



**SILICON PHOTODIODE**  
**VTD34FSMH**  
 (BPW 34F INDUSTRY EQUIVALENT)

**PRELIMINARY ENGINEERING DATA SHEET**

**FEATURES**

- Infrared transmitting package
- High sensitivity
- Low capacitance
- Fast response
- Low noise

**PRODUCT DESCRIPTION**

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

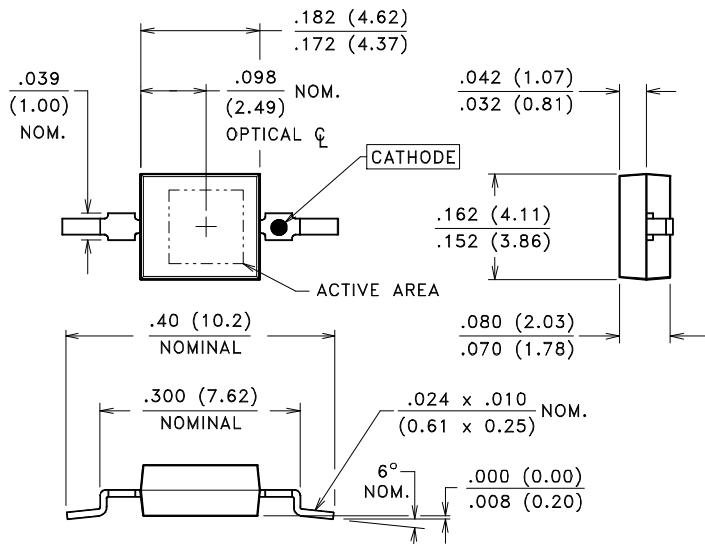
This P on N photodiode is designed to provide excellent sensitivity at low levels of irradiance. Linearity is assured by its high shunt impedance and low series resistance.

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 <sup>2</sup> , 940 nm	R <sub>e</sub>	15			μA
DARK CURRENT @ V <sub>R</sub> = 10 V	I <sub>D</sub>			30	nA
REVERSE BREAKDOWN VOLTAGE @ 100 μA	V <sub>BR</sub>	40			Volts
JUNCTION CAPACITANCE @ 1 MHz, V <sub>R</sub> = 3 V	C <sub>J</sub>			80	pF
RISE / FALL TIME @ 1 kΩ LOAD, V <sub>R</sub> = 10 V, 833 nm	t <sub>r</sub> / t <sub>f</sub>		50		nsec
ACCEPTANCE ANGLE (BETWEEN 50% RESPONSE)	θ <sub>1/2</sub>		±50		Degrees

**PACKAGE DIMENSIONS inch (mm)**

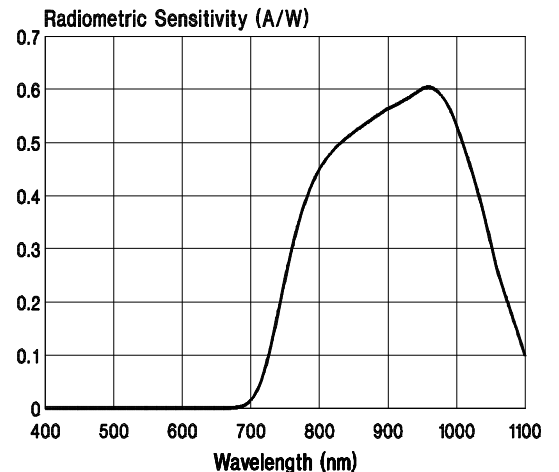


**CASE 22 MINI-DIP (SURFACE MOUNT)**  
 CHIP SIZE: .120 x .120 (3.05 x 3.05)  
 EXPOSED ACTIVE AREA: .0115 in<sup>2</sup> (7.42 mm<sup>2</sup>)

**RoHS Compliant**



**Spectral Response**



**GENERAL CHARACTERISTICS**

PARAMETER	SYMBOL	TYPICAL RATING	UNITS
OPEN CIRCUIT VOLTAGE @ 0.5 mW/cm <sup>2</sup> , 940 nm	V <sub>OC</sub>	350	mV
PEAK SPECTRAL RESPONSE @ 25°C	λ <sub>pk</sub>	940	nm
SPECTRAL APPLICATION RANGE	λ <sub>RANGE</sub>	725 - 1150	nm
RADIOMETRIC SENSITIVITY @ PEAK, 25°C	SRPK	0.60	A / W
NOISE EQUIVALENT POWER	NEP	4.8 x 10 <sup>-14</sup>	W / √Hz
SPECIFIC DETECTIVITY	D*	5.7 x 10 <sup>12</sup>	cm√Hz / W
TEMPERATURE COEFFICIENT OPEN CIRCUIT VOLTAGE @ 2850 K SOURCE DARK CURRENT	TC V <sub>OC</sub> TC I <sub>D</sub>	- 2.0 +15.0	mV / °C % / °C
TEMPERATURE RANGE OPERATING STORAGE	T <sub>O</sub> T <sub>S</sub>	- 20 to +80 - 20 to +80	°C °C

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