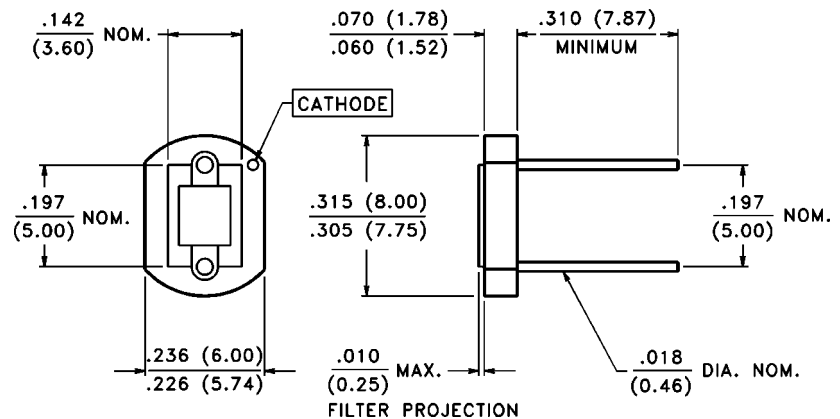


PACKAGE DIMENSIONS inch (mm)



CASE 21F 8 mm CERAMIC
CHIP ACTIVE AREA: .008 in² (5.16 mm²)

PRODUCT DESCRIPTION

Planar silicon photodiode in recessed ceramic package. The package incorporates an infrared rejection filter. These diodes have very high shunt resistance and have good blue response.

ABSOLUTE MAXIMUM RATINGS

Storage Temperature:	-20°C to 75°C
Operating Temperature:	-20°C to 75°C

ELECTRO-OPTICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	VTB8440B			VTB8441B			UNITS
			Min.	Typ.	Max.	Min.	Typ.	Max.	
I _{SC}	Short Circuit Current	H = 100 fc, 2850 K	4	5		4	5		μA
TC I _{SC}	I _{SC} Temperature Coefficient	2850 K		.02	.08		.02	.08	%/°C
V _{OC}	Open Circuit Voltage	H = 100 fc, 2850 K		420			420		mV
TC V _{OC}	V _{OC} Temperature Coefficient	2850 K		-2.0			-2.0		mV/°C
I _D	Dark Current	H = 0, VR = 2.0 V			2000			100	pA
R _{SH}	Shunt Resistance	H = 0, V = 10 mV		.07			1.4		GΩ
TC R _{SH}	R _{SH} Temperature Coefficient	H = 0, V = 10 mV		-8.0			-8.0		%/°C
C _J	Junction Capacitance	H = 0, V = 0		1.0			1.0		nF
λ _{range}	Spectral Application Range		330		720	330		720	nm
λ _p	Spectral Response - Peak			580			580		nm
V _{BR}	Breakdown Voltage		2	40		2	40		V
θ _{1/2}	Angular Resp. - 50% Resp. Pt.			±50			±50		Degrees
NEP	Noise Equivalent Power		1.1 x 10 ⁻¹³ (Typ.)			2.4 x 10 ⁻¹⁴ (Typ.)			W/√Hz
D*	Specific Detectivity		2.2 x 10 ¹² (Typ.)			9.7 x 10 ¹² (Typ.)			cm√Hz / W

VTB Process Photodiodes

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

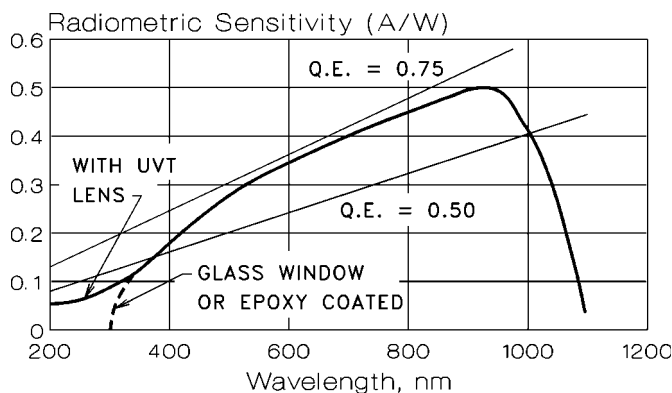
This series of P on N silicon planar photodiodes have been designed to maximize their response through the visible part of the spectrum. Those units with UV transmitting windows also exhibit excellent response in the UV region and are characterized at 220 nm.

"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.

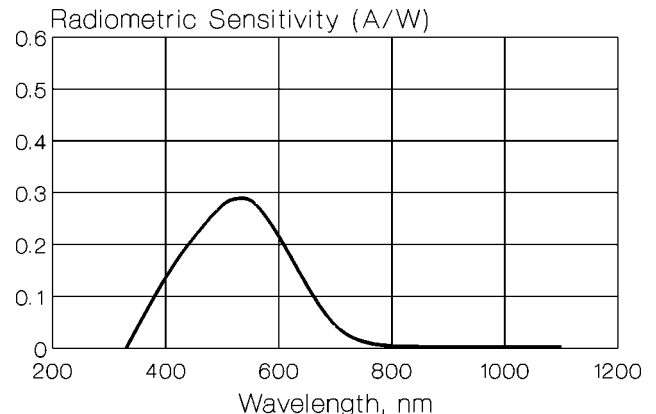
Diodes made with the VTB process are primarily intended for use in the photovoltaic mode but may be used with a small reverse bias. All photodiodes in this series exhibit very high shunt resistance. This characteristic leads to very low offsets when the diodes are used in high gain transimpedance op-amp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

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

Absolute Spectral Response

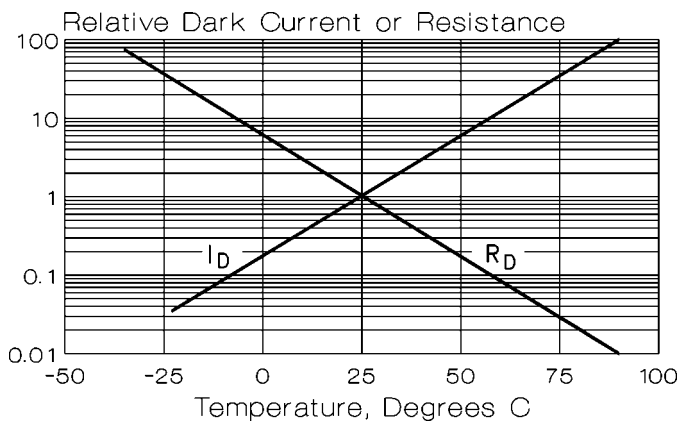


Absolute Spectral Response "B" Series (Filtered)

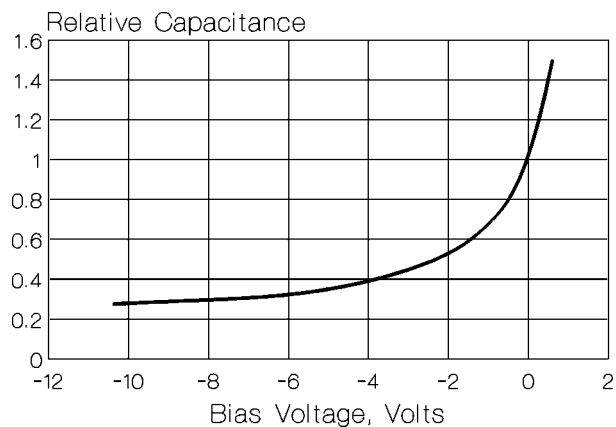


VTB Process Photodiodes

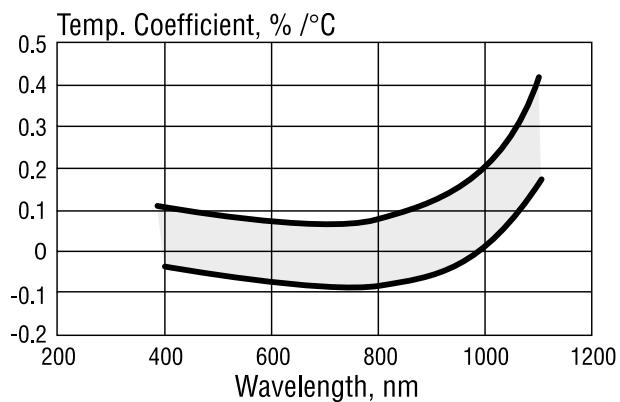
Relative Dark Current or Resistance
vs. Temperature
(Referred To 25°C)



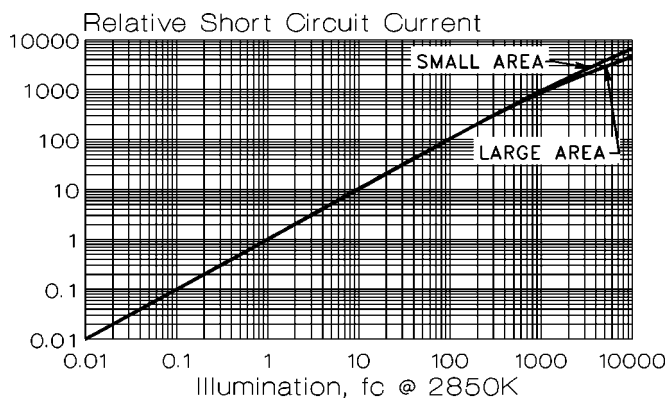
Relative Junction Capacitance
vs. Voltage
(Referred To Zero Bias)



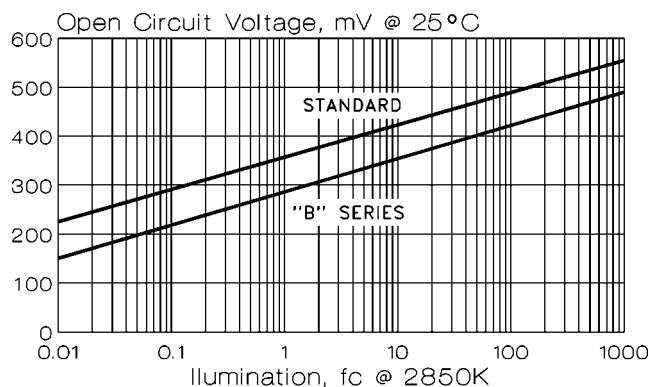
Temperature Coefficient of
Light Current vs. Wavelength



Relative Short Circuit Current
vs. Illumination



Open Circuit Voltage vs Illumination



Rise/fall Times - Non Standard

