

SD197-23-21-041

Silicon Photodiode

The SD 197-23-21-041 is a red enhanced quad-cell silicon photodiode used for nulling, centering, or measuring small positional changes packaged in a hermetic TO-8 metal package.

Applications

- Emitter
- Alignment
- Position Sensing
- Medical
- Industrial
- Nulling
- Centering
- Surface Profiling
- Targeting
- Guidance Systems

Features

- Low Noise
- Red Enhanced
- High Shunt Resistance
- High Responsivity
- Low Crosstalk
- Very High Accuracy
- Excellent Resolution
- Excellent Response Match

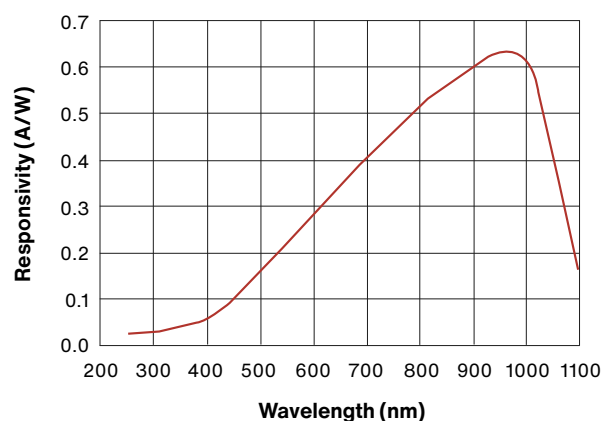
Absolute Maximum Ratings at $T_A=23\text{ }^\circ\text{C}$

Parameter	Symbol	Min	Max	Unit
Wavelength Range	-	350	1100	nm
Reverse Voltage	V_R	-	50	V
Operating Temperature	T_{OP}	-40	+125	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55	+150	$^\circ\text{C}$
Package		TO-8		

Typical Electro-Optical Specifications at $T_A=23\text{ }^\circ\text{C}$

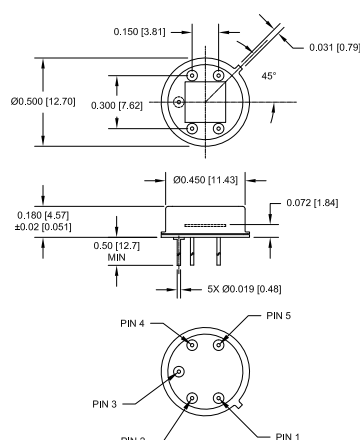
Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Dark Current	$V_R=5\text{V}$	I_D	-	1.4	7.5	nA
Shunt Resistance	$V_R=10\text{mV}$	R_{SH}	175	-	-	$\text{M}\Omega$
Junction Capacitance	$V_R=0\text{V}; f=1\text{MHz}$	C_J	-	100	-	pF
	$V_R=10\text{V}; f=1\text{MHz}$	C_J	-	20	-	pF
Responsivity	$\lambda=633\text{nm}, V_R=0\text{V}$	R	0.32	0.36	-	A/W
	$\lambda=900\text{nm}, V_R=0\text{V}$	R	0.50	0.55	-	A/W
Breakdown Voltage	$I=10\mu\text{A}$	V_{BD}	-	50	-	V
Noise Equivalent Power	$V_R=0\text{V}@\lambda=950\text{nm}$	NEP	-	9×10^{-14}	-	$\text{W}/\sqrt{\text{Hz}}$
Response Time	$R_L=50\Omega, V_R=0\text{V}$	T_R	-	320	-	nS
	$R_L=50\Omega, V_R=10\text{V}$	T_R	-	10	-	nS

Spectral Response



Mechanical Specifications

Units are in inches [mm]



Soldering Conditions: $260\text{ }^\circ\text{C}$ 1/16 inch away from case for 3 seconds max.