▪ 100Mbps / 155Mbps / 622Mbps

Large Active Area and High Speed Silicon Photodiodes

OSI Optoelectronics's family of large active area and high speed silicon detector series are designed to reliably support short-haul data communications applications. All exhibit low dark current and low capacitance at 3.3V bias. The base unit comes in a 3 pin TO-46 package with micro lens cap or AR coated flat window. Standard fiber optic receptacles (FC, ST, SC and SMA) allow easy integration of OSI Optoelectronics's fast silicon photodiodes into systems.

▪ APPLICATIONS

- High Speed Optical Communications
- Single/Multi-Mode Fiber Optic Receiver
- Fast Ethernet/FDDI
- SONET/SDH, ATM

▪ FEATURES

- Silicon Photodiodes
- High Responsivity
- Large Diameter Sensing Area
- Low Capacitance @ 3.3V Bias
- Low Cost

Absolute Maximum Ratings

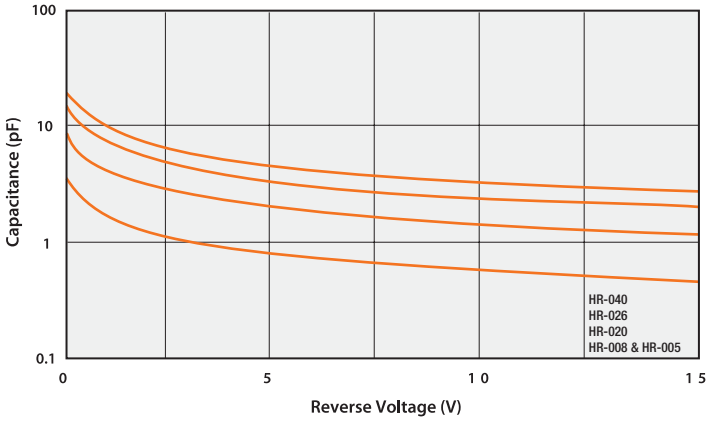
PARAMETERS	SYMBOL	MIN	MAX	UNITS
Storage Temperature	T_{stg}	-55	+125	°C
Operating Temperature	T_{op}	-40	+75	°C
Soldering Temperature	T_{sld}	---	+260	°C

Electro-Optical Characteristics

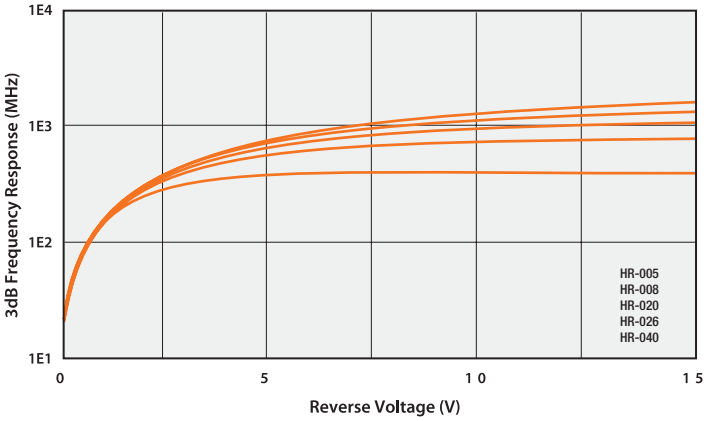
T_A=23°C

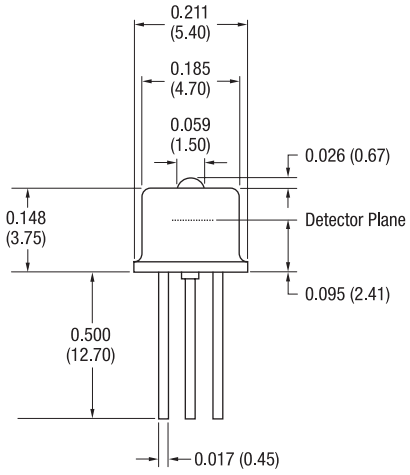
PARAMETERS	SYMBOL	CONDITIONS	FCI-HR005			FCI-HR008			FCI-HR020			FCI-HR026			FCI-HR040			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
Active Area Diameter	AA_ϕ	---	---	127	---	---	203	---	---	508	---	---	660	---	---	991	---	µm
Responsivity (Flat Window Package)	R_λ	λ=850nm	---	0.50	---	---	0.50	---	---	0.50	---	---	0.50	---	---	0.50	---	A/W
Dark Current	I_d	V_R = 5.0V	---	0.02	0.80	---	0.03	0.80	---	0.06	1.00	---	0.09	1.50	---	0.30	2.00	nA
Capacitance	C_j	V_R = 3.3V	---	0.9	---	---	0.9	---	---	2.1	---	---	2.8	---	---	5.2	---	pF
		V_R = 5.0V	---	0.80	---	---	0.80	---	---	1.8	---	---	2.6	---	---	4.9	---	
Rise Time	t_r	10% to 90% R_L=50Ω λ=850nm, V_R = 3.3V	---	0.75	---	---	0.75	---	---	1.00	---	---	1.10	---	---	1.20	---	ns
		10% to 90% R_L=50Ω λ=850nm, V_R = 5.0V	---	0.60	---	---	0.60	---	---	0.80	---	---	0.90	---	---	1.00	---	
Max. Reverse Voltage	---	---	---	---	20	---	---	20	---	---	20	---	---	20	---	---	20	V
NEP	---	---	---	5.95E -15	---	---	6.19E -15	---	---	8.76E -15	---	---	1.07E -14	---	---	1.96E -14	---	W/√Hz

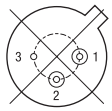
Typical Capacitance vs. Reverse Bias



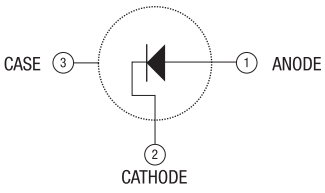
Frequency Response vs. Bias Voltage



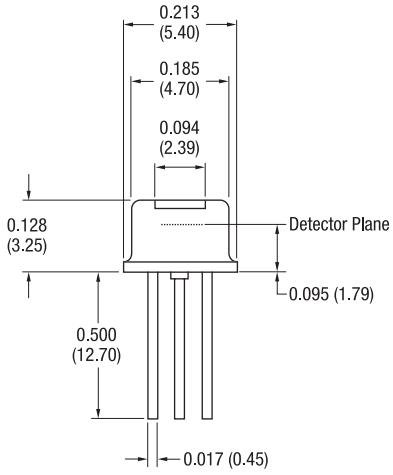


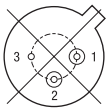


Bottom View

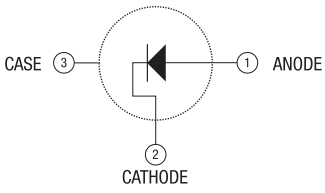


Pin Circle Diameter = 0.100 (2.54)





Bottom View



Pin Circle Diameter = 0.100 (2.54)

Notes:
- All units in inches (mm).
- All tolerances: 0.005 (0.125).
- Please specify when ordering the flat window or lens cap devices.
- The flat window devices have broadband AR coatings centered at 850nm.
- The thickness of the flat window=0.008 (0.21).