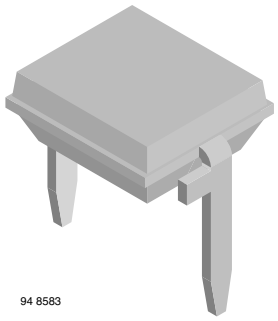
BPW34, BPW34S

Vishay Semiconductors



FEATURES

- Package type: leaded
- Package form: top view
- Dimensions (L x W x H in mm): 5.4 x 4.3 x 3.2
- Radiant sensitive area (in mm^2): 7.5
- High photo sensitivity
- High radiant sensitivity
- Suitable for visible and near infrared radiation
- Fast response times
- Angle of half sensitivity: $\varphi = \pm 65°$
- Lead (Pb)-free component in accordance with RoHS 2002/95/EC and WEEE 2002/96/EC

Pb-free

e3

RoHS COMPLIANT

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.

APPLICATIONS

- High speed photo detector

PRODUCT SUMMARY			
COMPONENT	**I_{ra} (µA)**	**φ (deg)**	**$\lambda_{0.1}$ (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	$T_{amb} \leq 25$ °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	$t \leq 3$ 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

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 mW/cm², λ = 950 nm	V_o		350		mV
Temperature coefficient of V_o	E_e = 1 mW/cm², λ = 950 nm	TK_{Vo}		- 2.6		mV/K
Short circuit current	E_A = 1 klx	I_k		70		µA
	E_e = 1 mW/cm², λ = 950 nm	I_k		47		µA
Temperature coefficient of I_k	E_e = 1 mW/cm², λ = 950 nm	TK_{Ik}		0.1		%/K
Reverse light current	E_A = 1 klx, V_R = 5 V	I_{ra}		75		µA
	E_e = 1 mW/cm², λ = 950 nm, V_R = 5 V	I_{ra}	40	50		µA
Angle of half sensitivity		φ		± 65		deg
Wavelength of peak sensitivity		λ_p		900		nm
Range of spectral bandwidth		$\lambda_{0.1}$		430 to 1100		nm
Noise equivalent power	V_R = 10 V, λ = 950 nm	NEP		4×10^{-14}		W/√Hz
Rise time	V_R = 10 V, R_L = 1 kΩ, λ = 820 nm	t_r		100		ns
Fall time	V_R = 10 V, R_L = 1 kΩ, λ = 820 nm	t_f		100		ns

Note

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

BASIC CHARACTERISTICS

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

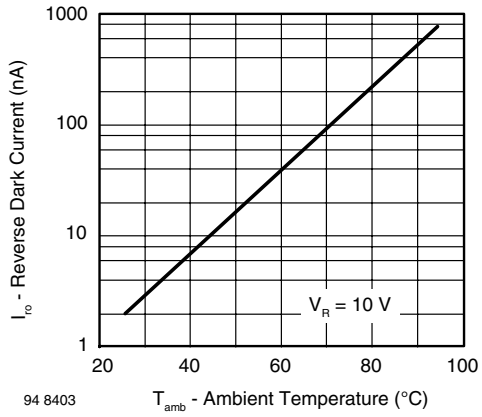


Fig. 1 - Reverse Dark Current vs. Ambient Temperature

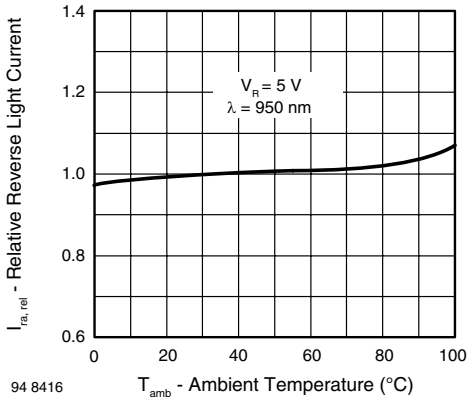


Fig. 2 - Relative Reverse Light Current vs. Ambient Temperature

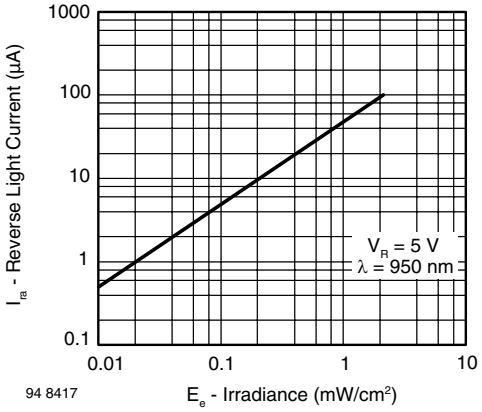


Fig. 3 - Reverse Light Current vs. Irradiance

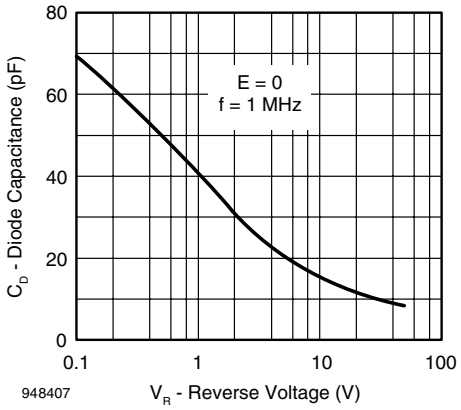


Fig. 6 - Diode Capacitance vs. Reverse Voltage

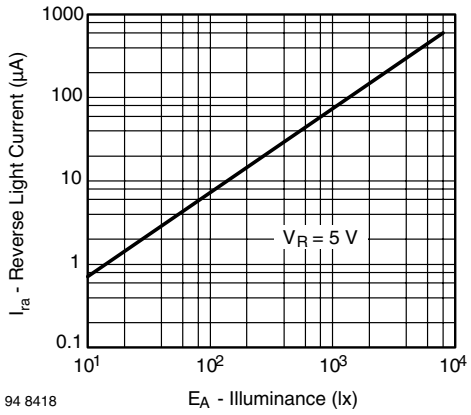


Fig. 4 - Reverse Light Current vs. Illuminance

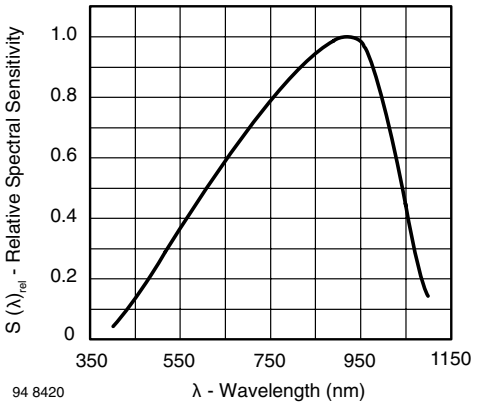


Fig. 7 - Relative Spectral Sensitivity vs. Wavelength

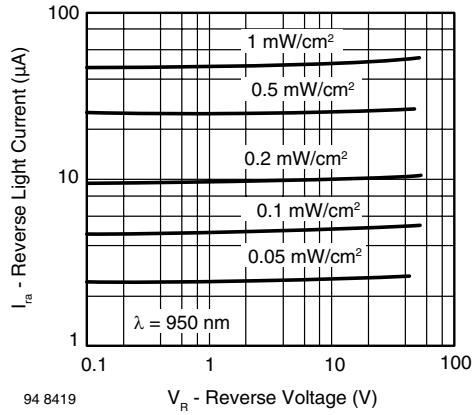


Fig. 5 - Reverse Light Current vs. Reverse Voltage

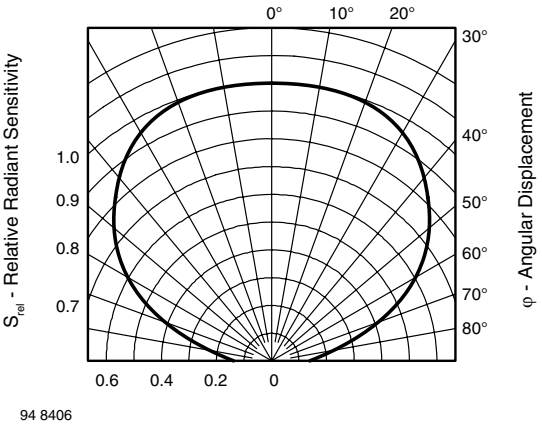
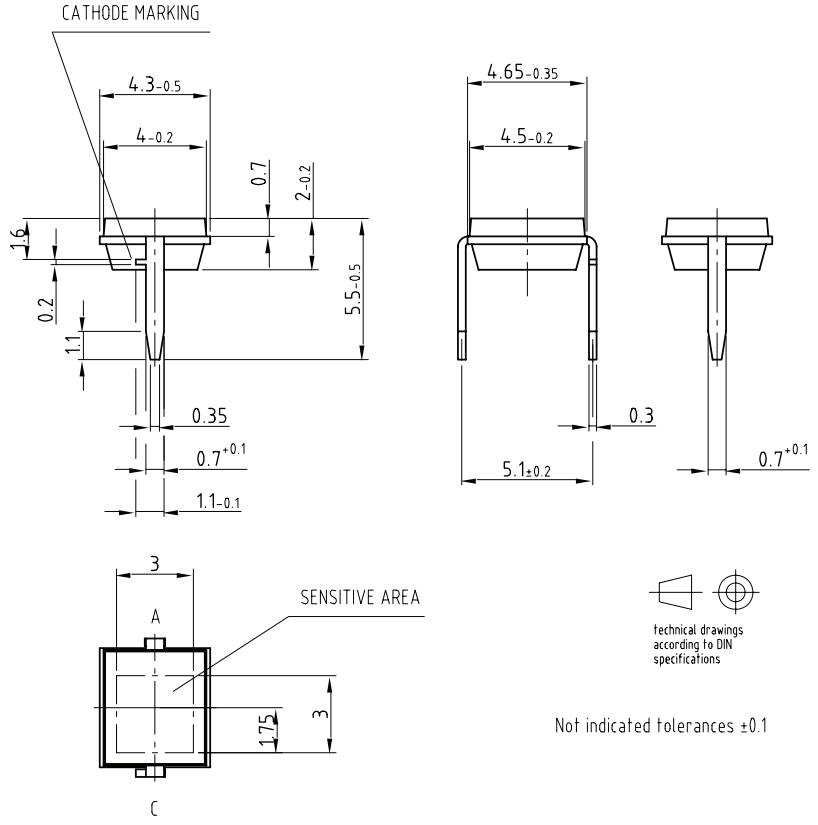


Fig. 8 - Relative Radiant Sensitivity vs. Angular Displacement

PACKAGE DIMENSIONS in millimeters



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TUBE PACKAGING DIMENSIONS in millimeters

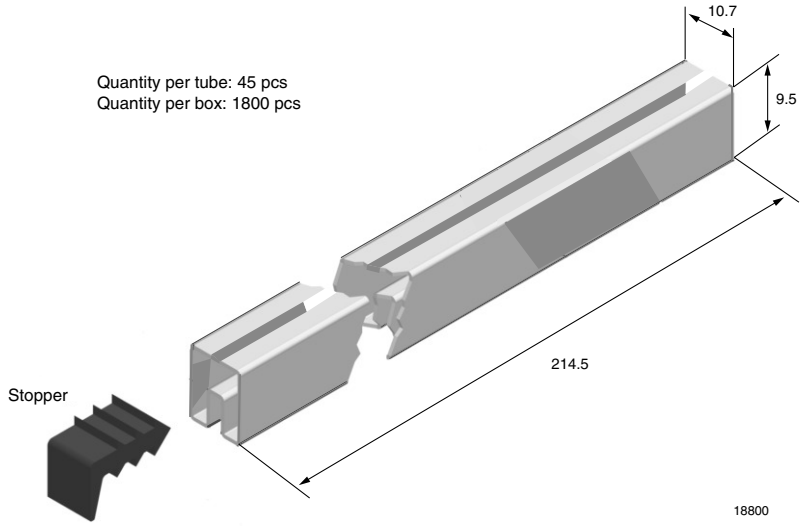

Fig. 9 - Drawing Proportions not scaled