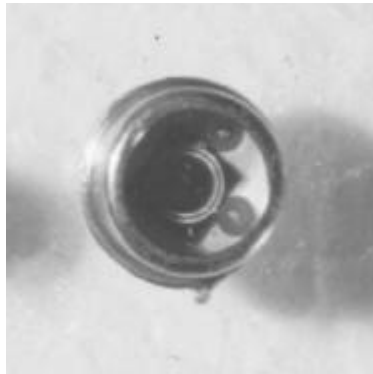


## P-TYPE SILICON PIN PHOTODIODE FD5P1



PIN photodiode FD5P is optimized for detection of radiation at 1060nm. A photodiode illuminated by visible and near infrared light behaves as a current source with photocurrent proportional to the power of detected radiation. Reverse bias increases parallel internal resistance and decreases capacity of diode. Decrease of capacity and of load resistance  $R_L$  decreases response time. Low capacity with relatively low bias is achieved by using extremely pure, high resistance silicon for the base I-region of the diode ( $> 10 \text{ k}\Omega\text{cm}$ ). Background radiation flux increases noise current, thus filters or darkening are recommended to decrease this radiation.

### FEATURES

- Guard ring construction
- Peak responsivity at 1060nm
- Short response time
- Low capacity
- Low noise
- Low dark current
- Wide spectral range
- Linearity over wide spectral range
- High reliability
- Fast delivery

### APPLICATION

- NdYAG laser pulse detection
- Guidance, tracking and aligning
- Alarm systems
- Optical pyrometers
- Precision light meters

## SPECIFICATIONS

- Ambient temperature 25°C, DC reverse operating voltage 200V

Parameter	typical	min	max	Upon request, up to	Note
Breakdown voltage (V)	400	250		>450	1 $\mu$ A
Dark current (nA)	20		50	<10	
Responsivity at 900 nm (A/W)	0.6	0.5		0.65	
Responsivity at 1060 nm (A/W)	0.45	0.40			
NEP at 900nm ( $\times 10^{-12}$ W/Hz <sup>1/2</sup> )	<1.5		10	<1	
NEP at 1060nm ( $\times 10^{-12}$ W/Hz <sup>1/2</sup> )	<2.5		15	<1.5	
Capacitance (pF)	2.8		3.0	2.65	1 MHz
Response time (ns)	11				900 nm, R=50 $\Omega$ , 50%
Approx. full angle for totally illuminated active area ( $^{\circ}$ )	105				The values are dependent on dimensional tolerances of the package
Approx. full angle for partially illuminated active area ( $^{\circ}$ )	146				The values are dependent on dimensional tolerances of the package
Active area (mm <sup>2</sup> )	5				

