

# SILICON PHOTODIODE

## VTP8840BTR

## FEATURES

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

## PRODUCT DESCRIPTION

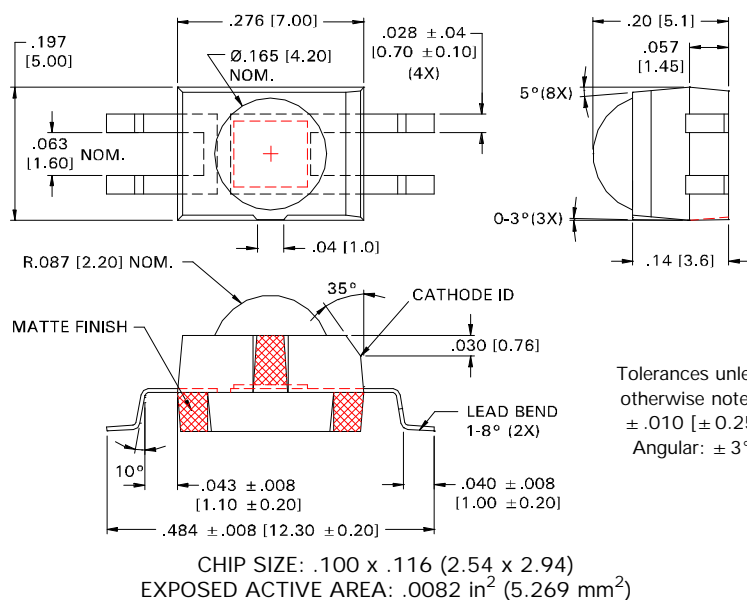
This planar silicon photodiode features a lensed, visible blocking, IR transmitting package suitable for surface mount assembly in a “back mounted” (lens up) orientation.

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.

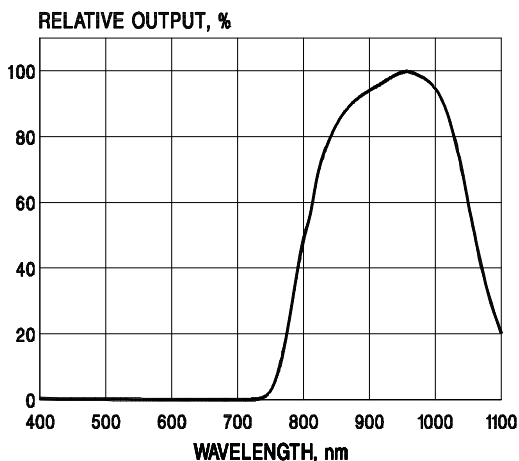
## ELECTRO-OPTICAL CHARACTERISTICS @ 25° C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS
SHORT CIRCUIT CURRENT @ 100 fc, 2850 K	I <sub>SC</sub>	50	60		μA
DARK CURRENT @ V <sub>R</sub> = 10 V	I <sub>D</sub>			20	nA
SHUNT RESISTANCE @ H = 0, V = 10 mV	R <sub>SH</sub>		0.25		GΩ
JUNCTION CAPACITANCE @ V <sub>R</sub> = 3 V	C <sub>J</sub>			50	pF
OPEN CIRCUIT VOLTAGE @ 100 fc, 2850 K	V <sub>OC</sub>	325			mV
ANGULAR RESPONSE (50% RESPONSE POINT)	θ <sub>1/2</sub>		±42		Degrees

## PACKAGE DIMENSIONS



## TYPICAL SPECTRAL RESPONSE



## GENERAL CHARACTERISTICS

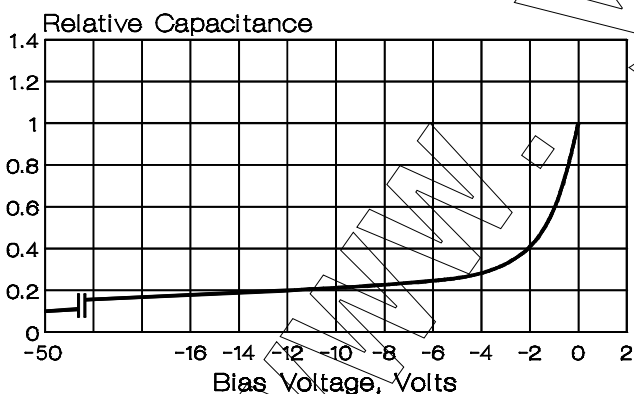
PARAMETER	SYMBOL	TYPICAL RATING	UNITS
PEAK SPECTRAL RESPONSE @ 25°C	$\lambda_P$	925	nm
RADIOMETRIC SENSITIVITY @ PEAK, 25°C	SRPK	0.6	A / W
NOISE EQUIVALENT POWER	NEP	$2.0 \times 10^{-13}$	W/ $\sqrt{\text{Hz}}$
SPECIFIC DETECTIVITY	D*	$1.2 \times 10^{12}$	cm $\sqrt{\text{Hz}}$ / W
TEMPERATURE COEFFICIENT			
SHORT CIRCUIT CURRENT @ 2850 K SOURCE	TC I <sub>SC</sub>	+0.22	%/°C
OPEN CIRCUIT VOLTAGE @ 2850 K SOURCE	TC V <sub>OC</sub>	-2.0	mV/ °C
DARK CURRENT	TC I <sub>D</sub>	+15.0	%/°C

## ABSOLUTE MAXIMUM RATINGS

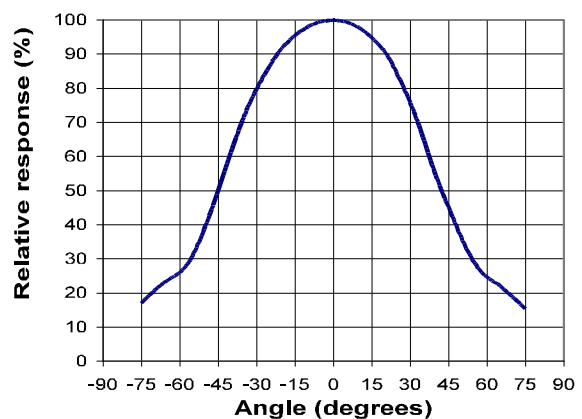
PARAMETER	SYMBOL	RATING	UNITS
TEMPERATURE RANGE OPERATING AND STORAGE	T <sub>AMB</sub>	-40 to +85	°C
LEAD SOLDER TEMPERATURE (1.6 mm FROM CASE, 5 SECONDS MAX.)	T <sub>LS</sub>	260°	°C
BREAKDOWN VOLTAGE @ 25°C	V <sub>BR</sub>	33	Volts
POWER DISSIPATION	P <sub>D</sub>	150	mW

## TYPICAL CHARACTERISTIC CURVES

RELATIVE JUNCTION CAPACITANCE vs BIAS VOLTAGE  
(REFERRED TO ZERO BIAS)



ANGULAR RESPONSE



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