Vishay Semiconductors

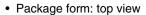


Silicon PIN Photodiode, RoHS Compliant



FEATURES

Package type: leaded



• Dimensions (L x W x H in mm): 5.4 x 4.3 x 3.2

• 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: $\phi = \pm 65^{\circ}$
- Lead (Pb)-free component in accordance with RoHS 2002/95/EC and WEEE 2002/96/EC



· High speed photo detector

DESCRIPTION

BPW34 is a PIN photodiode with high speed and high radiant sensitivity in miniature, flat, top view, clear plastic package. It is sensitive to visible and near infrared radiation. BPW34S is packed in tubes, specifications like BPW34.

PRODUCT SUMMARY			
COMPONENT	I _{ra} (μΑ)	φ (deg)	λ _{0.1} (nm)
BPW34	50	± 65	430 to 1100
BPW34S	50	± 65	430 to 1100

Note

Test condition see table "Basic Characteristics"

ORDERING INFORMATION				
ORDERING CODE	PACKAGING	REMARKS	PACKAGE FORM	
BPW34	Bulk	MOQ: 3000 pcs, 3000 pcs/bulk	Top view	
BPW34S	Tube	MOQ: 1800 pcs, 45 pcs/tube	Top view	

Note

MOQ: minimum order quantity

ABSOLUTE MAXIMUM RATINGS				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V _R	60	V
Power dissipation	T _{amb} ≤ 25 °C	P _V	215	mW
Junction temperature		Tj	100	°C
Operating temperature range		T _{amb}	- 40 to + 100	°C
Storage temperature range		T _{stg}	- 40 to + 100	°C
Soldering temperature	t ≤ 3 s	T _{sd}	260	°C
Thermal resistance junction/ambient	Connected with Cu wire, 0.14 mm ²	R _{thJA}	350	K/W

Note

 T_{amb} = 25 °C, unless otherwise specified





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BASIC CHARACTERISTICS						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Breakdown voltage	I _R = 100 μA, E = 0	V _(BR)	60			V
Reverse dark current	V _R = 10 V, E = 0	I _{ro}		2	30	nA
Diode capacitance	V _R = 0 V, f = 1 MHz, E = 0	C _D		70		pF
	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
Chart aircuit aurrent	E _A = 1 klx	I _k		70		μΑ
Short circuit current	$E_e = 1 \text{ mW/cm}^2, \lambda = 950 \text{ nm}$	I _k		47		μΑ
Temperature coefficient of I _k	$E_e = 1 \text{ mW/cm}^2, \lambda = 950 \text{ nm}$	TK _{Ik}		0.1		%/K
Reverse light current	E _A = 1 klx, V _R = 5 V	I _{ra}		75		μΑ
	$E_e = 1 \text{ mW/cm}^2, \lambda = 950 \text{ nm}, \ V_R = 5 \text{ V}$	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

Note

T_{amb} = 25 °C, unless otherwise specified

BASIC CHARACTERISTICS

 T_{amb} = 25 °C, unless otherwise specified

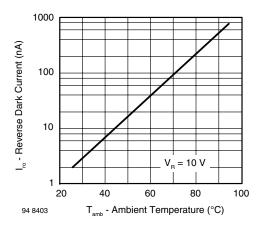


Fig. 1 - Reverse Dark Current vs. Ambient Temperature

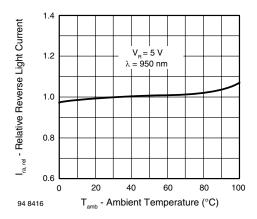


Fig. 2 - Relative Reverse Light Current vs. Ambient Temperature

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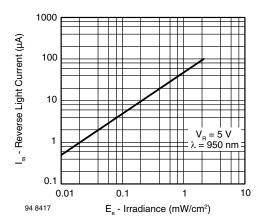


Fig. 3 - Reverse Light Current vs. Irradiance

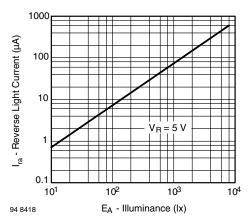


Fig. 4 - Reverse Light Current vs. Illuminance

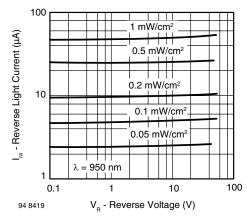


Fig. 5 - Reverse Light Current vs. Reverse Voltage

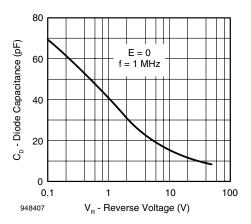


Fig. 6 - Diode Capacitance vs. Reverse Voltage

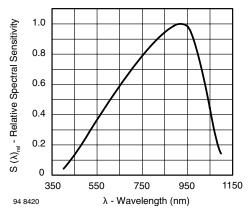


Fig. 7 - Relative Spectral Sensitivity vs. Wavelength

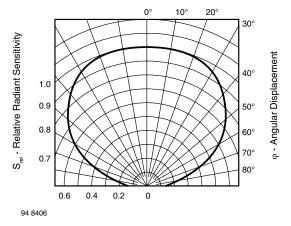


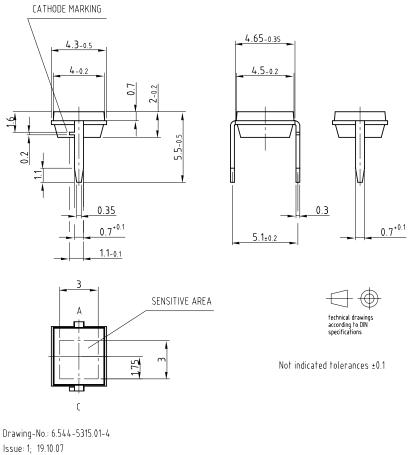
Fig. 8 - Relative Radiant Sensitivity vs. Angular Displacement



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PACKAGE DIMENSIONS in millimeters



96 12186

TUBE PACKAGING DIMENSIONS in millimeters

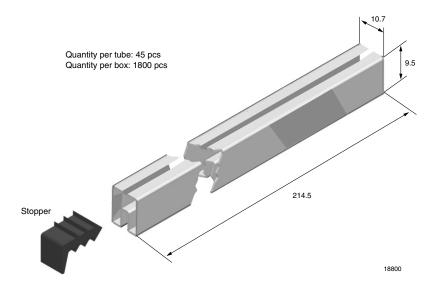


Fig. 9 - Drawing Proportions not scaled



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