



WP7113PD1BT/BD-P22 Photodiode

DESCRIPTION

- Made with silicon phototransistor chips

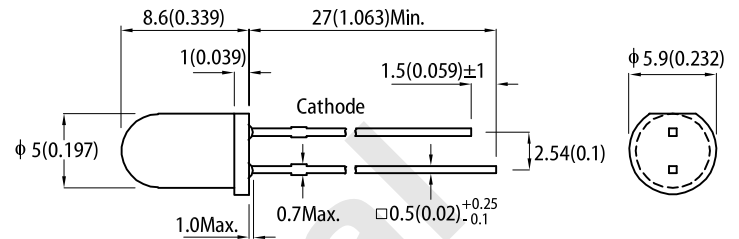
FEATURES

- Mechanically and spectrally matched to the infrared emitting LED lamp
- Black lens
- RoHS compliant

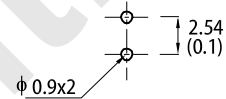
APPLICATIONS

- Infrared applied systems
- Optoelectronic switches
- Photodetector control circuits
- Sensor technology

PACKAGE DIMENSIONS



Recommended PCB Layout



Notes:

- All dimensions are in millimeters (inches).
- Tolerance is $\pm 0.25(0.01)$ unless otherwise noted.
- Lead spacing is measured where the leads emerge from the package.
- The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

ABSOLUTE MAXIMUM RATINGS at $T_A=25^\circ\text{C}$

Parameter	Max.Ratings	Units
Power Dissipation	150	mW
Operating Temperature	-40 to +85	$^\circ\text{C}$
Storage Temperature	-40 to +85	$^\circ\text{C}$
Lead Soldering Temperature ^[1]	260 $^\circ\text{C}$ For 3 Seconds	
Lead Soldering Temperature ^[2]	260 $^\circ\text{C}$ For 5 Seconds	

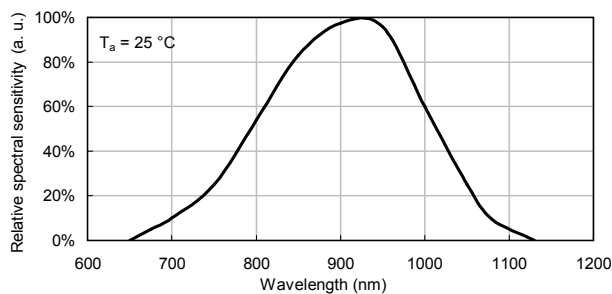
- Notes:
- 2mm below package base.
 - 5mm below package base.
 - Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

ELECTRICAL / OPTICAL CHARACTERISTICS at $T_A=25^\circ\text{C}$

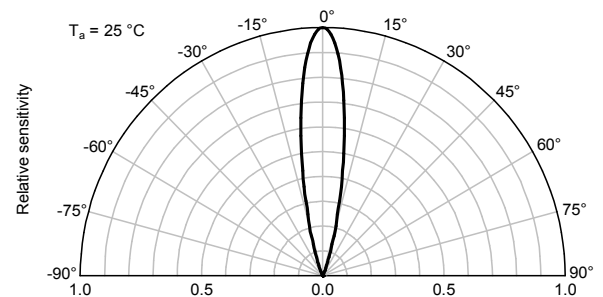
Parameter	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Reverse Break down Voltage	$V_{(BR)R}$	33	170	-	V	$I_R = 100\mu\text{A}$ $H = 0\text{mW/cm}^2$
Reverse Dark Current	$I_{D(R)}$	-	-	10	nA	$V_R = 10\text{V}$ $H = 0\text{mW/cm}^2$
Open Circuit Voltage	V_{OC}	-	390	-	mV	$\lambda = 940\text{nm}$ $H = 5\text{mW/cm}^2$
Rise Time	T_R	-	6	-	nS	$V_R = 10\text{V}$ $\lambda = 940\text{nm}$ $R_L = 1000\Omega$
Fall Time	T_F	-	6	-	nS	
Light current	I_S	1.2	2.0	-	μA	$V_R = 5\text{V}$ $E_e = 0.08\text{mW/cm}^2$ $\lambda = 940\text{nm}$
Total Capacitance	C_T	-	5	-	pF	$V_R = 10\text{V}$ $F = 1\text{MHz}$ $H = 0\text{mW/cm}^2$
Range of spectral bandwidth	$\lambda_{0.1}$	670	-	1070	nm	-
Wavelength of peak sensitivity	λ_p	-	940	-	nm	-
Angle of half sensitivity	$2\theta_{1/2}$	-	20	-	deg	-

TECHNICAL DATA

RELATIVE SPECTRAL SENSITIVITY vs. WAVELENGTH

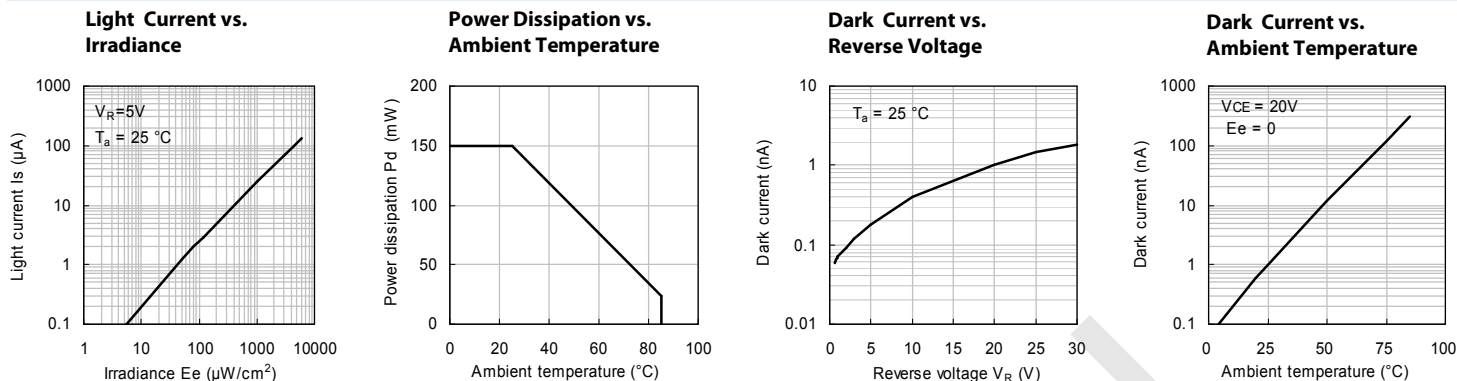


RELATIVE RADIANT SENSITIVITY vs. ANGULAR DISPLACEMENT

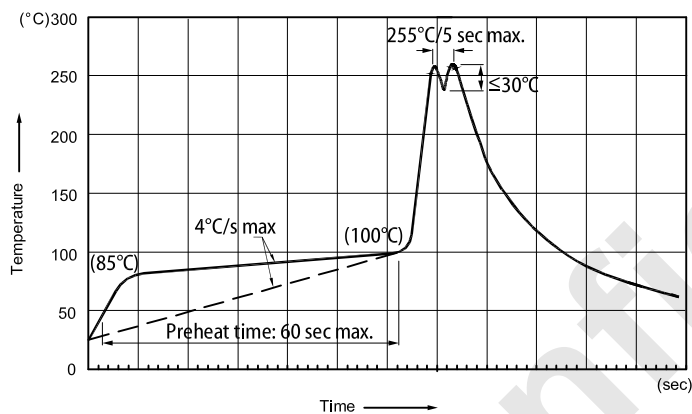


TECHNICAL DATA

PHOTODIODE

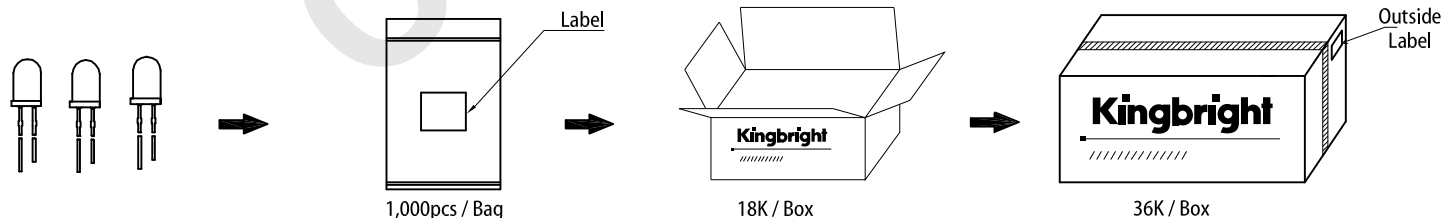


RECOMMENDED WAVE SOLDERING PROFILE



- Notes:
1. Recommend pre-heat temperature of 105 $^\circ C$ or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260 $^\circ C$
 2. Peak wave soldering temperature between 245 $^\circ C$ ~ 255 $^\circ C$ for 3 sec (5 sec max).
 3. Do not apply stress to the epoxy resin while the temperature is above 85 $^\circ C$.
 4. Fixtures should not incur stress on the component when mounting and during soldering process.
 5. SAC 305 solder alloy is recommended.
 6. No more than one wave soldering pass.

PACKING & LABEL SPECIFICATIONS



Kingbright
 XXXXXXXXXXXX
 CODE: XXXX
 D/C: XXX XX XXXX
 XXXXXXXXXXX-XXXX

(1P) MFG P/N: XXXXXXXXXXXXXXXX
 (Q) QTY: XXXX

(9D) DATE CODE: XXXX (4L) COO: CN
 (33P) CODE: XXXX

(1T) TRACEABILITY: XXXXXXXXXXX-XXXX
 (SP)XXXXXXXXXX

1 RoHS Compliant