BPV10

Vishay Semiconductors



Silicon PIN Photodiode



FEATURES

- Package type: leaded
- Package form: T-1¾
- Dimensions (in mm): Ø 5
- Leads with stand-off
- · High photo sensitivity
- High sensitivity
- Suitable for visible and near infrared radiation
- Fast response times
- Angle of half sensitivity: $\phi = \pm 20^{\circ}$
- Material categorization: for definitions of compliance please see <u>www.vishav.com/doc?99912</u>

DESCRIPTION

BPV10 is a PIN photodiode with high speed and high sensitivity in clear, T-1¾ plastic package. It is sensitive to visible and near infrared radiation.

APPLICATIONS

• High speed photo detector

PRODUCT SUMMARY					
COMPONENT	I _{ra} (μΑ) φ (°)		λ _{0.1} (nm)		
BPV10	70	± 20	380 to 1100		

Note

• Test condition see table "Basic Characteristics"

ORDERING INFORMATION					
ORDERING CODE	PACKAGING	REMARKS	PACKAGE FORM		
BPV10	Bulk	MOQ: 4000 pcs, 4000 pcs/bulk	T-1¾		

Note

• MOQ: minimum order quantity

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Reverse voltage		V _R	60	V	
Power dissipation	T _{amb} ≤ 25 °C	Pv	215	mW	
Junction temperature		Тj	100	°C	
Operating temperature range		T _{amb}	-40 to +100	°C	
Storage temperature range		T _{stg}	-40 to +100	°C	
Soldering temperature	$t \le 5$ s, 2 mm from body	T _{sd}	260	°C	
Thermal resistance junction to ambient	Connected with Cu wire, 0.14 mm ²	R _{thJA}	350	K/W	





FREE

<u>GREEN</u>

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PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 50 mA	VF	-	1.0	1.3	V
Breakdown voltage	I _R = 100 μA, E = 0	V _(BR)	60	-	-	V
Reverse dark current	V _R = 20 V, E = 0	I _{ro}	-	0.1	5	nA
Diode capacitance	V _R = 0 V, f = 1 MHz, E = 0	CD	-	11	-	pF
	$V_{R} = 5 V, f = 1 MHz, E = 0$	CD	-	3.8	-	pF
Open circuit voltage	E _A = 1 klx	Vo	-	480	-	mV
	$E_e = 1 \text{ mW/cm}^2$, $\lambda = 950 \text{ nm}$	Vo	-	450	-	mV
Short circuit current	E _A = 1 klx	I _K	-	80	-	μA
	$E_e = 1 \text{ mW/cm}^2$, $\lambda = 950 \text{ nm}$	I _K	-	65	-	μA
Reverse light current	$E_A = 1 \text{ klx}, V_R = 5 \text{ V}$	I _{ra}	-	85	-	μA
	$E_e = 1 \text{ mW/cm}^2, \lambda = 950 \text{ nm}, \\ V_R = 5 \text{ V}$	I _{ra}	38	70	-	μA
Absolute spectral sensitivity	$V_{\rm R} = 5 \text{ V}, \ \lambda = 950 \text{ nm}$	s(λ)	-	0.55	-	A/W
Angle of half sensitivity		φ	-	± 20	-	0
Wavelength of peak sensitivity		λρ	-	920	-	nm
Range of spectral bandwidth		λ _{0.1}	-	380 to 1100	-	nm
Quantum efficiency	$\lambda = 950 \text{ nm}$	η	-	72	-	%
Noise equivalent power	$V_{R} = 20 V, \lambda = 950 nm$	NEP	-	3 x 10 ⁻¹⁴	-	W/√Hz
Detectivity	$V_{R} = 20 V, \lambda = 950 nm$	D	-	3 x 10 ¹²	-	cm√Hz/\
Rise time	V_R = 10 V, R_L = 50 Ω , λ = 830 nm	tr	-	80	-	ns
Fall time	$V_{B} = 10 V, R_{I} = 50 \Omega, \lambda = 830 nm$	t _f	-	60	-	ns

BASIC CHARACTERISTICS (Tamb = 25 °C, unless otherwise specified)

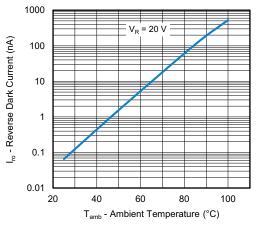


Fig. 1 - Reverse Dark Current vs. Ambient Temperature

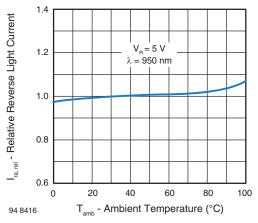


Fig. 2 - Relative Reverse Light Current vs. Ambient Temperature

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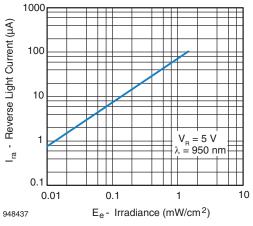


Fig. 3 - Reverse Light Current vs. Irradiance

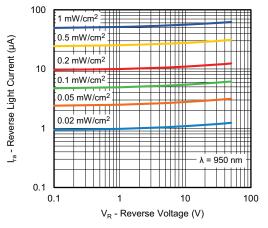
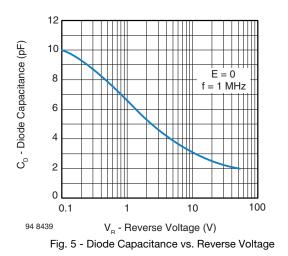


Fig. 4 - Reverse Light Current vs. Reverse Voltage



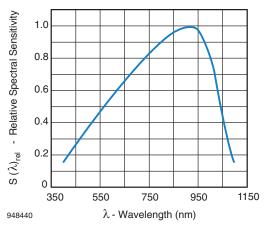


Fig. 6 - Relative Spectral Sensitivity vs. Wavelength

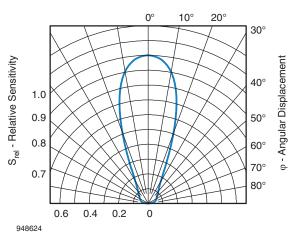


Fig. 7 - Relative Sensitivity vs. Angular Displacement

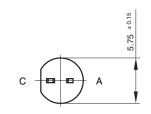
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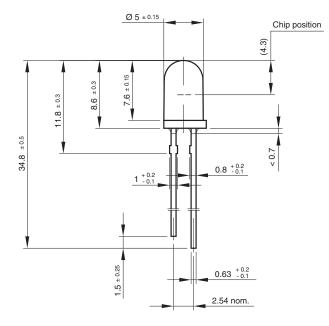
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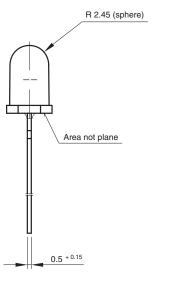


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PACKAGE DIMENSIONS in millimeters









technical drawings according to DIN specifications

Drawing-No.: 6.544-5185.02-4 Issue:1; 01.07.96 96 12199



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