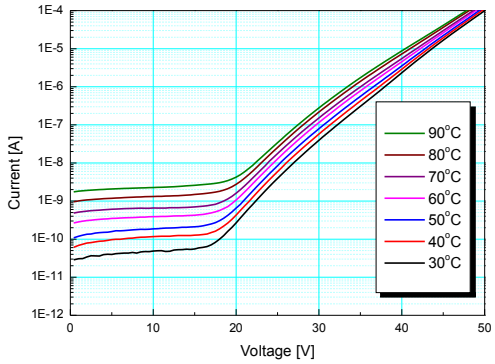
ABSOLUTE MAXIMUM RATINGS (T_C = 25℃)

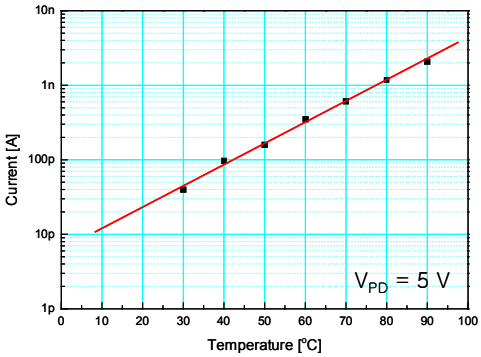
Parameter	Symbol	Rating	Unit
Photodiode bias voltage	V_{PD}	20	V
Breakdown voltage (I_R = 100 μA)	V_{BR}	30	V
Forward current(under forward bias)	I_F	2	mA
Reverse current(under reverse bias)	I_R	10	mA
Operating case temperature range	T_C	-20 to +75	℃
Storage temperature range	T_{STG}	-40 to +85	℃
Soldering temperature (within 10 sec.)	T_{sold}	260	℃

MECHANICAL DIMENSIONS (unit : mm)

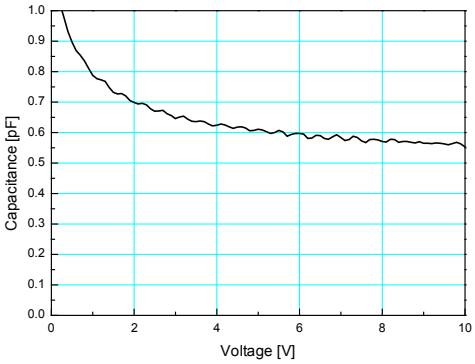


DARK CURRENT DEPENDENCE ON TEMPERATURE

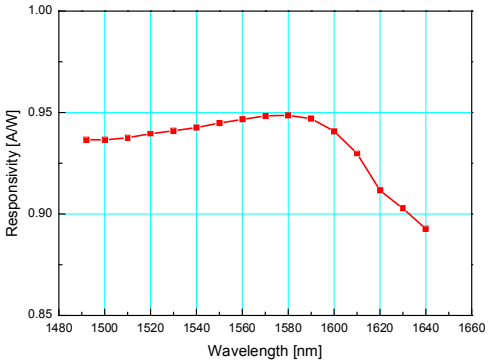




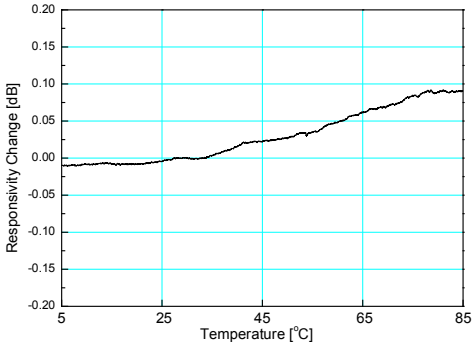
C-V CHARACTERISTICS



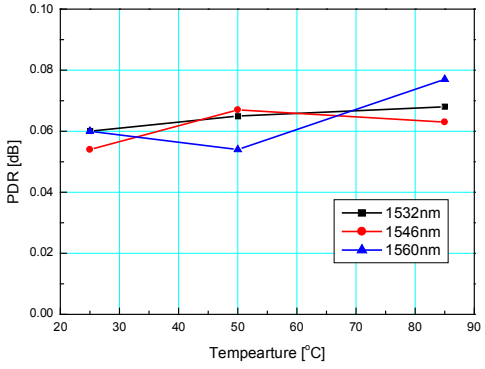
SPECTRAL RESPONSE



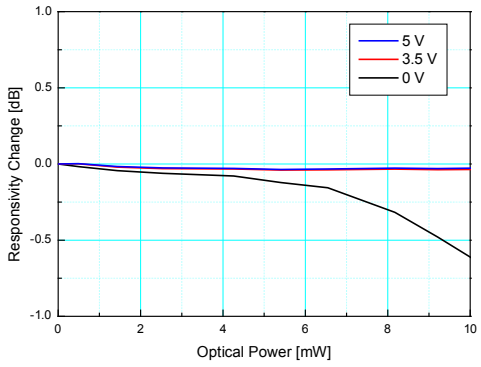
RESPONSIVITY VS. TEMPERATURE



PDR VS. WAVELENGTH, TEMPERATURE



OPTICAL POWER LINEARITY



PRECAUTIONS FOR USE

ESD protection is imperative. Use of ground straps, anti static mats, and other standard ESD protective equipment is recommended when handling or testing an InGaAs PIN/APD or any other junction photodiode.

Soldering temperature of the leads should not exceed 260℃ for more than 10 seconds.

Fiber pigtails should be handled with less than 10 N pull and with a bending radius greater than 1 inch.

ORDERING INFORMATION

Model name				Option		
PD type	Bandwidth (Hz)	Package Type	Code	Fiber	Connector type	Flange
XPD: PIN PD	0250: 2.5G	C:Coaxial type	002	M : MM-S105/125-15A Specialty Multimode Fiber 2 meter	NC: No connector	N: No flange

ex) XPD0250C-002-MNCN

Low noise TO coaxial type InGaAs PIN PD module for power monitoring application with MM-S105/125-15A Specialty Multimode Fiber, no connector, no flange

REVISION HISTORY

Date	Revision	Description
January 2003	001	Initial release
June 2004	002	Dark current, capacitance changed
January 2007	003	Update
March 2014	A	Add Nufern PN, Fiber PN and change revision no.

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