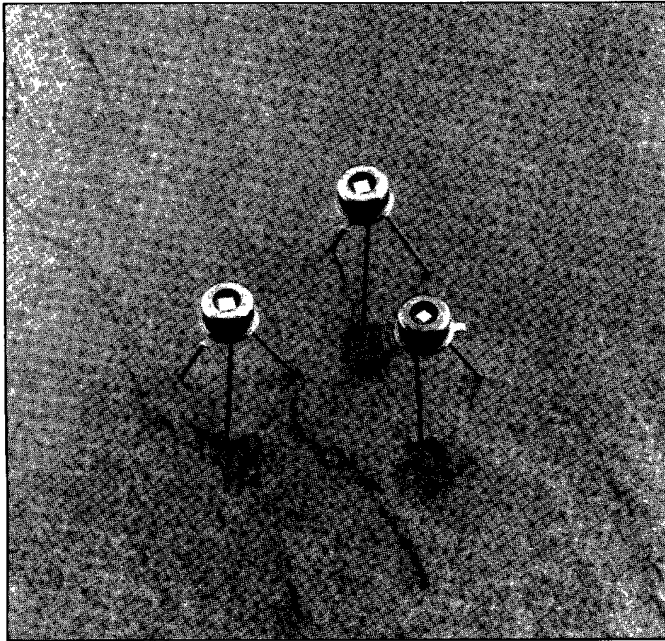


# HIGH-SPEED SERIES

## Silicon PIN Photodetectors for Fiber Optics



### FEATURES

- Fast response, low dark currents, low capacitance: can sustain large bandwidths.
- High responsivity for fiber optics applications.
- RFI immunity in a low cost hermetic metal package.
- TO-18 can with 3-lead header that fits into standard fiber optic connectors.
- With option of spherical lens to enhance fiber/SMA coupling efficiency. To order, add L to part number: e.g. PIN-HS020L.

### APPLICATIONS

- Data Links for Communications
- CATV
- Video Systems
- Computer and Peripheral Equipment
- Microprocessors
- Sensors and Industrial Controls
- Medical Electronics

The fiber optics series is designed to offer high performance and reliability at low cost. These products are UDT Sensors' fastest standard photodiodes. Two types are available: High Speed (HS), and High Responsivity (HR).

#### UDT STANDARD HIGH-SPEED PHOTODETECTORS

- PIN-HS008 ■ PIN-HS020 ■ PIN-HS026 ■ PIN-HS040

#### UDT STANDARD HIGH-RESPONSIVITY PHOTODETECTORS

- PIN-HR008 ■ PIN-HR020 ■ PIN-HR026 ■ PIN-HR040

### PIN PHOTODETECTOR SPECIFICATIONS

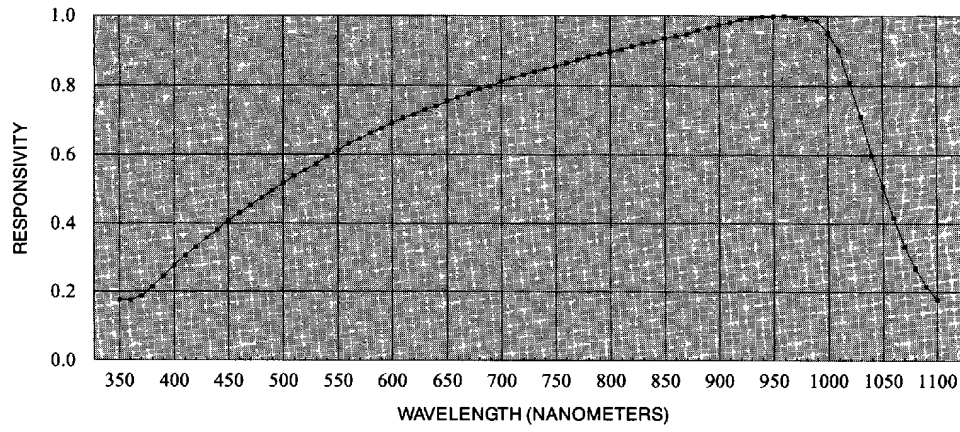
MODEL #	ACTIVE SURFACE		RESPON-SIVITY		RESPONSE TIME (2)		CAPACITANCE (1)		DARK CURRENT (1)		NEP	MINIMUM BREAKDOWN VOLTAGE
	AREA	DIA.	@ 830nm		@ -10V		@ -10V		@ -10V			
	mm <sup>2</sup>	mm	R, A/W		t <sub>r</sub> , ns		C <sub>j</sub> , pf		I <sub>d</sub> , nA		W/√Hz	V <sub>br</sub> , V
			MIN.	TYP.	TYP.	MAX.	TYP.	TYP.	TYP.	MAX.	TYP.	TYP.
PIN-HS008	0.04	0.20 sq	0.35	0.4	35	1.0	1.0	0.02	1.0	6.3 x 10 <sup>-15</sup>	30	
PIN-HS020	0.20	0.51	0.35	0.4	45	1.0	2.5	0.05	1.0	9.0 x 10 <sup>-15</sup>	30	
PIN-HS026	0.34	0.66	0.35	0.4	50	1.0	4.0	0.075	1.0	1.2 x 10 <sup>-14</sup>	30	
PIN-HS040	0.80	1.00	0.35	0.4	80	1.0	5.5	0.250	1.0	2.2 x 10 <sup>-14</sup>	30	
PIN-HR008	0.04	0.20 sq	0.48	0.52	1.0	2.0	0.8	0.03	1.0	6.0 x 10 <sup>-15</sup>	40	
PIN-HR020	0.20	0.51	0.48	0.52	1.0	2.0	2.0	0.06	1.0	6.5 x 10 <sup>-15</sup>	40	
PIN-HR026	0.34	0.66	0.48	0.52	1.0	2.0	3.5	0.085	1.0	1.0 x 10 <sup>-14</sup>	40	
PIN-HR040	0.80	1.00	0.48	0.52	1.0	2.0	4.5	0.30	2.0	1.9 x 10 <sup>-14</sup>	40	

### DESIGNERS' NOTES

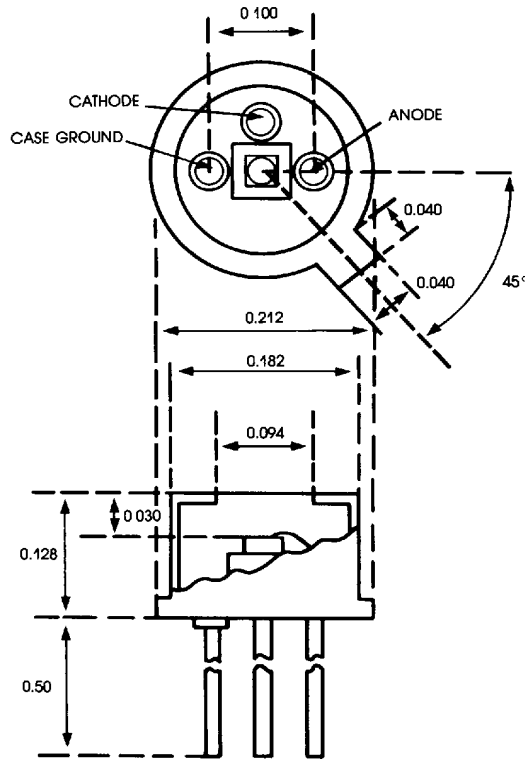
1. Maximum values equal twice typical shown here.
2. Response time is a function of capacitance and may vary ± 20% due to process variability.
3. T<sub>A</sub> = 22°C for all specifications.
4. Temperature Range: Storage: -55 to 125°C  
Operation: -30 to 85°C
5. Chip centering within ± .005 in.

**SPECTRAL RESPONSIVITY**  
NORMALIZED TYPICAL SILICON PHOTODIODE

T-41-50



**MECHANICAL DETAILS**



PIN-HS008/020/026/040

PIN-HR008/020/026/040