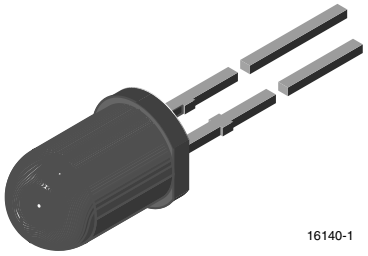
Silicon PIN Photodiode



FEATURES

- Package type: leaded
- Package form: T-1¾
- Dimensions (in mm): Ø 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

Pb-free

e4

RoHS COMPLIANT

HALOGEN FREE

GREEN (5-2008)

DESCRIPTION

BPV09NF is a PIN photodiode with high speed and high radiant sensitivity in black, T-1¾ 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} (µA) at E_e = 1.0 mW/cm², λ = 950 nm, V_R = 5.0 V	φ (°)	$\lambda_{0.5}$ (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-1¾

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	20	V
Operating temperature range		T_{amb}	-40 to +100	°C
Storage temperature range		T_{stg}	-40 to +100	°C
Soldering temperature	t ≤ 5 s, 2 mm from body	T_{sd}	260	°C

BASIC CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Forward voltage	I_F = 50 mA	V_F	-	0.85	1.3	V
Reverse dark current	V_R = 10 V, E = 0	I_{ro}	-	1	5	nA
Diode capacitance	V_R = 0 V, f = 1 MHz, E = 0	C_D	-	11	-	pF
Open circuit voltage	E_e = 1 mW/cm², λ = 850 nm	V_O	-	410	-	mV
Reverse light current	E_e = 1 mW/cm², λ = 950 nm, V_R = 5 V	I_{ra}	40	55	-	µA
Angle of half sensitivity		φ	-	± 22	-	°
Wavelength of peak sensitivity		λ_p	-	940	-	nm
Range of spectral bandwidth		$\lambda_{0.5}$	-	780 to 1050	-	nm
Rise time	V_R = 10 V, R_L = 50 Ω, λ = 830 nm	t_r	-	80	-	ns
Fall time	V_R = 10 V, R_L = 50 Ω, λ = 830 nm	t_f	-	60	-	ns

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

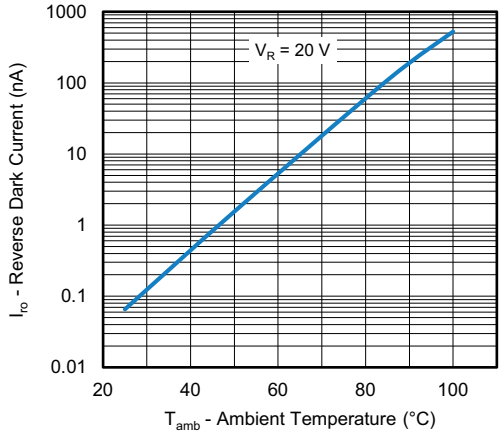


Fig. 1 - Reverse Dark Current vs. Ambient Temperature

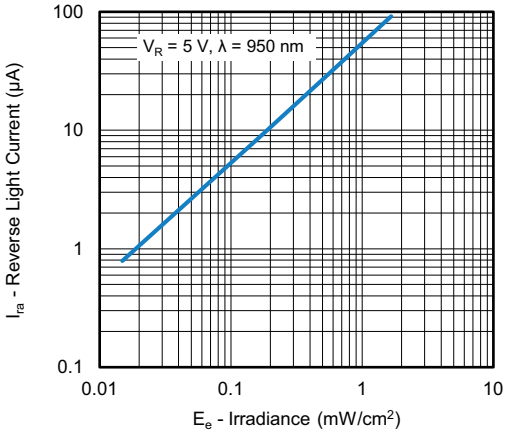


Fig. 3 - Reverse Light Current vs. Irradiance

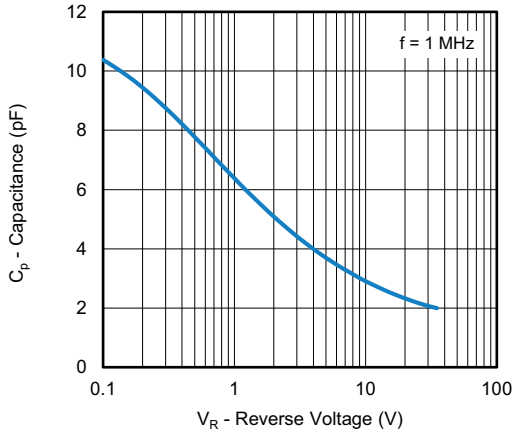


Fig. 2 - Diode Capacitance vs. Reverse Voltage

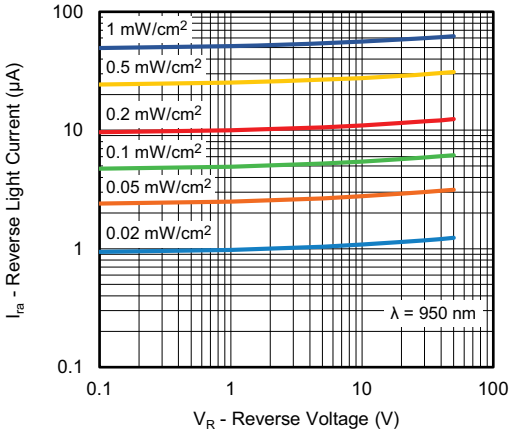


Fig. 4 - Reverse Light Current vs. Reverse Voltage

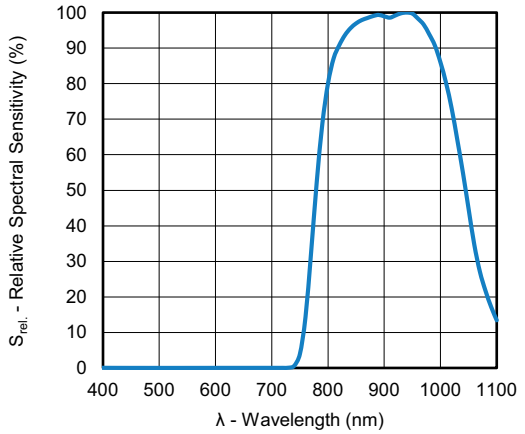


Fig. 5 - Relative Spectral Sensitivity vs. Wavelength

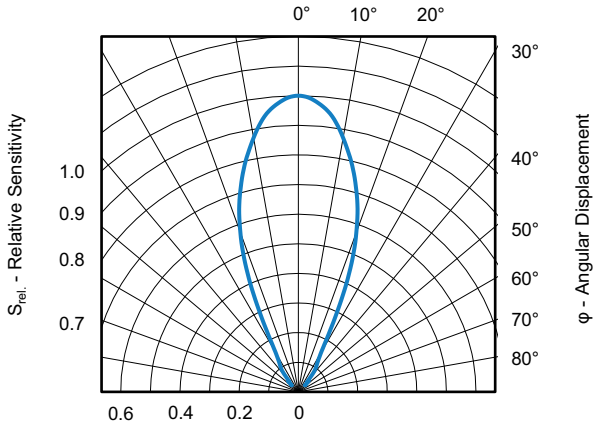
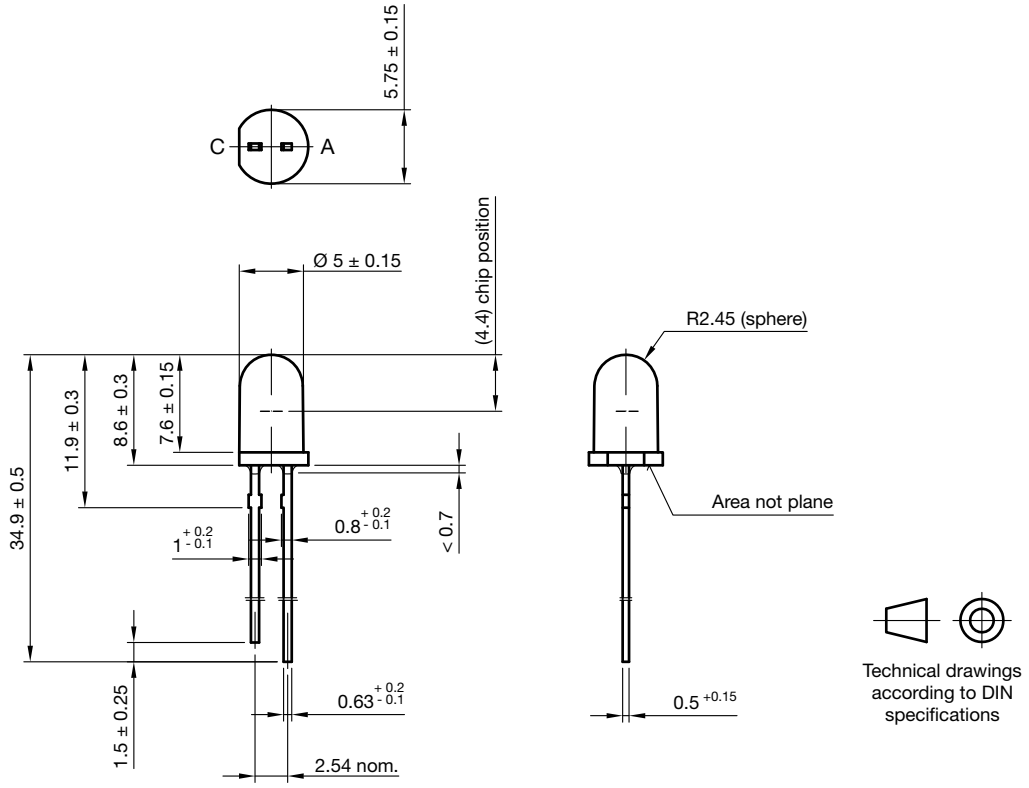


Fig. 6 - Relative Sensitivity vs. Angular Displacement

PACKAGE DIMENSIONS in millimeters



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