

### FEATURES

- SURFACE MOUNTABLE BY I.R. REFLOW SOLDER
- SMALL SIZE FLAT CERAMIC PACKAGE:  
7.6 x 12.7 x 3 mm
- HIGH QUANTUM EFFICIENCY:  
 $\eta = 0.9$  A/W
- SMALL DARK CURRENT:  
 $I_D = 0.1$  nA
- WIDE OPERATING TEMPERATURE RANGE:  
-40 to +85 °C
- DETACHABLE PIGTAIL INTERFACE

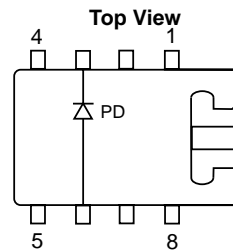
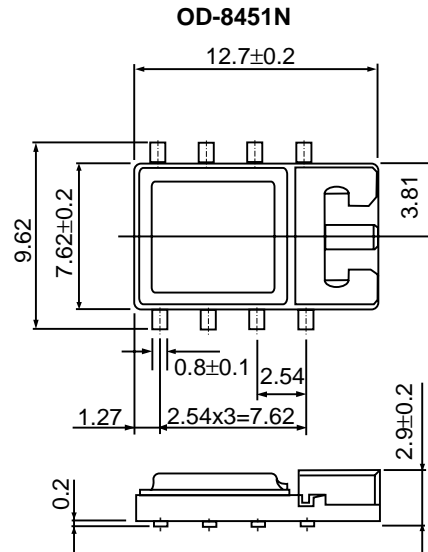
### DESCRIPTION

The OD-8451N is a new surface mount low cost InGaAs-PIN-PD module. This device can achieve stable operation over a wide temperature range of -40 to +85°C. This module has a detachable pigtail interface and is packaged in an 8 pin surface mount package, allowing the modules to be soldered like an ordinary IC by standard I.R. reflow soldering process. OD-8451N can be operated at speeds up to 622 Mb/s and is especially suitable for the use of the subscriber loop, SONET and FITL.

### APPLICATIONS

- SUBSCRIBER LOOP
- TELECOMMUNICATIONS
- DATA COMMUNICATIONS
- LOCAL AREA NETWORKS

### OUTLINE DIMENSIONS (Units in mm)



PIN	FUNCTION
1	NC
2	Package Ground
3	PD Cathode
4	NC
5	NC
6	PD Anode
7	NC
8	NC

### ELECTRICAL / OPTICAL SPECIFICATIONS (T<sub>c</sub> = +25°C, unless otherwise specified)

PART NUMBER			OD-8451N			
SYMBOLS	PARAMETERS AND CONDITIONS <sup>1</sup>		UNITS	MIN	TYP	MAX
I <sub>D</sub>	Dark Current,	V <sub>R</sub> = 5 V, 25°C V <sub>R</sub> = 5 V, 85°C	nA	–	0.1 4	5 100
η	Quantum Efficiency,	λ = 1300 nm λ = 1550 nm	A/W	0.75 –	0.9 1.0	– –
C <sub>t</sub>	Terminal Capacitance,	V <sub>R</sub> = 5 V, f = 1 MHz	pF	–	0.8	1.5
f <sub>c</sub>	Cut-off Frequency	λ = 1300 nm, R <sub>L</sub> = 50 Ω, V <sub>R</sub> = 5 V	GHz	1	1.5	–
t <sub>r</sub> /t <sub>f</sub>	Rise/Fall Time	10-90%, I = 1300 nm, R <sub>L</sub> = 50 Ω, V <sub>R</sub> = 5 V	nsec	–	0.3	1

Note:

1. Connected with multimode (G150) fiber pigtail (OD-S524 Series).

**ABSOLUTE MAXIMUM RATINGS<sup>1</sup>**

(T<sub>A</sub> = 25°C, unless otherwise specified)

SYMBOLS	PARAMETERS	UNITS	RATINGS
P <sub>IN</sub>	Optical Input Power	mW	1.0
I <sub>F(PD)</sub>	Forward Current	mA	2.0
V <sub>R (PD)</sub>	Reverse Voltage	V	20
T <sub>OP</sub>	Operating Temperature	°C	-40 to +85
T <sub>STG</sub>	Storage Temperature	°C	-40 to +85
T <sub>SOL</sub>	Lead Soldering Temperature <sup>2</sup>	°C	230

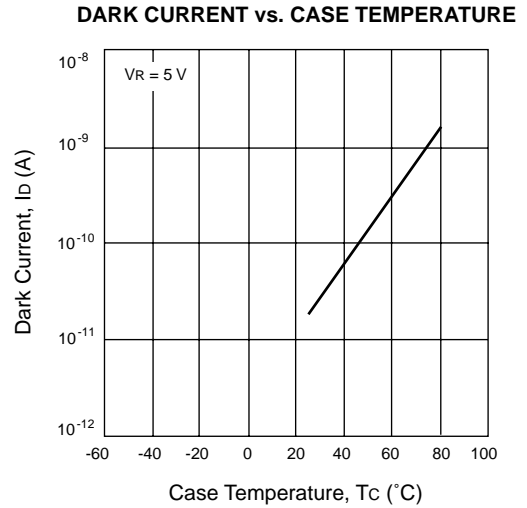
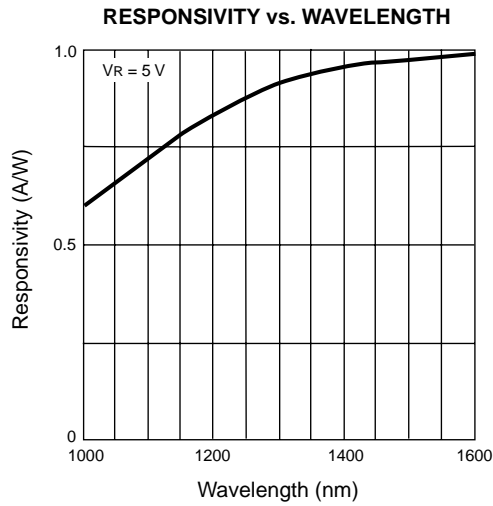
Note:

1. Operation in excess of any one of these parameters may result in permanent damage.
2. 30 seconds, reflow soldering.

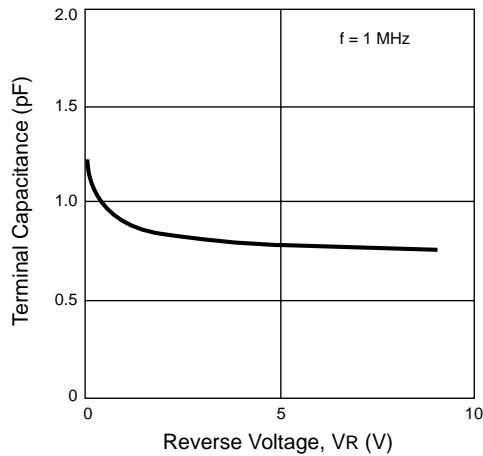
**RECOMMENDED OPERATING CONDITIONS (T<sub>C</sub> = 25°C)**

SYMBOL	PARAMETER	UNIT	MIN	TYP	MAX
P <sub>O</sub>	Optical Output Power	mW			5.0

**TYPICAL PERFORMANCE CURVES**



**TERMINAL CAPACITANCE vs. REVERSE VOLTAGE**



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