

### FEATURES

- Low noise
- Red enhanced
- High shunt resistance
- High response

### DESCRIPTION

The **SD 380-23-21-251** is a red enhanced quad-cell silicon photodiode used for nulling, centering, or measuring small positional changes packaged in a TO-8 metal package.

### APPLICATIONS

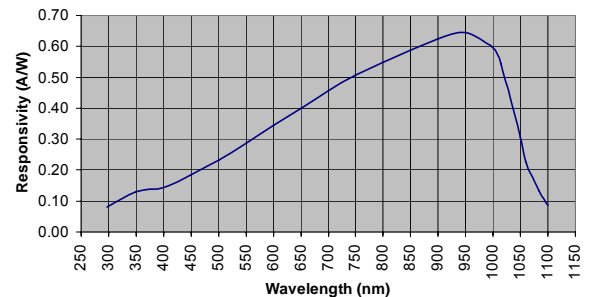
- Emitter Alignment
- Position sensing
- Medical and Industrial

### ABSOLUTE MAXIMUM RATING (TA = 23°C UNLESS OTHERWISE NOTED)

SYMBOL	PARAMETER	MIN	MAX	UNITS
$V_{BR}$	Reverse Voltage		50	V
$T_{STG}$	Storage Temperature	-55	+150	°C
$T_O$	Operating Temperature	-40	+125	°C
$T_S$	Soldering Temperature*		+240	°C

\* 1/16 inch from case for 3 seconds max.

### SPECTRAL RESPONSE



### ELECTRO-OPTICAL CHARACTERISTICS RATING (TA = 23°C UNLESS OTHERWISE NOTED)

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_D$	Dark Current	$V_R = 5\text{ V}$		5.0	27.0	nA
$R_{SH}$	Shunt Resistance	$V_R = 10\text{ mV}$	100			$M\Omega$
$C_J$	Junction Capacitance	$V_R = 0\text{ V}, f = 1\text{ MHz}$		375		pF
		$V_R = 5\text{ V}, f = 1\text{ MHz}$		75		
$\lambda_{range}$	Spectral Application Range	Spot Scan	350		1100	nm
R	Responsivity	$\lambda = 633\text{ nm}, V_R = 0\text{ V}$	0.32	0.36		A/W
		$\lambda = 900\text{ nm}, V_R = 0\text{ V}$	0.50	0.55		
$V_{BR}$	Breakdown Voltage	$I = 10\ \mu\text{A}$		50		V
NEP	Noise Equivalent Power	$V_R = 0\text{ V} @ \lambda = 950\text{ nm}$		$3.0 \times 10^{-14}$		$\text{W}/\sqrt{\text{Hz}}$
$t_r$	Response Time**	$RL = 50\ \Omega, V_R = 0\text{ V}$		190		nS
		$RL = 50\ \Omega, V_R = 10\text{ V}$		13		

\*\*Response time of 10% to 90% is specified at 660nm wavelength light.

Information in this technical datasheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject to change without notice.