

FIBER OPTIC SERIES

InGaAs Detectors and Emitters for Fiber Optics



FEATURES

- FDDI Compatible
- High Quantum Efficiency
- Microlens Option
- Wide Temperature Range

APPLICATIONS

- High Speed Data Communications Systems
- FDDI Local Area Networks

InGaAs PIN PHOTODIODE SERIES

InGaAs PIN PHOTODIODE SERIES

Typical at 25°C

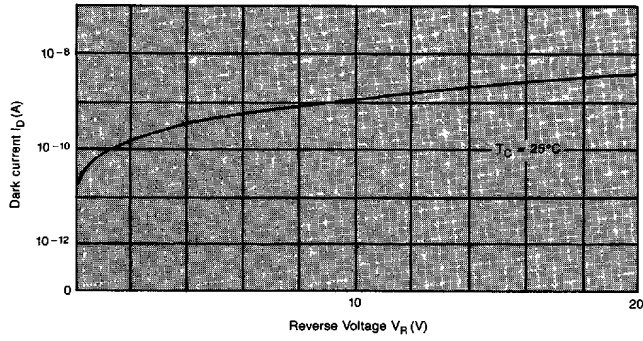
MODEL #	ACTIVE AREA DIAMETER mm	RESPONSIVITY A/W	DARK CURRENT nA	RISE TIME ns	FALL TIME ns	CAPACITANCE fF @ 1MHz	MAXIMUM REVERSE VOLTAGE V	MAXIMUM FORWARD CURRENT mA	STORAGE TEMPERATURE °C	OPERATING TEMPERATURE °C
InGaAs-080	080	0.85	0.5	0.3	0.3	3	20	2	-40 ~ +100	-20 ~ +70
InGaAs-300 InGaAs-300L	300	0.85	2.0	0.3	0.3	10	20	2	-40 ~ +100	-30 ~ +70

NOTE InGaAs-300L is the lensed version of InGaAs-300.

Test Conditions: $V_R = 5V$, $\lambda = 1300nm$, $R_L = 50\Omega$ unless otherwise specified.

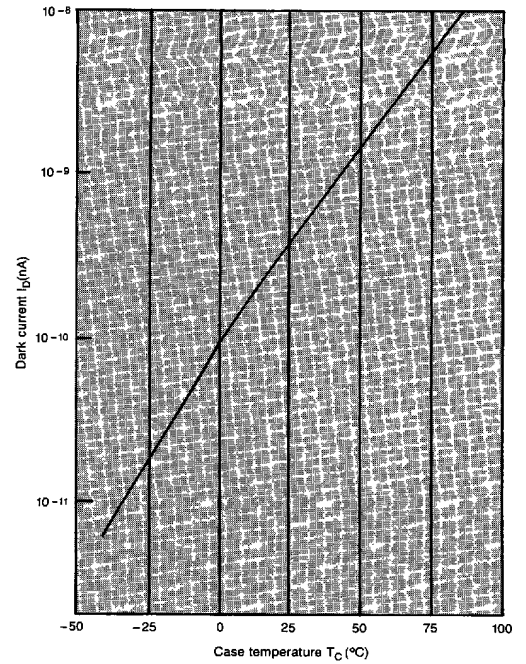


Dark Current vs. Reverse Voltage



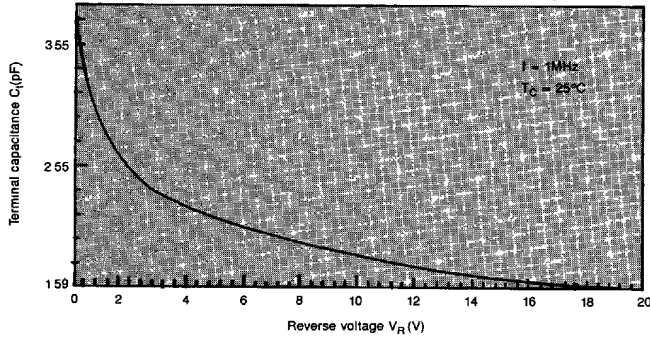
InGaAs-080

Temperature Dependence of Dark Current



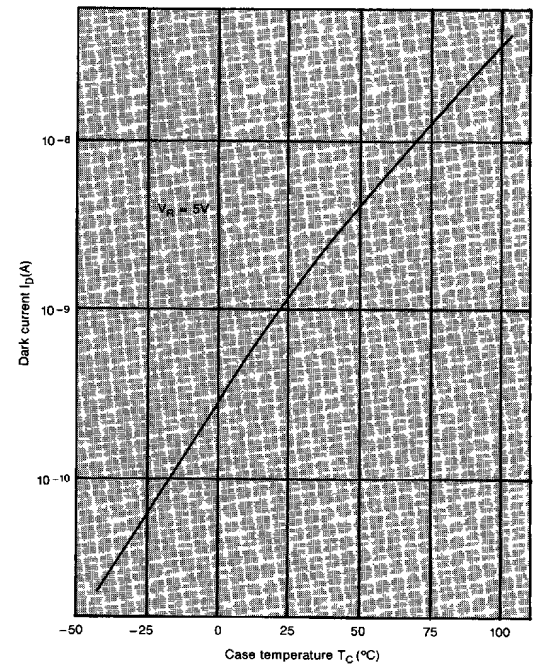
InGaAs-080

Terminal Capacitance vs. Reverse Voltage



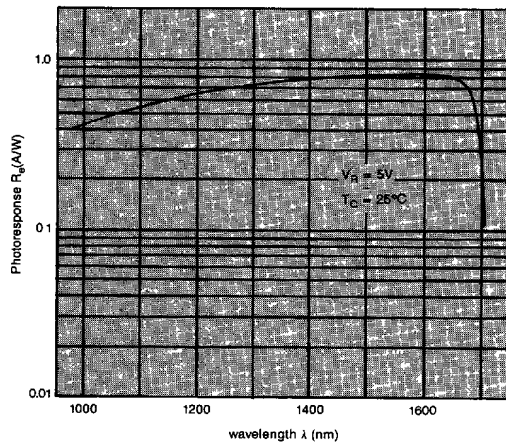
InGaAs-080

Temperature Dependence of Dark Current



InGaAs-300, InGaAs-300L

Typical Spectral Response



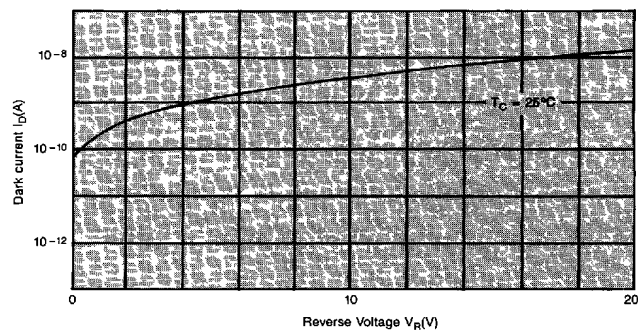
InGaAs-080

Z-Direction



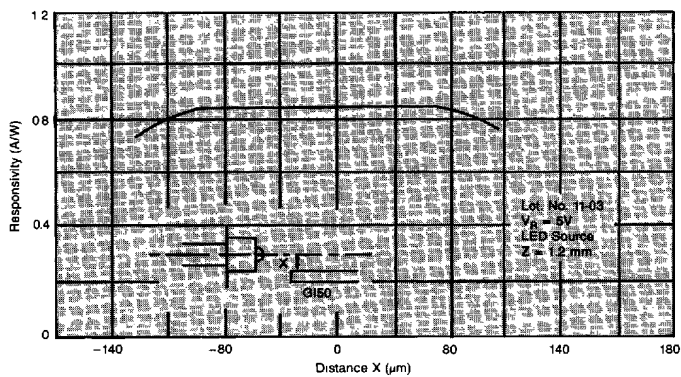
InGaAs-300L

Dark Current vs. Reverse Voltage



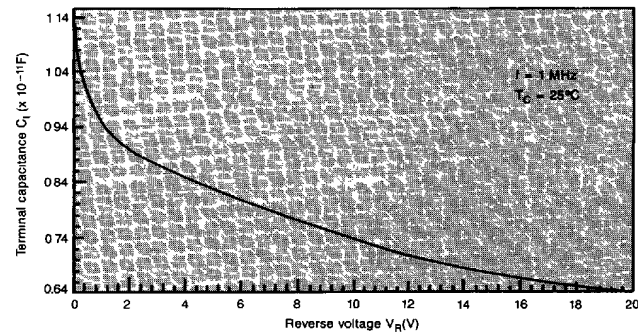
InGaAs-300, InGaAs-300L

X-Direction



InGaAs-300L

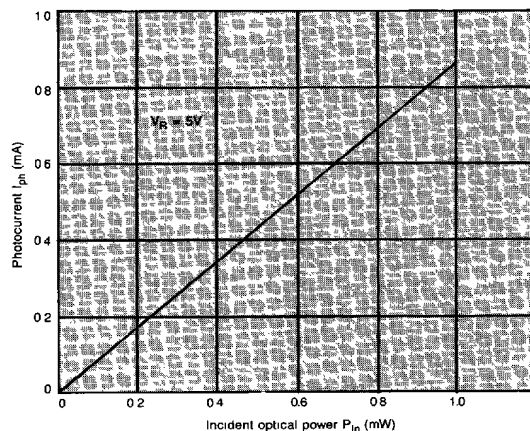
Terminal Capacitance vs. Reverse Voltage



InGaAs-300, InGaAs-300L

Coupling characteristics of PD (InGaAs-300L) to G150/125 fiber (N.A. = 0.2)

Typical Output Photocurrent vs. Incident Optical Power



InGaAs-300, InGaAs-300L

FEATURES

- FDDI Compatible
- High Power Output
- High Speed Modulation Exceeding 100 MHz.
- Microlens Coupling To Optical Fibers
- High Reliability And Long Life
- Wide Temperature Range

MODEL #	PEAK WAVELENGTH nm		MAXIMUM SPECTRAL WIDTH (FWHM)	OPTICAL OUTPUT ⁽¹⁾ μW		CUT-OFF FREQUENCY <i>I_f</i> = 100mA + 8mA P-P MHz		MAXIMUM FORWARD VOLTAGE V	MAXIMUM FORWARD CURRENT mA	MAXIMUM REVERSE VOLTAGE V	STORAGE TEMPERATURE °C	OPERATING TEMPERATURE °C
	MIN.	TYP.		MIN.	TYP.	MIN.	TYP.					
IR-1300	1270	1300	150	15	20	100	130	1.8	150	2	-40 ~ +90	-20 ~ +70
IR-1550	1530	1550	210	7	9	50	100	1.5	100	2	-40 ~ +90	-20 ~ +70

NOTE 1 Optical output power measured at the end of a 1 meter GI 50/125 μm fiber for IR-1300, at the end of a 2 meter GI 50/125 μm fiber for IR-1550

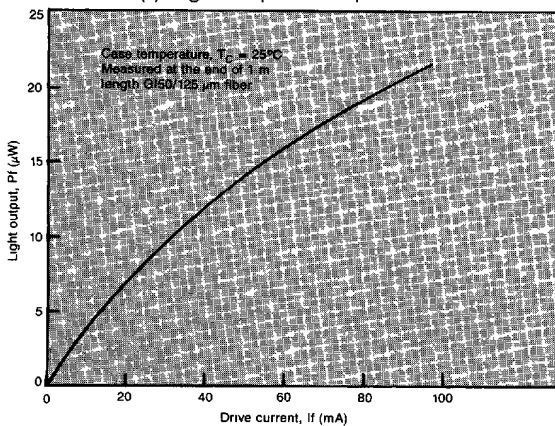
Test Conditions: *I_f* = 100mA for IR-1300B, Case Temperature = 25°C for both, *I_f* = 50mA for IR-1550

IR-1300

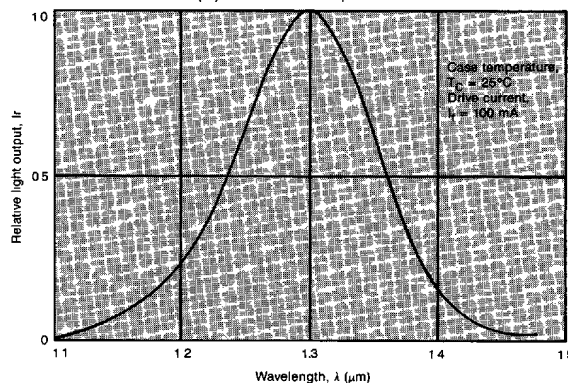
1.3μm LIGHT EMITTING DIODE

Typical Performance Characteristics

(1) Light output vs. input current



(2) Emission spectrum



Cautions

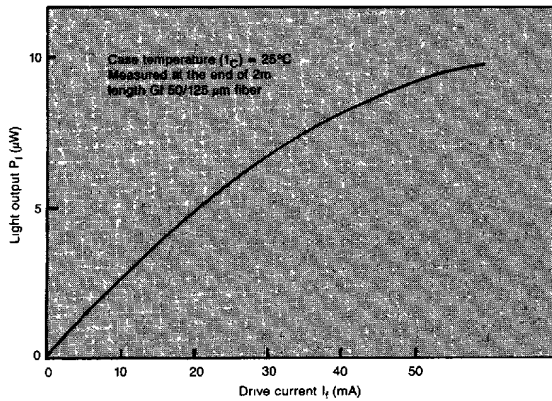
- 1) Do not exceed the specified maximum ratings.
- 2) Note that any surge current (e.g. 1A/μsec.), could destroy the diode.
- 3) Avoid causing electrostatic destruction while the diode is in operation.
- 4) Do not observe the diode directly through a microscope or binocular while it is in operation. The high luminance can injure the eyes.

IR-1550

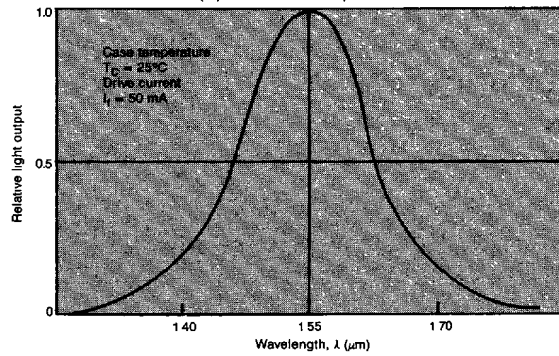
1.5 μ m LIGHT EMITTING DIODE

Typical Performance Characteristics

(1) Forward current optical output characteristics



(2) Emission spectrum

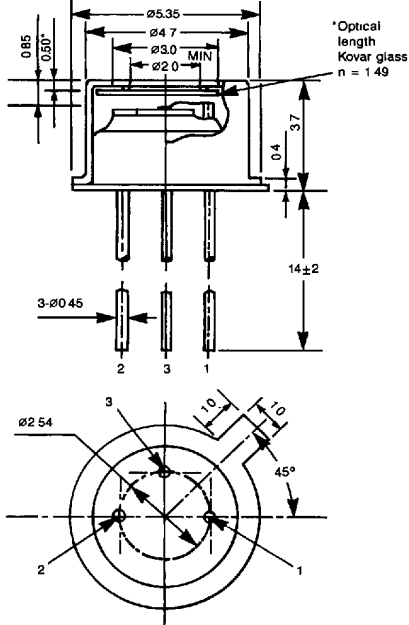


Cautions

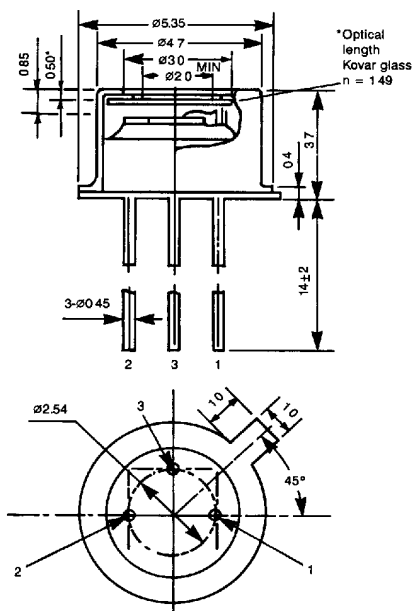
- 1) Do not exceed the specified max. rating.
- 2) The max. rating is calculated with the case temperature of 25°C. Note that a rise in temperature restricts the operating temperature range due to reduction in the max. allowable current.
- 3) Below two thirds of the max. rating as recommend for safety operation.
- 4) Make sure that you know beforehand the transient characteristics of overall drive system including the power source. You'll need an appropriate measure to keep the transient spike current occurred during the power switch ON/OFF below the max. rating.
- 5) Beware that a surge current (e.g. 1A/ μ sec.) can destroy the device.
- 6) Beware of electrostatic damage when handling the device. Be sure to use a conductive mat, conductive shoes, conductive receptacles, and human body grounding. Be sure to ground the solder tip.
- 7) For soldering keep the following conditions: soldering temperature below 240°C; soldering time below 3 sec.
- 8) Do not observe the diode directly through a microscope or binocular while it is in operation. The high luminance can injure the eyes.

NOTE 1 All units in millimeters

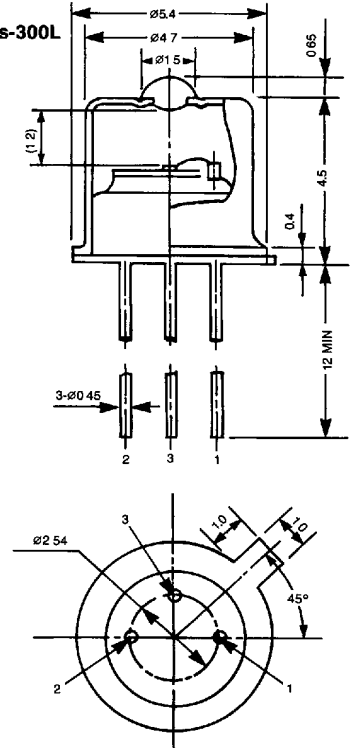
InGaAs-080



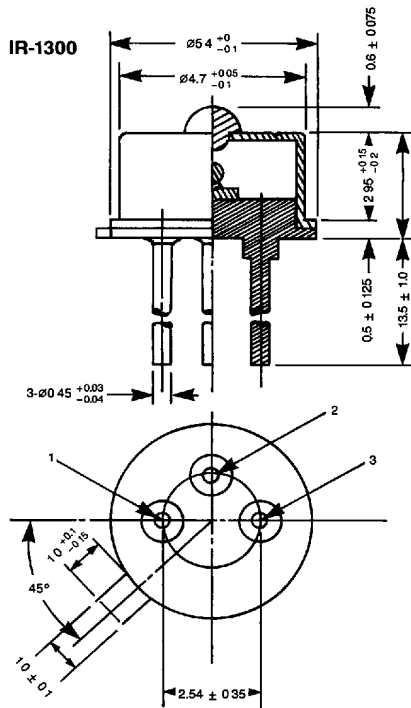
InGaAs-300



InGaAs-300L



IR-1300



IR-1550

