

SD138-11-31-211

Two Color Silicon Photodiode



FEATURES

- Large Active Area
- Low Noise
- High Shunt Resistance
- Hermetically sealed
- High Saturation

DESCRIPTION

The **SD138-11-31-211** device features two silicon PIN photodiodes vertically integrated in a hermetic TO-5 package. The top photodiode absorbs a portion of the light and the remaining light is transmitted to the bottom photodiode. The current ratio of the two photodiodes is used to remotely determine and monitor the color temperature of an object.

APPLICATIONS

- Dual Wavelength Power Meters
- Remote Color Temperature Sensing

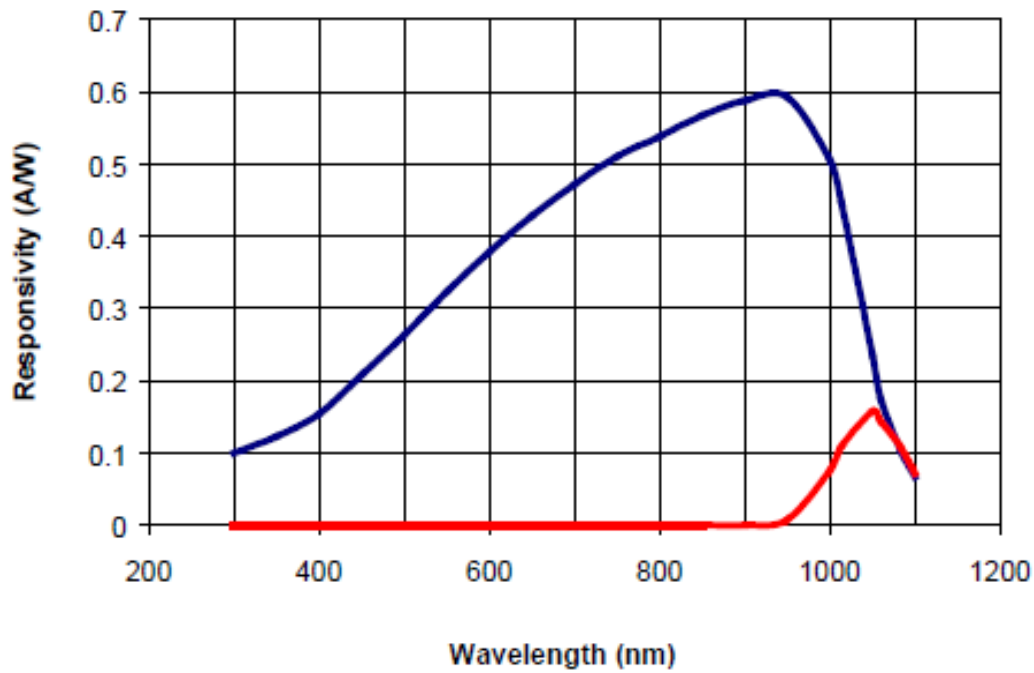
> Absolute Maximum Ratings

| Part No. | Wavelength Range Top [nm] | Wavelength Range Bottom [nm] | Reverse Voltage [V] | Operating Temperature [C] | Storage Temperature [C] | Package |
|-----------------|---------------------------|------------------------------|---------------------|---------------------------|-------------------------|---------|
| SD138-11-31-211 | 300 to 1100 | 950 to 1100 | 25 | -40 to +120 | -55 to +125 | TO-5 |

> Electrical and Optical Characteristics

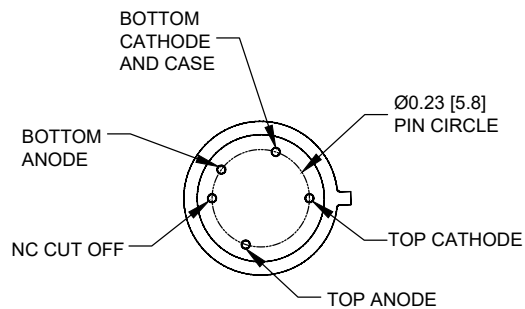
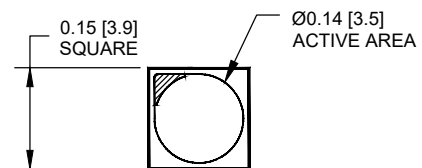
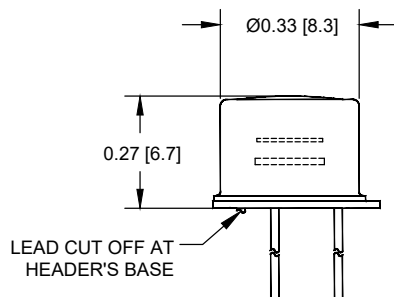
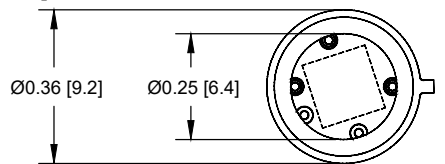
| Typical Characteristics per elements (T=23°C unless specified) | | | | | | |
|--|-----------------------------------|-----------------|------|---------------------|-----------------------|---------------------|
| Parameter | Test Conditions | Symbol | Min | Typical | Max | Unit |
| Active Area Diameter (Top) | | A.A. | - | 3.5 | - | mm |
| Active Area Diameter (Bottom) | | A.A. | - | 3.5 | - | mm |
| Responsivity (Top) | $\lambda = 900$ nm | R | 0.50 | 0.60 | - | A/W |
| Responsivity (Bottom) | $\lambda = 1050$ nm | R | 0.19 | 0.22 | - | A/W |
| Peak NEP (Top) | $\lambda = 900$ nm | NEP | - | 5×10^{-15} | 2×10^{-14} | W/Hz ^{0.5} |
| Peak NEP (Bottom) | $\lambda = 1050$ nm | NEP | - | 9×10^{-15} | 3.3×10^{-14} | W/Hz ^{0.5} |
| Shunt Resistance (Top and Bottom) | V _{bias} = 10 mV | R _{SH} | 80 | 1000 | - | MΩ |
| Capacitance (Top and Bottom) | V _{bias} = 0V; f = 1 MHz | C _J | - | 370 | - | pF |

> Spectral Response



Top Photodiode= Blue
Bottom Photodiode = Red

> Package Dimensions are in inches [mm]



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MATERIALS SAFETY

This product is free of conflict minerals and meets REACH compliance. Please see website for reports.