EXCELITAS TECHNOLOGIES

SILICON PHOTODIODE
VTD34SMH

FEATURES

- *High sensitivity*
- *Low capacitance*
- *Fast response*
- *Low noise*
- *High shunt impedance*
- *Leads configured for surface mount applications*

PRODUCT DESCRIPTION

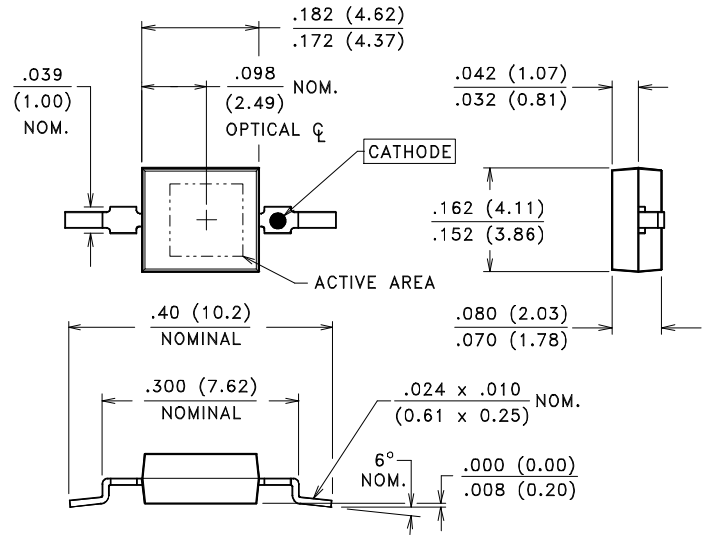
This P on N photodiode is packaged in a transparent plastic package with the leads configured for surface mounting.

These devices are designed to provide excellent sensitivity at low levels of irradiance. Linearity is assured by the high shunt impedance and low series resistance. Due to their low junction capacitance, these devices exhibit fast response, even with relatively high load resistances.

ELECTRO-OPTICAL CHARACTERISTICS @ 25° C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS
SHORT CIRCUIT CURRENT @ 1000 lux, 2850 K	I_{SC}	50	70		µA
RISE / FALL TIME @ 1 kΩ LOAD, V_R = 10 V, 833 nm	t_R / t_F		50		nsec
DARK CURRENT @ V_R = 10 V	I_D		2	30	nA
JUNCTION CAPACITANCE @ 1 MHz, V_R = 3 V	C_J		25	40	pF
ACCEPTANCE ANGLE (BETWEEN 50% RESPONSE)	$\theta_{1/2}$		±50		Degrees
ACTIVE AREA	A		7.45		mm^2

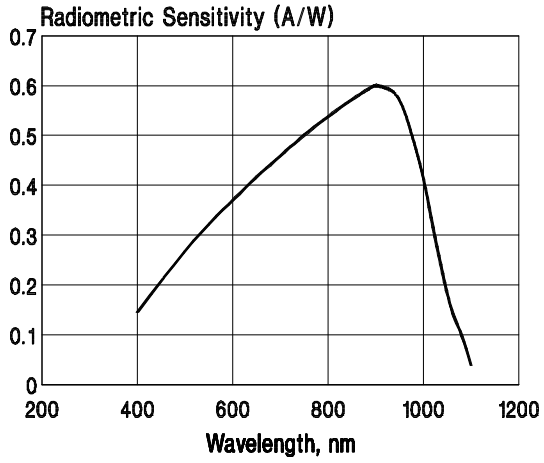
PACKAGE DIMENSIONS inch (mm)



RoHS Compliant

Pb

Spectral Response



VTD34SMDS Rev. D 1001

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GENERAL CHARACTERISTICS

PARAMETER	SYMBOL	TYPICAL RATING	UNITS
OPEN CIRCUIT VOLTAGE @ 1000 lux, 2850 K SOURCE	V_{OC}	365	mV
BREAKDOWN VOLTAGE @ 25°C	V_{BR}	50	V
PEAK SPECTRAL RESPONSE @ 25°C	λpk	900	nm
RADIOMETRIC SENSITIVITY @ PEAK, 25°C	S_{RPK}	0.60	A / W
NOISE EQUIVALENT POWER	NEP	4.8×10^{-14}	$W / \sqrt{Hz}$
SPECIFIC DETECTIVITY	D*	5.7×10^{12}	$cm \sqrt{Hz} / W$
TEMPERATURE COEFFICIENT			
SHORT CIRCUIT CURRENT @ 2850 K SOURCE	TCIL	+0.20	% / °C
OPEN CIRCUIT VOLTAGE @ 2850 K SOURCE	TCOCV	– 2.0	mV / °C
DARK CURRENT	TCID	+15.0	% / °C
TEMPERATURE RANGE			
OPERATING	T_O	– 20 to +80	°C
STORAGE	T_S	– 20 to +80	°C