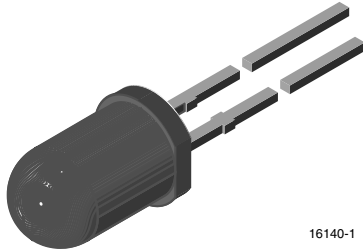


Silicon PIN Photodiode



16140-1

FEATURES

- Package type: leaded
- Package form: T-1 $\frac{3}{4}$
- Dimensions (in mm): \varnothing 5
- Leads with stand-off
- High radiant sensitivity
- Daylight blocking filter matched with 870 nm to 950 nm emitters
- Material categorization:
for definitions of compliance please see www.vishay.com/doc?99912



DESCRIPTION

BPV09NF is a PIN photodiode with high speed and high radiant sensitivity in black, T-1 $\frac{3}{4}$ plastic package with daylight blocking filter. Filter bandwidth is matched with 870 nm to 950 nm IR emitters.

APPLICATIONS

- High speed detector for infrared radiation

PRODUCT SUMMARY			
COMPONENT	I_{ra} (μ A) at $E_e = 1.0 \text{ mW/cm}^2$, $\lambda = 950 \text{ nm}$, $V_R = 5.0 \text{ V}$	φ ($^\circ$)	$\lambda_{0.5}$ (nm)
BPV09NF	55	± 22	790 to 1050

Note

- Test condition see table "Basic Characteristics"

ORDERING INFORMATION			
ORDERING CODE	PACKAGING	REMARKS	PACKAGE FORM
BPV09NF	Bulk	MOQ: 4000 pcs, 4000 pcs/bulk	T-1 $\frac{3}{4}$

Note

- MOQ: minimum order quantity

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25 \text{ }^\circ\text{C}$, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	20	V
Operating temperature range		T_{amb}	-40 to +100	$^\circ\text{C}$
Storage temperature range		T_{stg}	-40 to +100	$^\circ\text{C}$
Soldering temperature	$t \leq 5 \text{ s}$, 2 mm from body	T_{sd}	260	$^\circ\text{C}$

BASIC CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 50\text{ mA}$	V_F	-	0.85	1.3	V
Reverse dark current	$V_R = 10\text{ V}, E = 0$	I_{ro}	-	1	5	nA
Diode capacitance	$V_R = 0\text{ V}, f = 1\text{ MHz}, E = 0$	C_D	-	11	-	pF
Open circuit voltage	$E_e = 1\text{ mW/cm}^2, \lambda = 850\text{ nm}$	V_O	-	410	-	mV
Reverse light current	$E_e = 1\text{ mW/cm}^2, \lambda = 950\text{ nm}, V_R = 5\text{ V}$	I_{ra}	40	55	-	μA
Angle of half sensitivity		ϕ	-	± 22	-	$^{\circ}$
Wavelength of peak sensitivity		λ_p	-	940	-	nm
Range of spectral bandwidth		$\lambda_{0.5}$	-	780 to 1050	-	nm
Rise time	$V_R = 10\text{ V}, R_L = 50\text{ }\Omega, \lambda = 830\text{ nm}$	t_r	-	80	-	ns
Fall time	$V_R = 10\text{ V}, R_L = 50\text{ }\Omega, \lambda = 830\text{ nm}$	t_f	-	60	-	ns

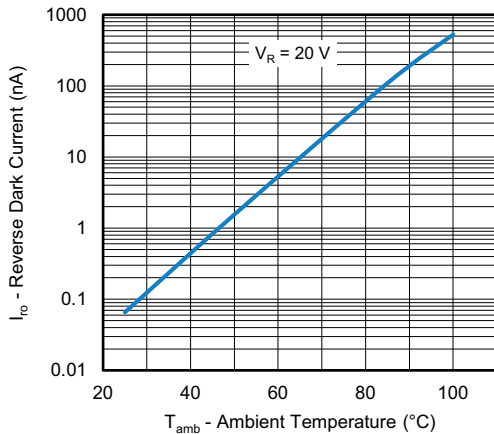
BASIC CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Reverse Dark Current vs. Ambient Temperature

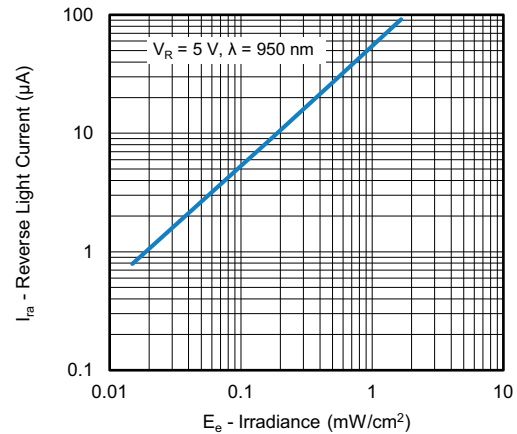


Fig. 3 - Reverse Light Current vs. Irradiance

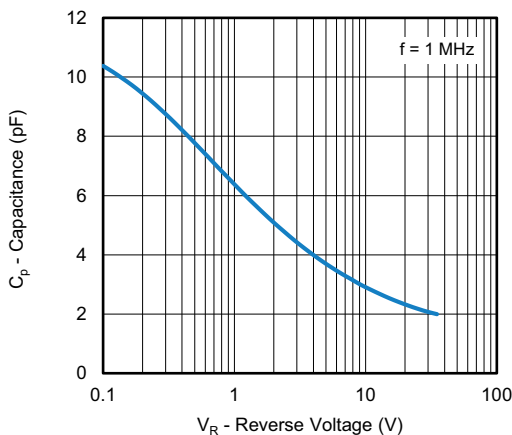


Fig. 2 - Diode Capacitance vs. Reverse Voltage

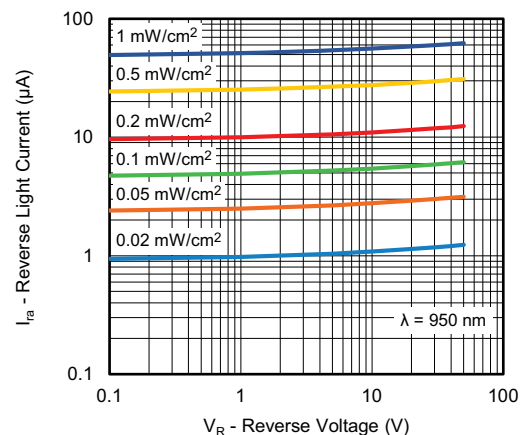


Fig. 4 - Reverse Light Current vs. Reverse Voltage

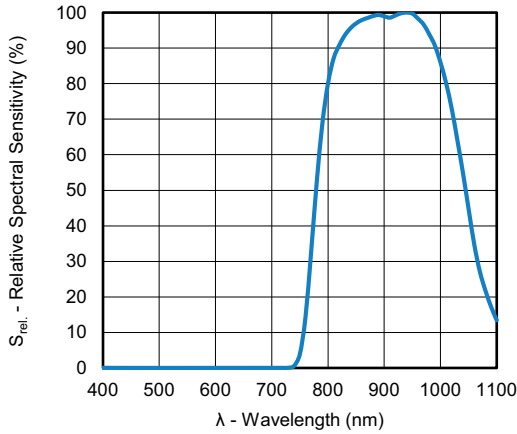


Fig. 5 - Relative Spectral Sensitivity vs. Wavelength

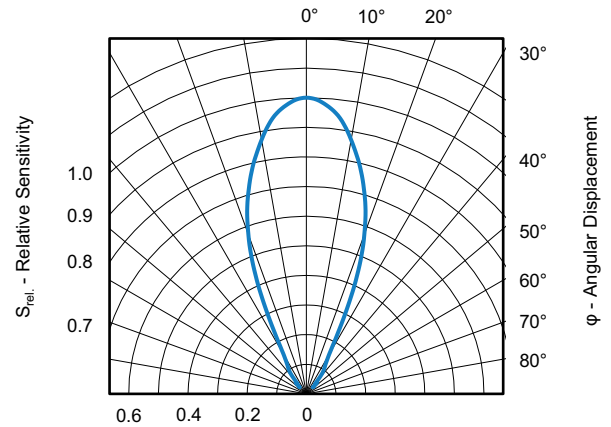
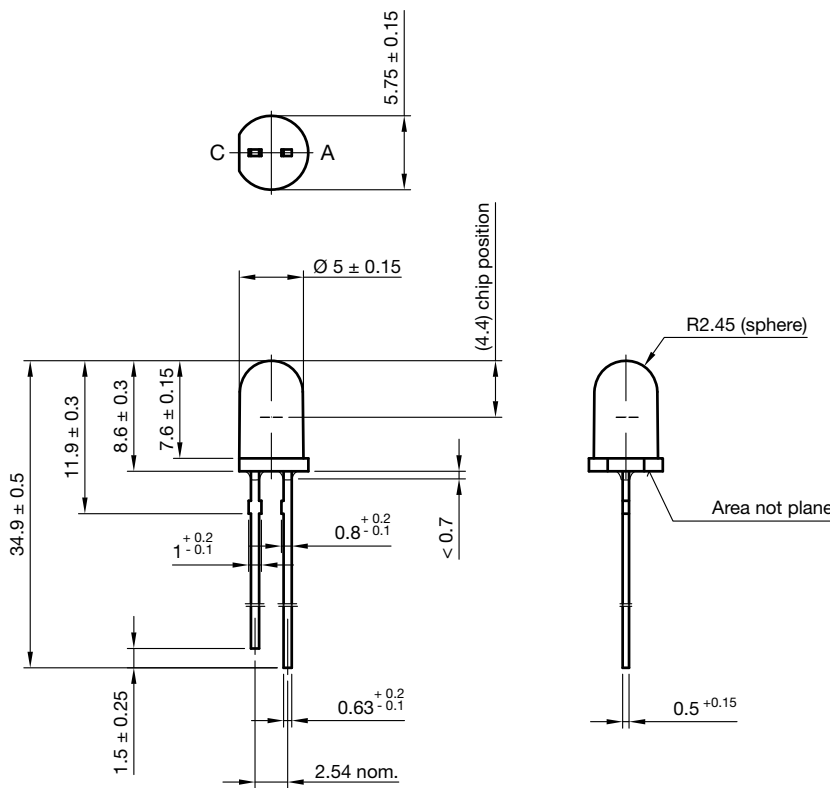


Fig. 6 - Relative Sensitivity vs. Angular Displacement

PACKAGE DIMENSIONS in millimeters



Technical drawings according to DIN specifications

Drawing-No.: 6.544-5185.01-4
Issue: 2; 11.04.2008



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