PerkinElmer™ optoelectronics.

SILICON PHOTODIODE
VTP8740BTR

FEATURES

- *Surface mount package*
- *Low capacitance*
- *Fast response*
- *High shunt impedance*
- *Tape & reel supplied*

PRODUCT DESCRIPTION

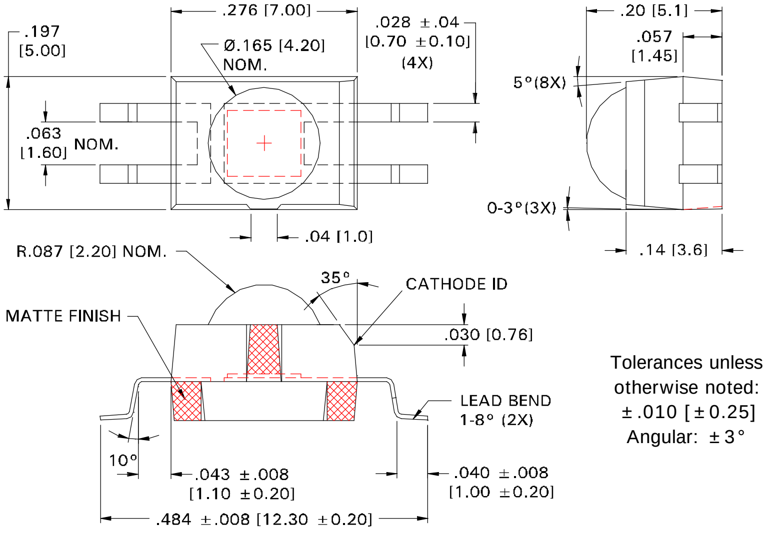
This planar silicon photodiode features a lensed, water clear epoxy package suitable for surface mount assembly in a “back mounted” (lens up) orientation.

These photodiodes exhibit performance characteristics which make them suitable for a wide range of near-IR sensing applications. Devices are shipped taped & reeled on a 24 mm embossed carrier.

ELECTRO-OPTICAL CHARACTERISTICS @ 25° C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS
SHORT CIRCUIT CURRENT @ 100 fc, 2850 K	I_{SC}	75	90		µA
DARK CURRENT @ V_R = 10 V	I_D			20	nA
SHUNT RESISTANCE @ H = 0, V = 10 mV	R_{SH}		0.25		GΩ
JUNCTION CAPACITANCE @ V_R = 3 V	C_J			50	pF
OPEN CIRCUIT VOLTAGE @ 100 fc, 2850 K	V_{OC}	325			mV
ANGULAR RESPONSE (50% RESPONSE POINT)	$\theta_{1/2}$		±42		Degrees

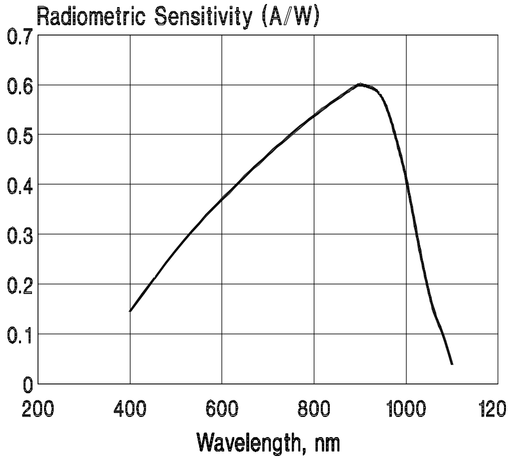
PACKAGE DIMENSIONS inch (mm)



Tolerances unless otherwise noted:
±.010 [±0.25]
Angular: ±3°

CHIP SIZE: .100 x .116 (2.54 x 2.94)
EXPOSED ACTIVE AREA: .0082 in^2 (5.269 mm^2)

TYPICAL SPECTRAL RESPONSE



GENERAL CHARACTERISTICS

PARAMETER	SYMBOL	TYPICAL RATING	UNITS
PEAK SPECTRAL RESPONSE @ 25°C	λ_P	925	nm
RADIOMETRIC SENSITIVITY @ PEAK, 25°C	S_{RPK}	0.6	A / W
NOISE EQUIVALENT POWER	NEP	2.0×10^{-13}	$W/\sqrt{Hz}$
SPECIFIC DETECTIVITY	D*	1.2×10^{12}	$cm\sqrt{Hz}/W$
TEMPERATURE COEFFICIENT			
SHORT CIRCUIT CURRENT @ 2850 K SOURCE	TC I_{SC}	+0.22	%/°C
OPEN CIRCUIT VOLTAGE @ 2850 K SOURCE	TC V_{OC}	– 2.0	mV/ C
DARK CURRENT	TC I_D	+15.0	%/°C

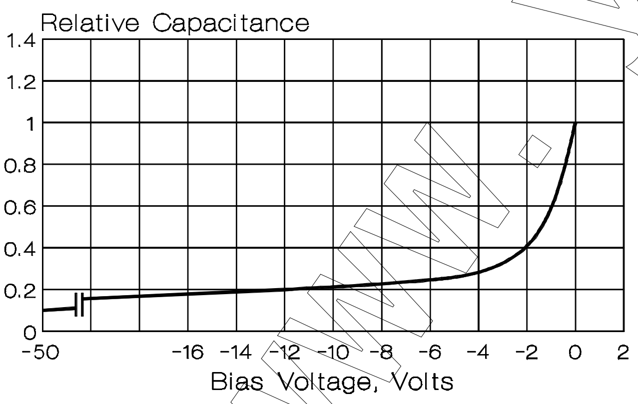
ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATING	UNITS
TEMPERATURE RANGE OPERATING AND STORAGE	T_{AMB}	– 40 to +85	°C
LEAD SOLDER TEMPERATURE (1.6 mm FROM CASE, 5 SECONDS MAX.)	T_{LS}	260°	°C
BREAKDOWN VOLTAGE @ 25°C	V_{BR}	33	Volts
POWER DISSIPATION	P_D	150	mW

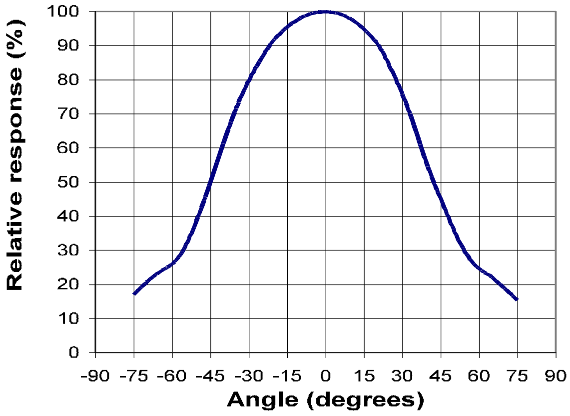
TYPICAL CHARACTERISTIC CURVES

RELATIVE JUNCTION CAPACITANCE vs BIAS VOLTAGE

(REFERRED TO ZERO BIAS)



ANGULAR RESPONSE



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