

### FEATURES

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

### DESCRIPTION

The **SD 380-23-21-051** 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

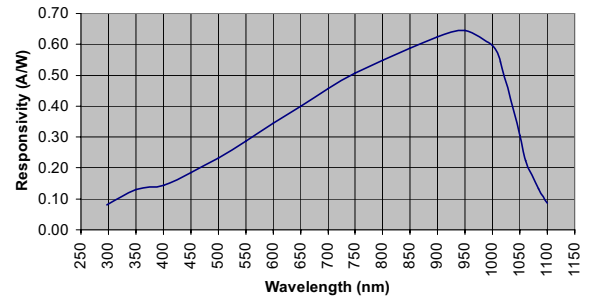


### ABSOLUTE MAXIMUM RATING (TA)= 23°C UNLESS OTHERWISE NOTED

| SYMBOL           | PARAMETER              | MIN | MAX  | UNITS |
|------------------|------------------------|-----|------|-------|
| V <sub>BR</sub>  | Reverse Voltage        |     | 50   | V     |
| T <sub>STG</sub> | Storage Temperature    | -55 | +150 | °C    |
| T <sub>O</sub>   | Operating Temperature  | -40 | +125 | °C    |
| T <sub>S</sub>   | 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 <sub>D</sub>  | Dark Current               | V <sub>R</sub> = 5 V             |      | 5.0                   | 27.0 | nA    |
| R <sub>SH</sub> | Shunt Resistance           | V <sub>R</sub> = 10 mV           | 100  |                       |      | MΩ    |
| C <sub>J</sub>  | Junction Capacitance       | V <sub>R</sub> = 0 V, f = 1 MHz  |      | 375                   |      | pF    |
|                 |                            | V <sub>R</sub> = 5 V, f = 1 MHz  |      | 75                    |      |       |
| λ range         | Spectral Application Range | Spot Scan                        | 350  |                       | 1100 | nm    |
| R               | Responsivity               | λ = 633nm, V <sub>R</sub> = 0 V  | 0.32 | 0.36                  |      | A/W   |
|                 |                            | λ = 900nm, V <sub>R</sub> = 0 V  | 0.50 | 0.55                  |      |       |
| V <sub>BR</sub> | Breakdown Voltage          | I = 10 μA                        |      | 50                    |      | V     |
| NEP             | Noise Equivalent Power     | V <sub>R</sub> = 0V @ λ = 950nm  |      | 3.0x10 <sup>-14</sup> |      | W/√Hz |
| t <sub>r</sub>  | Response Time**            | RL = 50 Ω, V <sub>R</sub> = 0 V  |      | 190                   |      | nS    |
|                 |                            | RL = 50 Ω, V <sub>R</sub> = 10 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.