PerkinElmer™ optoelectronics.

SILICON PHOTODIODE

VTD34FSMH

(BPW 34F INDUSTRY EQUIVALENT)

PRELIMINARY ENGINEERING DATA SHEET

FEATURES

- *Infrared transmiting package*
- *High sensitivity*
- *Low capacitance*
- *Fast response*
- *Low noise*

PRODUCT DESCRIPTION

Planar silicon photodiode in an infrared transmitting, visible blocking molded plastic package.

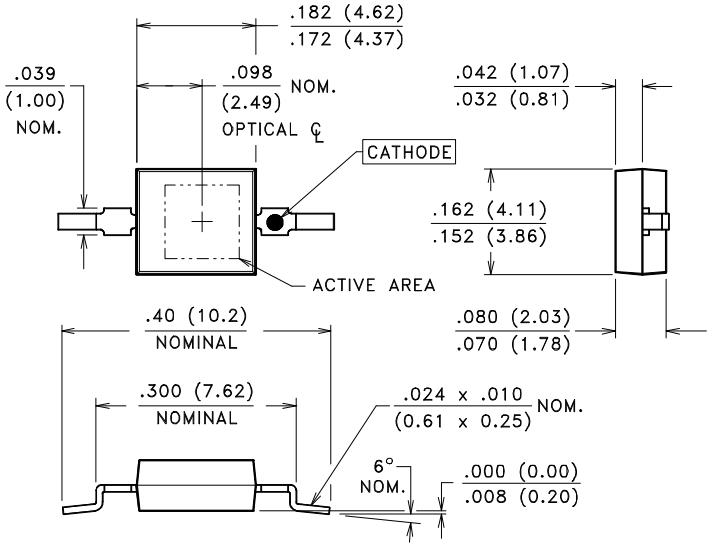
This P on N photodiode is designed to provide excellent sensitivity at low levels of irradiance. Linearity is assured by its high shunt impedance and low series resistance.

Due to their low junction capacitance, these devices exhibit fast response, even with relatively high load resistances.

ELECTRO-OPTICAL CHARACTERISTICS @ 25° C

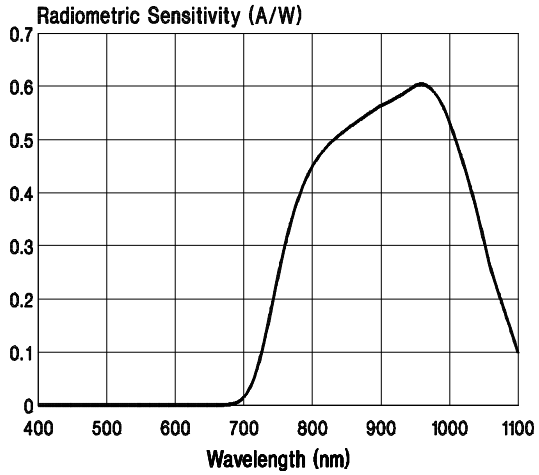
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS
RESPONSIVITY @ 0.5 mW/cm^2, 940 nm	R_e	15			µA
DARK CURRENT @ V_R = 10 V	I_D			30	nA
REVERSE BREAKDOWN VOLTAGE @ 100 µA	V_{BR}	40			Volts
JUNCTION CAPACITANCE @ 1 MHz, V_R = 3 V	C_J			80	pF
RISE / FALL TIME @ 1 kΩ LOAD, V_R = 10 V, 833 nm	t_R / t_F		50		nsec
ACCEPTANCE ANGLE (BETWEEN 50% RESPONSE)	$\theta_{1/2}$		±50		Degrees

PACKAGE DIMENSIONS inch (mm)



CASE 22 MINI-DIP (SURFACE MOUNT)
CHIP SIZE: .120 x .120 (3.05 x 3.05)
EXPOSED ACTIVE AREA: .0115 in^2 (7.42 mm^2)

Spectral Response



VTD34FSMDS Rev. B 10011

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GENERAL CHARACTERISTICS

PARAMETER	SYMBOL	TYPICAL RATING	UNITS
OPEN CIRCUIT VOLTAGE @ 0.5 mW/cm^2, 940 nm	V_{OC}	350	mV
PEAK SPECTRAL RESPONSE @ 25°C	λpk	940	nm
SPECTRAL APPLICATION RANGE	λ_{RANGE}	725 - 1150	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			
OPEN CIRCUIT VOLTAGE @ 2850 K SOURCE	TC V_{OC}	– 2.0	mV / °C
DARK CURRENT	TC I_D	+15.0	%/°C
TEMPERATURE RANGE			
OPERATING	T_O	– 20 to +80	°C
STORAGE	T_S	– 20 to +80	°C