VTS Process Photodiodes

VTS_ _80, 82, 85

PRODUCT DESCRIPTION

This series of planar, P on N, large area silicon photodiodes is characterized for use in the photovoltaic (unbiased) mode. Their excellent speed and broadband sensitivity makes them ideal for detecting light from a variety of sources such as LEDs, IREDs, flashtubes, incandescent lamps, lasers, etc. Improved shunt resistance minimizes amplifier offset and drift in high gain systems. The solderable contact system on these photodiodes provides a cost effective design solution for many applications.

ABSOLUTE MAXIMUM RATINGS

Storage Temperature:

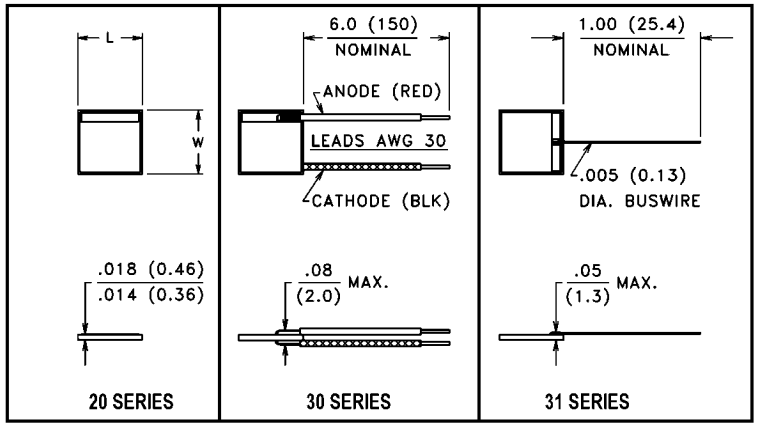
-40°C to 150°C	Series 20, 31
-40°C to 105°C	Series 30

Operating Temperature:

-40°C to 125°C	Series 20, 31
-40°C to 105°C	Series 30

Reverse Voltage: 6.0 Volts

PACKAGE DIMENSIONS inch (mm)



CASE 44A
ANODE (ACTIVE) SURFACE SHOWN
CATHODE IS BACKSIDE

DIMENSIONS	VTS__80	VTS__82	VTS__85
L	.800 (20.32)	.400 (10.16)	.200 (5.08)
W	.800 (20.32)	.400 (0.16)	.200 (5.08)
ACTIVE AREA	$.607^2$ (392^2)	$.144^2$ (93^2)	$.032^2$ (21^2)

ELECTRO-OPTICAL CHARACTERISTICS @ 25°C (See also VTS curves, page 67)

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	VTS__80			VTS__82			VTS__85			UNITS
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
I_{SC}	Short Circuit Current	H = 1000 lux, 2850 K	2.30	3.00		0.55	0.69		0.13	0.16		mA
TC I_{SC}	I_{SC} Temperature Coefficient	H = 1000 Lux, 2850 K		0.20			0.20			0.20		%/°C
I_D	Dark Current	H = 0, VR = 100 mV		0.2	1.0		0.05	0.2		0.02	0.1	µA
TC I_D	ID Temp. Coefficient	H = 0, VR = 100 mV		+11			+11			+11		%/°C
R_{SH}	Shunt Resistance	H = 0, VR = 10 mV		0.3			1.2			3.0		MΩ
C_J	Junction Capacitance	H = 0, V = 0 V, 1 MHz		7.5			1.75			0.50		nF
S_R	Sensitivity	@ 400 nm	.18	0.20		0.18	0.20		0.18	0.20		A/W
Re	Responsivity	400 nm, 0.18 A/W		0.70			0.16			0.04		A/(W/cm^2)
TC V_{OC}	Sensitivity @ Peak	925 nm		0.60			0.60			0.60		A/W
t_R/t_F	Response Time @ 1 kΩ Load	VR = 1 V, 830 nm		13			3.4			1.2		µsec
V_{OC}	Open Circuit Voltage	H = 1000 Lux, 2850 K	0.25	0.45		0.25	0.45		0.25	0.45		Volts
TC V_{OC}	V_{OC} Temperature Coefficient	H = 1000 Lux, 2850 K		-2.6			-2.6			-2.6		mV/°C

VTS Process Photodiodes

VTS PROCESS
LOW CAPACITANCE, LARGE AREA PHOTODIODE

FEATURES

- *Visible to IR spectral range*
- *Excellent QE - 400 to 1100 nm*
- *Guaranteed 400 nm response*
- *Response @ 940 nm, 0.60 A/W, typical*
- *Useable with visible and IR LEDs*
- *Better than 1% linearity over four decades of illumination*
- *Moderate shunt resistance*
- *Low capacitance*
- *Fast response*
- *Choice of three styles:*
  bare chip
  6" flying leads
  1" anode buss wire
- *Large area cells*
- *Solderable contacts*

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Part Numbering System For VTS Process Unmounted Cells

VTS__XX

Last two digits identify chip size and process

VTS20XX Bare chip with no wires or coating.

VTS30XX Chip with red and black AWG#30, insulated, flexible wires soldered to the contacts.

VTS31XX Chip with a buss wire soldered to the topside contact.

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