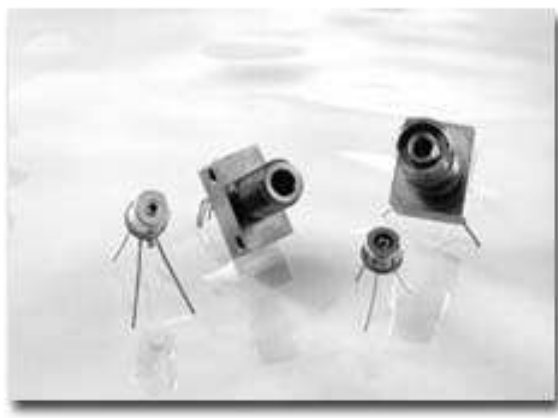


FIBER OPTIC SERIES



APPLICATIONS

FEATURES

- Fiber Optic Communication Links
- Video Systems
- Laser Monitoring Systems
- Computers and Peripherals
- Industrial Controls
- Guidance Systems
- FDDI Local Area Networks
- High Speed Optical Communications
- Speeds in sub ns
- High gain
- Low dark current
- Low capacitance
- TO-46 metal can With lensed cap

UDT Sensors offers a variety of fiber optic detectors. They include:

Fiber Optic Series-Silicon: are several families of small active area silicon photodiodes divided into High Responsivity Series (HR), High Speed Series (HS) and Ultra High Speed (UHS) series.

Fiber Optic Series-Silicon / Hybrid: is a 90 MHz integrated silicon photodetector / transimpedance amplifier hybrid with a single power supply and linear differential output voltage for applications such as Ethernet and token ring systems. This detector is available with a micro lens cap.

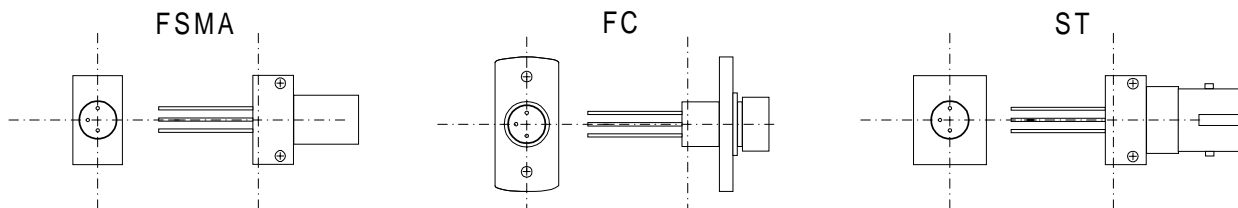
Fiber Optic Series-Silicon APD: is a small active area Silicon Avalanche Photodiode with gains up to a few hundred with a typical reverse bias of

only 325 V. It provides high gain bandwidth product and high responsivity compared to detector/transimpedance amplifier combination.

Fiber Optic Series-Silicon BPX-65: is a 1 x 1 mm active area high speed silicon photodetector for high modulation bandwidth applications where a large active area is needed.

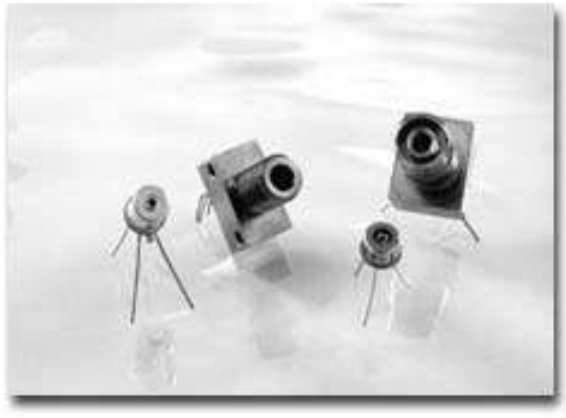
Fiber Optic Series-InGaAs: devices are high speed InGaAs detectors exhibiting a spectral range of 850 to 1700 nm. These detectors are specifically designed for NIR optical communication, providing high responsivity, low capacitance and high speed. They are available with micro lens cap.

All of the above detectors and /or hybrids are also available with a spherical micro lens cap to enhance fiber optic coupling efficiency. They can also be provided with any of the standard receptacles such as SMA, ST, FC, etc., for direct optical fiber coupling.



HIGH SPEED SILICON SERIES

FIBER OPTIC PHOTODIODES



APPLICATIONS

- Fiber Optic Communication Links
- Video Systems
- Computers and Peripherals
- Industrial Control
- Guidance Systems
- Laser Monitoring

FEATURES

- Sub ns Response
- Low Dark Current
- Low Capacitance
- TO-46 Package
- w/ FO Receptacle
- w/ Lensed Cap

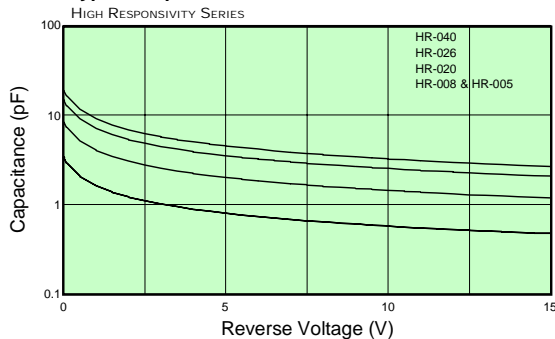
UDT Sensors Silicon Fiber Optic detector series consist of three families of small active area photodiodes with High Responsivity (HR Series), High Speed (HS Series) and Ultra High Speed (UHS Series) properties.

The spectral range for these devices are from 350 nm to 1100 nm. The responsivity and response time are optimized such that the HR series exhibit a peak responsivity of 0.50 A/W at 800 nm and typical response times of a few hundred pico seconds at -5V, while the HS series have a peak responsivity of 0.40 A/W at 750 nm and typical response times less than 500 ps at -3V.

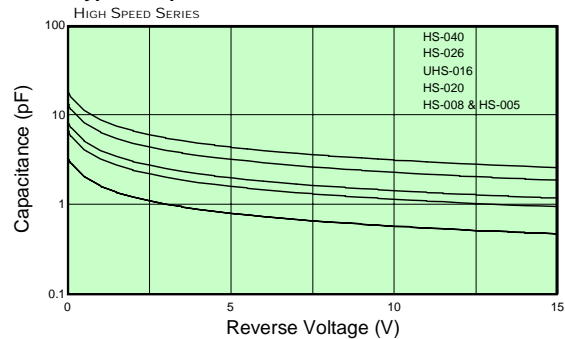
UDT Sensors' Ultra High Speed (UHS) detector demonstrates state of the art detector technology, achieving response times less than 300ps at -3V reverse bias.

Note that for all high-speed photodetectors, a reverse bias is required to achieve the fastest response times. However, the reverse bias should be limited to maximum reverse voltage specified to avoid damage to the detector. Output signals can be measured directly with an oscilloscope or coupled to high frequency amplifiers as shown in figure 10 of the Photodiode Characteristics section of the catalog.

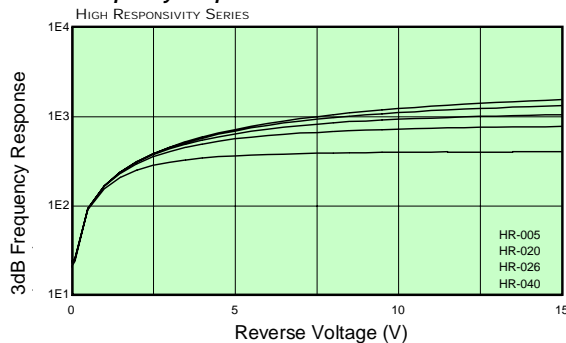
Typical Capacitance vs Reverse Bias



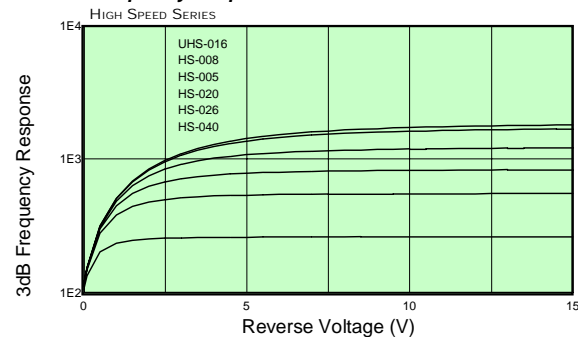
Typical Capacitance vs Reverse Bias



Frequency Response vs Reverse Bias



Frequency Response vs Reverse Bias

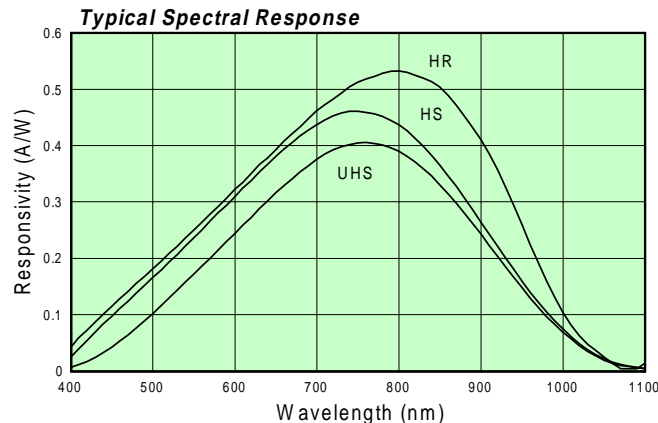


Model No.	Active Area		Peak Wavelength (nm)	Responsivity (A/W)		Capacitance (pF)	Dark Current (nA)		NEP (W/√Hz)	Reverse Voltage (V)	Rise Time § (ns)		Temp Range (°C)		Package Style ¶
	Area (mm ²)	Dimension (mm)		830 nm							830 nm 50 ohm		Operating	Storage	
				min	typ		typ	max	typ		max				
HIGH SPEED SERIES (V _{BIAS} =-3 V)															
PIN-HS005 PIN-HS005L*	.01	0.127f	750	.35*	.40*	1.0	0.01	0.30	3.6 e-15	15	0.30	0.40	-40 ~ +100 -55 ~ +125		9 / TO-18
PIN-HS008 PIN-HS008L*	.04	0.203 sq				1.0	0.01	0.30	3.6 e-15		0.30	0.40			
PIN-HS020 PIN-HS020L*	.20	0.508f				2.5	0.02	0.50	5.2 e-15		0.40	0.50			
PIN-HS026 PIN-HS026L*	.34	0.660f				4.0	0.035	0.80	6.8 e-15		0.45	0.65			
PIN-HS040 PIN-HS040L*	.77	0.991f				5.5	0.05	1.50	8.1 e-15		0.65	0.90			
HIGH RESPONSIVITY SERIES (V _{BIAS} =-5 V)															
PIN-HR005 PIN-HR005L*	.01	0.127f	800	.45*	.50*	0.8	0.03	0.80	5.0 e-15	15	0.60	1.0	-40 ~ +100 -55 ~ +125		9 / TO-18
PIN-HR008 PIN-HR008L*	.04	0.203 sq				0.8	0.03	0.80	5.0 e-15		0.60	1.0			
PIN-HR020 PIN-HR020L*	.20	0.508f				2.0	0.06	1.00	7.1 e-15		0.80	1.2			
PIN-HR026 PIN-HR026L*	.34	0.660f				3.5	0.085	1.50	1.0 e-14		0.90	1.4			
PIN-HR040 PIN-HR040L*	.77	0.991f				4.5	0.30	2.00	1.9 e-14		1.0	1.6			
ULTRA HIGH SPEED (V _{BIAS} =-3 V)															
PIN-UHS016 PIN-UHS016L*	.13	0.406	750	.30*	.35*	2.0	0.020	0.50	7.2 e-15	15	0.25	0.30			

* Responsivity measured with a flat glass window.
Refer to the specific family of devices for applied reverse bias.

Chip centering within ± 0.005 inches
w.r.t. the OD of header.

PRECAUTION:
These devices are sensitive to
electrostatic discharge (ESD).
Use proper handling and testing
procedures.



For MECHANICAL DRAWINGS Click Here