



100Mbps / 155Mbps / 622Mbps

Large Active Area and High Speed Silicon Photodiodes

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

DESCRIPTION

OSI Fibercomm'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 Fibercomm's fast silicon photodiodes into systems.

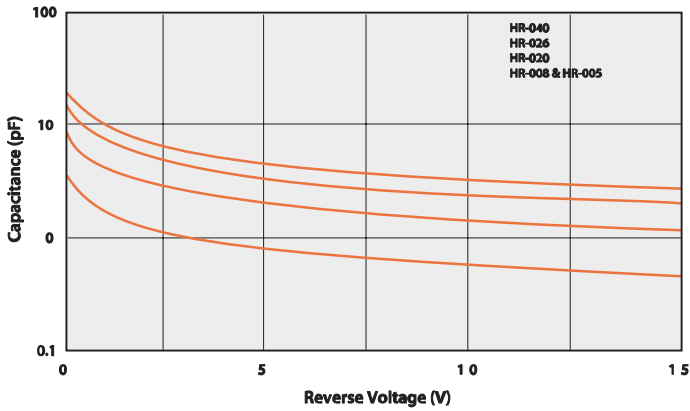
Absolute Maximum Ratings

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

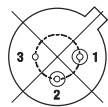
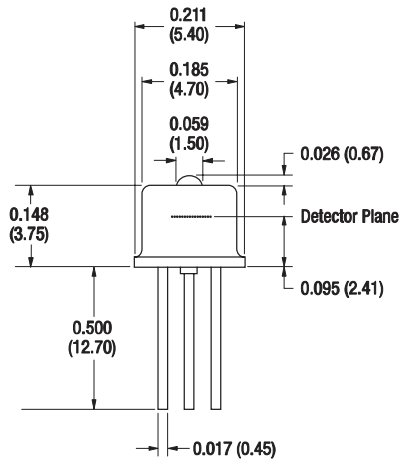
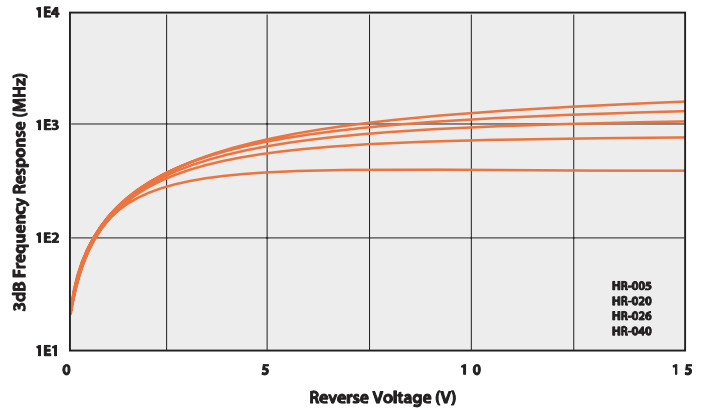
Electro-Optical Characteristics

			$T_A = 23^\circ\text{C}$																
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	---	---	127	---	---	203	---	---	508	---	---	660	---	---	991	---	μm	
Responsivity	R	$\lambda = 850\text{nm}$	---	0.50	---	---	0.50	---	---	0.50	---	---	0.50	---	---	0.50	---	A/W	
Dark Current	I_d	$V_R = 5.0\text{V}$	---	0.02	0.80	---	0.03	0.80	---	0.06	1.00	---	0.09	1.50	---	0.30	2.00	nA	
Capacitance	C_j	$V_R = 3.3\text{V}$	---	0.9	---	---	0.9	---	---	2.1	---	---	2.8	---	---	5.2	---	pF	
		$V_R = 5.0\text{V}$	---	0.8	---	---	0.8	---	---	1.8	---	---	2.6	---	---	4.9	---		
Rise Time	t_r	10% to 90% $R_L = 50\Omega$ $\lambda = 850\text{nm}$	$V_R = 3.3\text{V}$	---	0.75	---	---	0.75	---	---	1.00	---	---	1.10	---	---	1.20	---	ns
			$V_R = 5.0\text{V}$	---	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	

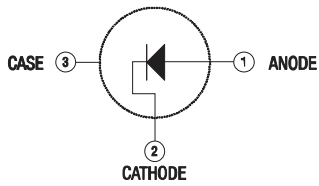
Typical Capacitance vs. Reverse Bias



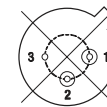
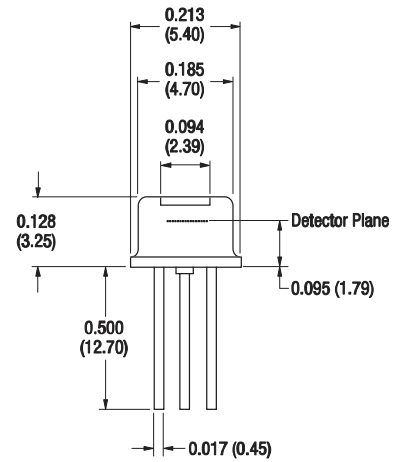
Frequency Response vs. Bias Voltage



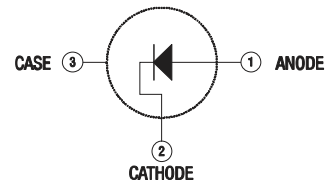
Bottom View



Pin Circle Diameter = 0.100 (2.54)



Bottom View



Pin Circle Diameter = 0.100 (2.54)

Notes:

- ① All units in inches (mm).
- ② All tolerances: 0.005 (0.125).
- ③ Please specify when ordering the flat window or lens cap devices.
- ④ The flat window devices have broadband AR coatings centered at 850nm.
- ⑤ The thickness of the flat window=0.008 (0.21).