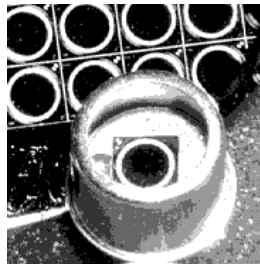


N-TYPE SILICON PIN PHOTODIODE FD5N



PIN photodiode FD5N is optimized for detection of radiation at 900nm. 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 ($> 2 \text{ k}\Omega\text{cm}$). Background radiation flux increases noise current, thus filters or darkening are recommended to decrease this radiation.

FEATURES

- Peak responsivity at 900nm
- Fast response time
- Low capacity
- Low noise
- Low dark current
- Wide spectral range
- Linearity over wide spectral range
- High reliability
- Selection upon request
- Fast delivery

APPLICATIONS

- Fiber optics communications
- High speed fluctuation detection
- Precision light meters
- Flow monitoring
- Alarm systems
- Inspection and control
- Flame and exhaust monitoring
- Optical encoding
- Event counting
- Optical pyrometers

SPECIFICATIONS

- Ambient temperature 25°C, DC reverse operating voltage 45V

Parameter	typical	min	max	Per request, up to	Note
Breakdown voltage (V)	250	100		300	1 μ A
Dark current (nA)	2		20	<1	
Responsivity at 900 nm (A/W)	0.6	0.5		0.65	
Responsivity at 1060 nm (A/W)	0.4	0.3		0.41	
NEP at 900nm ($\times 10^{-12}$ W/Hz ^{1/2})	<1.5		7	<1	
NEP at 1060nm ($\times 10^{-12}$ W/Hz ^{1/2})	<4		20	<2	
Capacitance (pF)	8.6		10	<7.6	1 MHz
Response time (ns)	3.5			3	900 nm, R=50 Ω , 50%
Approx. full angle for totally illuminated active area ($^{\circ}$)	55				The values are dependent on dimensional tolerances of the package
Approx. full angle for partially illuminated active area($^{\circ}$)	100				The values are dependent on dimensional tolerances of the package
Active area (mm ²)	5				

