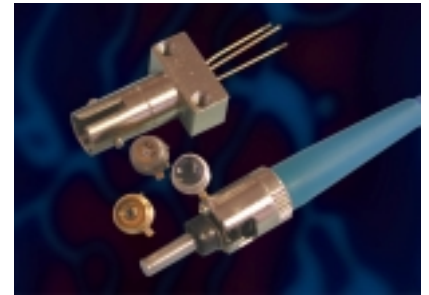




SD0XX-17-51-21X High Speed Si Pin Photodiode



SD0XX-17-51-21X series features 3 high-speed silicon photodiodes that have been specifically developed for the price-sensitive optical communication applications, including fiber-optic LAN, VCSEL-based links, and instrumentation. Designed to be fully depleted at low voltages, the devices offer exceptionally low capacitance and fast responses. Typical speeds are from 200 MHz for the large device up to 1GHz for the smallest active area. Their excellent quantum efficiency, about 70% at 850nm, results in higher sensitivity than that of many comparable devices but even higher QE's are available upon request for the most demanding applications.

All three devices come in rugged, hermetically sealed TO-46 packages that are suitable for fiber couplers like SMA and ST connectors. The user has a choice of flat (-211), domed (-214) or microball window (-218) caps. In addition, almost any fiber connector style is also available upon request. The assemblies are isolated from their housing, thus offering flexibility in biasing and minimized EMI susceptibility.

Features

- 0.2, 0.5 & 1mm active dia.
- High speed, up to 1GHz
- Excellent QE
- Low noise
- Low bias voltage
- Low capacitance
- TO-46 and fiber packages
- Wide operating temp range

Applications

- Optical communication
- High speed radiometry

Electro-Optical Characteristics

@ +23°, $V_b=5V$, unless otherwise noted

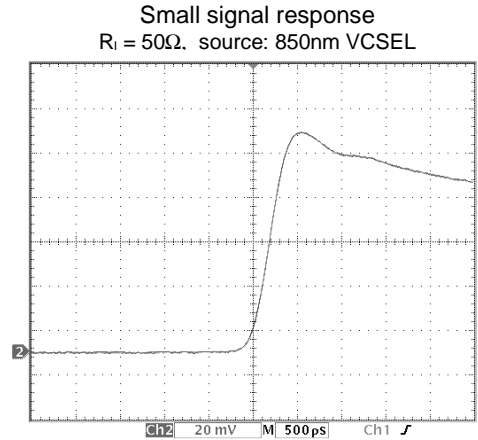
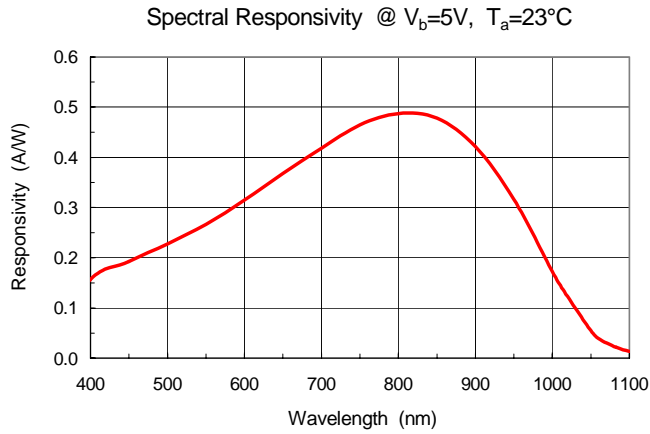
| Device P/N | Active Area Dia. | Dark Current | Capacitance @1MHz | Rise Time | Dark Noise Density |
|-----------------|------------------|--------------|-------------------|-----------|--------------------|
| SD008-17-51-21X | 0.008" (0.2mm) | 0.1 nA | 0.3 pF | 350 ps | 5 fA/√Hz |
| SD020-17-51-21X | 0.020" (0.5mm) | 0.15 nA | 2 pF | 1 ns | 6 fA/√Hz |
| SD040-17-51-21X | 0.040" (1mm) | 0.25 nA | 10 pF | 1.8 ns | 8 fA/√Hz |

Absolute Maximum Ratings*

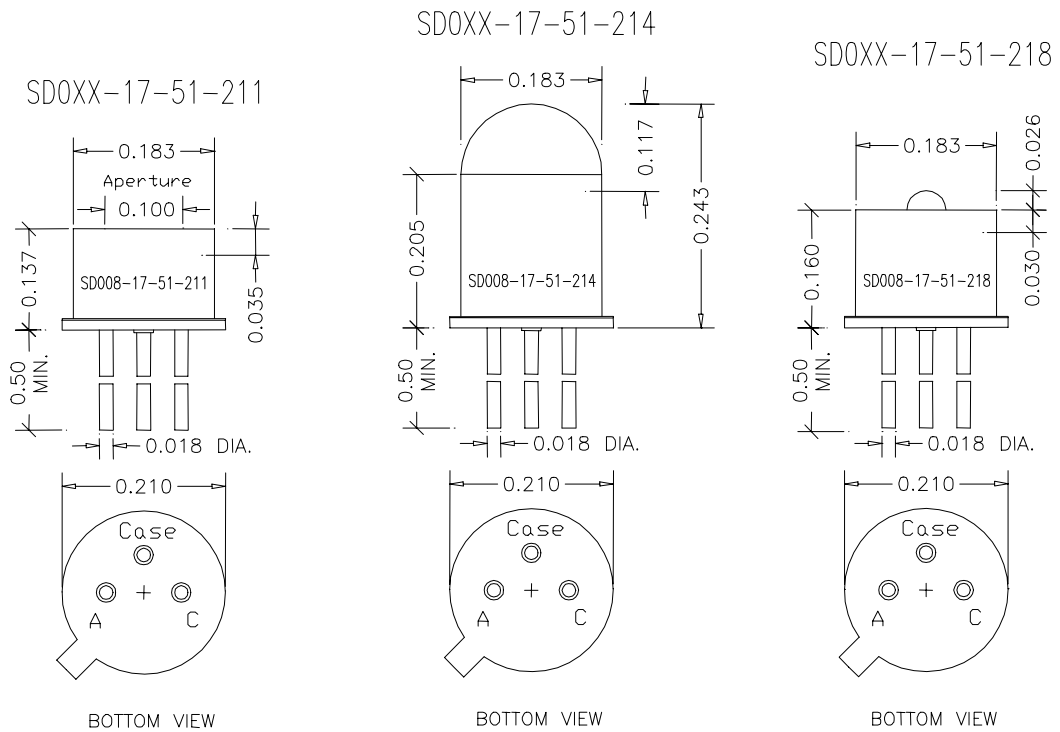
| | |
|-----------------------|----------------------------|
| Storage Temperature | -55°C to +150°C |
| Operating Temperature | -40°C to +125°C |
| Lead Temperature | +300°C (soldering, 10 sec) |
| Reverse Bias Voltage | 25V |

*Operating beyond these limits may cause permanent damage to the device.

Typical Performance Graphs



MECHANICAL DIMENSIONS AND PIN-



All dimensions in inches unless otherwise noted.

API reserves the right to change specifications without notification.