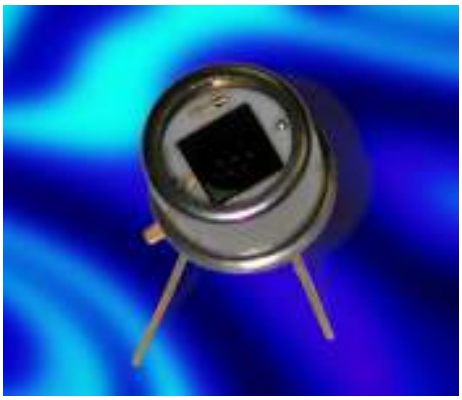
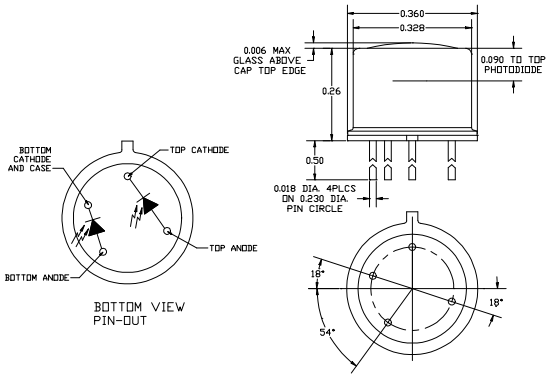
Silicon PIN Photodiode Sandwich Detector

SD 138-11-31-211





CHIP DIMENSIONS INCH [mm] **TO-5 PACKAGE**

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 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.

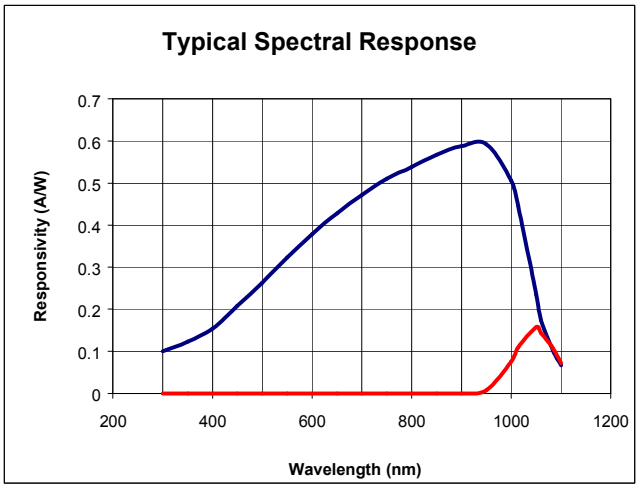
The **SD138-11-31-211** can find application in dual wavelength power meters and remote color temperature sensing.

APPLICATIONS

- Dual Wavelength Power Meters
- Remote Color Temperature Sensing

SYMBOL	PARAMETER	MIN	MAX	UNITS
V_{BR}	Reverse Voltage		25	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.



ELECTRO-OPTICAL CHARACTERISTICS OF TOP AND BOTTOM PHOTODIODES

@ + 23°C AND VOLTS BIAS UNLESS OTHERWISE SPECIFIED

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Active Area Diameter (Top)			3.5		mm
Active Area Diameter (Bottom)			3.1		mm
Spectral Range of (Top)			300 to 1100		nm
Spectral Range of (Bottom)			950 to 1100		nm
Shunt Resistance	Bias: 10mV	50	200		MΩ
Responsivity	Wavelength = 950 nm	0.50	0.60		A/W
Reak NEP (Bottom)	Wavelength = 1050	0.135	0.155		A/W
Peak NEP (Top)	Wavelength = 950		12	25	fw/√Hz
Peak NEP (Bottom)	Wavelength = 1050		45	100	fw/√Hz
Capacitance			290	305	pF
Operating Temperature		-55		+100	ºC
Storage Temperature		-55		+100	ºC

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