

N-TYPE SILICON PIN PHOTODIODE FD08N



PIN photodiode FD08N 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 45 V

Parameter	typical	min	max	Per request, up to	Note
Breakdown voltage (V)		100		>300	at 1 μ A
Dark current (nA)	2		20	< 0.5	
Responsivity at 900 nm (A/W)	0.6	0.5		0.65	
Responsivity at 1060 nm (A/W)	0.2	0.1		0.3	
NEP at 900nm ($\times 10^{-12}$ W/Hz ^{1/2})	1		3	< 1	
NEP at 1060nm ($\times 10^{-12}$ W/Hz ^{1/2})	3		55	< 1.5	
Capacitance (pF)	2.2		2.4	< 2.1	1 MHz
Response time (ns)	3			2	900 nm, R=50 Ω , 50%
Approx. full angle for totally illuminated active area (°)	62				The values are dependent on dimensional tolerances of the package
Approx. full angle for partially illuminated active area(°)	90				The values are dependent on dimensional tolerances of the package
Active area (mm ²)	0.8				

