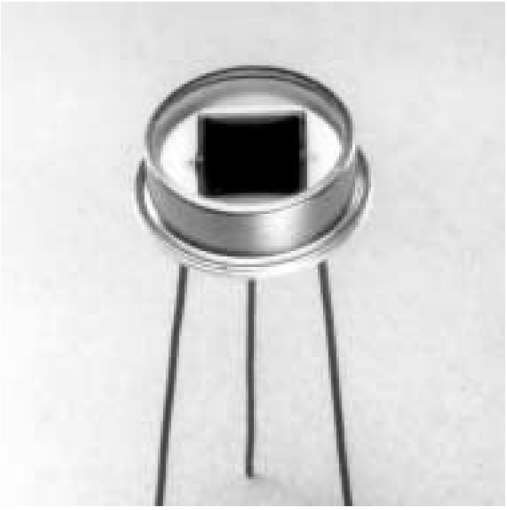
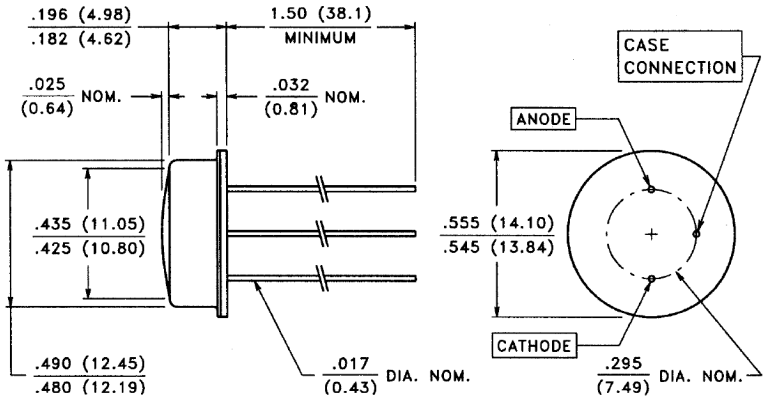
VTB Process Photodiodes

VTB6061UVJH



PACKAGE DIMENSIONS inch (mm)



CASE 15A TO-8 HERMETIC
CHIP ACTIVE AREA: .058 in^2 (37.7 mm^2)

PRODUCT DESCRIPTION

Large area planar silicon photodiode in a three lead TO-8 package with a UV transmitting window. Chip is isolated from case. Third lead is grounded to case. These diodes have very high shunt resistance and have good blue response.

ABSOLUTE MAXIMUM RATINGS

Storage Temperature:	-40°C to 110°C
Operating Temperature:	-40°C to 110°C

RoHS Compliant

ELECTRO-OPTICAL CHARACTERISTICS @ 25°C (See also VTB curves, pages 21-22)

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	VTB6061UVJH			UNITS
			Min.	Typ.	Max.	
I_{SC}	Short Circuit Current	H = 100 fc, 2850 K	260	350		µA
TC I_{SC}	I_{SC} Temperature Coefficient	2850 K		.12	.23	%/°C
V_{OC}	Open Circuit Voltage	H = 100 fc, 2850 K		490		mV
TC V_{OC}	V_{OC} Temperature Coefficient	2850 K		-2.0		mV/°C
I_D	Dark Current	H = 0, VR = 2.0 V			2.0	nA
R_{SH}	Shunt Resistance	H = 0, V = 10 mV		.10		GΩ
TC R_{SH}	R_{SH} Temperature Coefficient	H = 0, V = 10 mV		-8.0		%/°C
C_J	Junction Capacitance	H = 0, V = 0		8.0		nF
S_R	Sensitivity	365 nm		.10		A/W
S_R	Sensitivity	220 nm	.04			A/W
λ_{range}	Spectral Application Range		200		1100	nm
λ_p	Spectral Response - Peak			920		nm
V_{BR}	Breakdown Voltage		2	40		V
$\theta_{1/2}$	Angular Resp. - 50% Resp. Pt.			±55		Degrees
NEP	Noise Equivalent Power			5.7×10^{-14} (Typ.)		$W/\sqrt{Hz}$
D*	Specific Detectivity			1.1×10^{13} (Typ.)		$cm\sqrt{Hz}/W$

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VTB PROCESS
BLUE ENHANCED, ULTRA HIGH DARK RESISTANCE

FEATURES

- *Enhanced UV to IR spectral range*
- *Integral IR rejection filters available*
- *Response @ 220 nm, 0.06 A/W, typical with UV window*
- *Response @ 365 nm, 0.14 A/W typical*
- *High open circuit voltage @ low light levels*
- *1 to 2% linearity over 7 to 9 decades*
- *Very low dark current & high shunt resistance*

PRODUCT DESCRIPTION

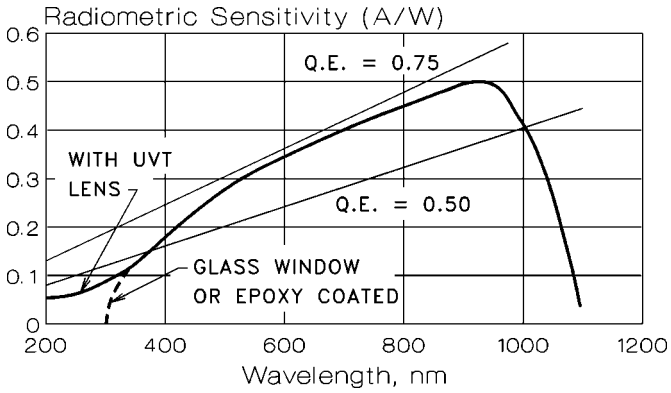
This series of P on N silicon planar photodiodes have been designed to maximize their response through the visible part of the spectrum. Those units with UV transmitting windows also exhibit excellent response in the UV region and are characterized at 220 nm.

"B" series devices have a built-in infrared rejection filter for those applications where a detector is needed that approximates the human eye. Typical transmission of wavelengths greater than 750 nm is less than 3% when measured with an incandescent source operating at 2850 K.

Diodes made with the VTB process are primarily intended for use in the photovoltaic mode but may be used with a small reverse bias. All photodiodes in this series exhibit very high shunt resistance. This characteristic leads to very low offsets when the diodes are used in high gain transimpedance op-amp circuits.

TYPICAL CHARACTERISTIC CURVES @ 25°C (UNLESS OTHERWISE NOTED)

Absolute Spectral Response



Absolute Spectral Response "B" Series (Filtered)