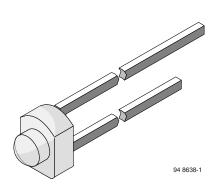
GREEN (5-2008)**



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Silicon NPN Phototransistor

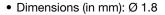


DESCRIPTION

BPW17N is a silicon NPN phototransistor with high radiant sensitivity in clear, T-3/4 plastic package with lens. It is sensitive to visible and near infrared radiation. On PCB this package size enables assembly of arrays with 2.54 mm pitch.

FEATURES

Package type: leaded
Package form: T-¾



· High photo sensitivity

· High radiant sensitivity

• Suitable for visible and near infrared radiation

• Fast response times

• Angle of half sensitivity: $\varphi = \pm 12^{\circ}$

 Comliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

Note

** Please see document "Vishay Material Category Policy": www.vishay.com/doc?99902

APPLICATIONS

Detector in electronic control and drive circuits

PRODUCT SUMMARY			
COMPONENT	I _{ca} (mA)	φ (deg)	λ _{0.1} (nm)
BPW17N	1.0	± 12	450 to 1040

Note

• Test condition see table "Basic Characteristics"

ORDERING INFORMATION				
ORDERING CODE	PACKAGING	REMARKS	PACKAGE FORM	
BPW17N	Bulk	MOQ: 5000 pcs, 5000 pcs/bulk	T-¾	

Note

· MOQ: minimum order quantity

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Collector emitter voltage		V _{CEO}	32	V
Emitter collector voltage		V _{ECO}	5	V
Collector current		I _C	50	mA
Collector peak current	$t_p/T = 0.5, t_p \le 10 \text{ ms}$	I _{CM}	100	mA
Power dissipation	T _{amb} ≤ 55 °C	P _V	100	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}	450	K/W



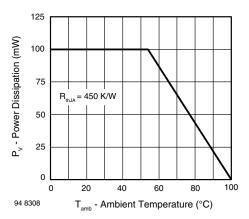
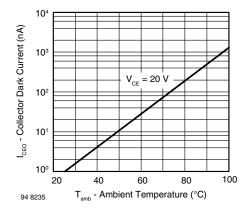
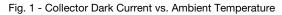


Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

BASIC CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Collector emitter breakdown voltage	I _C = 1 mA	V _{(BR)CEO}	32			V
Collector emitter dark current	$V_{CE} = 20 \text{ V}, E = 0$	I _{CEO}		1	200	nA
Collector emitter capacitance	V _{CE} = 5 V, f = 1 MHz, E = 0	C _{CEO}		8		pF
Collector light current	E_e = 1 mW/cm ² , λ = 950 nm, V_{CE} = 5 V	I _{ca}	0.5	1.0		mA
Angle of half sensitivity		φ		± 12		deg
Wavelength of peak sensitivity		λ_{p}		825		nm
Range of spectral bandwidth		λ _{0.1}		450 to 1040		nm
Collector emitter saturation voltage	E_e = 1 mW/cm ² , λ = 950 nm, I_C = 0.1 mA	V _{CEsat}			0.3	V
Turn-on time	$V_S = 5 \text{ V}, I_C = 5 \text{ mA}, R_L = 100 \Omega$	t _{on}		4.8		μs
Turn-off time	$V_S = 5 \text{ V}, I_C = 5 \text{ mA}, R_L = 100 \Omega$	t _{off}		5.0		μs
Cut-off frequency	$V_S = 5 \text{ V}, I_C = 5 \text{ mA}, R_L = 100 \Omega$	f _c		120		kHz

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





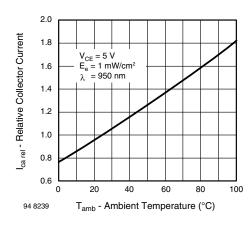


Fig. 2 - Relative Collector Current vs. Ambient Temperature

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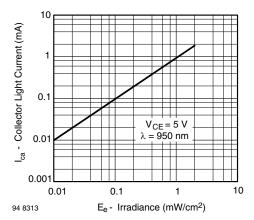


Fig. 3 - Collector Light Current vs. Irradiance

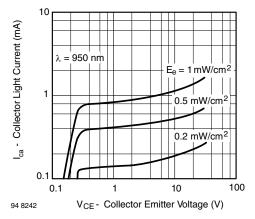


Fig. 4 - Collector Light Current vs. Collector Emitter Voltage

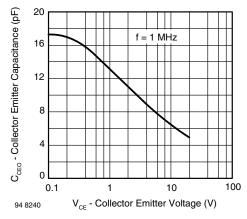


Fig. 5 - Collector Emitter Capacitance vs. Collector Emitter Voltage

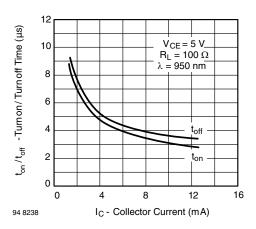


Fig. 6 - Turn-on/Turn-off Time vs. Collector Current

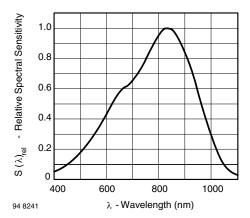


Fig. 7 - Relative Spectral Sensitivity vs. Wavelength

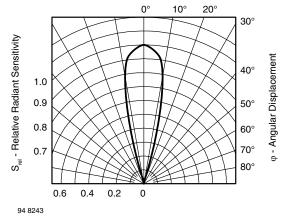
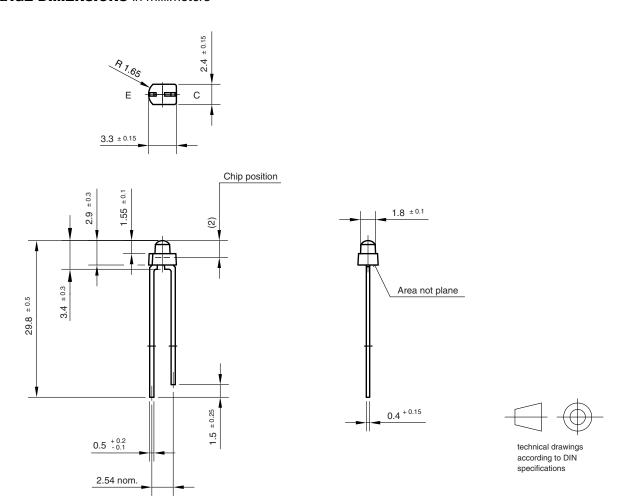


Fig. 8 - Relative Radiant Sensitivity vs. Angular Displacement

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PACKAGE DIMENSIONS in millimeters



6.544-5042.01-4 Issue:1; 01.07.96 96 12187



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