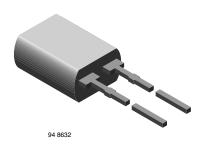


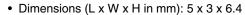
Silicon PIN Photodiode



FEATURES

Package type: leaded





• Radiant sensitive area (in mm²): 7.5

· High photo sensitivity

· High radiant sensitivity

• Suitable for visible and near infrared radiation

• Fast response times

• Angle of half sensitivity: $\varphi = \pm 65^{\circ}$

 Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>



GREEN

DESCRIPTION

BPW46 is a PIN photodiode with high speed and high radiant sensitivity in a clear, side view plastic package. It is sensitive to visible and near infrared radiation.

APPLICATIONS

· High speed photo detector

PRODUCT SUMMARY			
COMPONENT	I _{ra} (μΑ)	φ (deg)	λ _{0.1} (nm)
BPW46	50	± 65	430 to 1100

Note

· Test condition see table "Basic Characteristics"

ORDERING INFORMATION				
ORDERING CODE	PACKAGING	REMARKS	PACKAGE FORM	
BPW46	Bulk	MOQ: 4000 pcs, 4000 pcs/bulk	Side view	

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	P _V	215	mW	
Junction temperature		T _j	100	°C	
Operating temperature range		T _{amb}	-40 to +100	°C	
Storage temperature range		T _{stg}	-40 to +100	°C	
Soldering temperature	t ≤ 5 s	T _{sd}	260	°C	
Thermal resistance junction/ambient	Connected with Cu wire, 0.14 mm ²	R _{thJA}	350	K/W	



PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Breakdown voltage	$I_R = 100 \mu A, E = 0$	V _(BR)	60			V
Reverse dark current	V _R = 10 V, E = 0	I _{ro}		2	30	nA
Diada assaultanas	V _R = 0 V, f = 1 MHz, E = 0	C _D		70		pF
Diode capacitance	V _R = 3 V, f = 1 MHz, E = 0	C _D		25	40	pF
Open circuit voltage	$E_{e} = 1 \text{ mW/cm}^{2}, \lambda = 950 \text{ nm}$	Vo		350		mV
Temperature coefficient of Vo	$E_{e} = 1 \text{ mW/cm}^{2}, \lambda = 950 \text{ nm}$	TK _{Vo}		-2.6		mV/K
Short circuit current	E _A = 1 klx	I _k		70		μA
	$E_e = 1 \text{ mW/cm}^2, \lambda = 950 \text{ nm}$	I _k		47		μA
Temperature coefficient of I _k	$E_{e} = 1 \text{ mW/cm}^{2}, \lambda = 950 \text{ nm}$	TK _{lk}		0.1		%/K
	E _A = 1 klx, V _R = 5 V	I _{ra}		75		μA
Reverse light current	$E_e = 1 \text{ mW/cm}^2, \lambda = 950 \text{ nm},$ $V_R = 5 \text{ V}$	I _{ra}	40	50		μΑ
Angle of half sensitivity		φ		± 65		deg
Wavelength of peak sensitivity		λ_{p}		900		nm
Range of spectral bandwidth		λ _{0.1}		430 to 1100		nm
Noise equivalent power	$V_R = 10 \text{ V}, \lambda = 950 \text{ nm}$	NEP		4 x 10 ⁻¹⁴		W/√Hz
Rise time	$V_R = 10 \text{ V}, R_L = 1 \text{ k}\Omega, \lambda = 820 \text{ nm}$	t _r		100		ns
Fall time	$V_R = 10 \text{ V}, R_L = 1 \text{ k}\Omega, \lambda = 820 \text{ nm}$	t _f		100		ns

BASIC CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

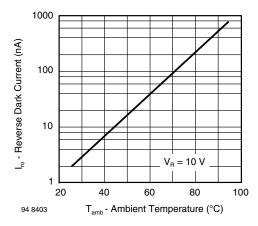


Fig. 1 - Reverse Dark Current vs. Ambient Temperature

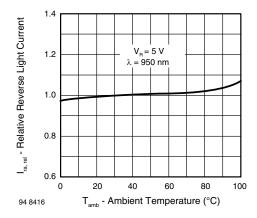


Fig. 2 - Relative Reverse Light Current vs. Ambient Temperature





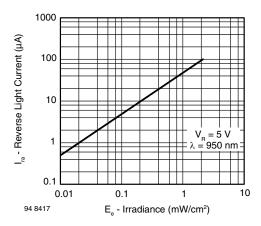


Fig. 3 - Reverse Light Current vs. Irradiance

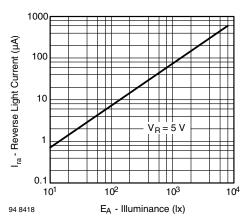


Fig. 4 - Reverse Light Current vs. Illuminance

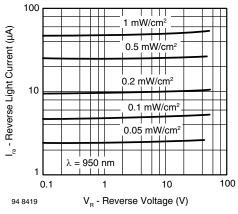


Fig. 5 - Reverse Light Current vs. Reverse Voltage

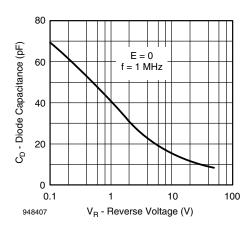


Fig. 6 - Diode Capacitance vs. Reverse Voltage

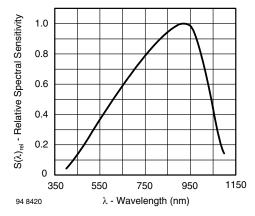


Fig. 7 - Relative Spectral Sensitivity vs. Wavelength

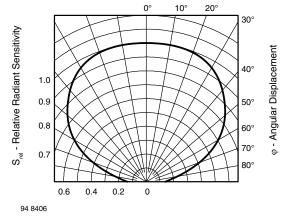
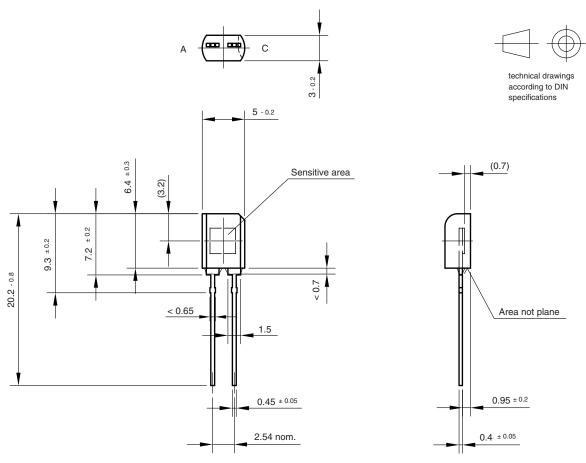


Fig. 8 - Relative Radiant Sensitivity vs. Angular Displacement

PACKAGE DIMENSIONS in millimeters



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