

INFRARED PRODUCTS SPECIFICATION

HPTB1b-48D



Drawn by	Checked by	Approved by



DATE:2009/1/19

REV:F



HUEY JANN ELECTRONICS INDUSTRY CO., LTD.

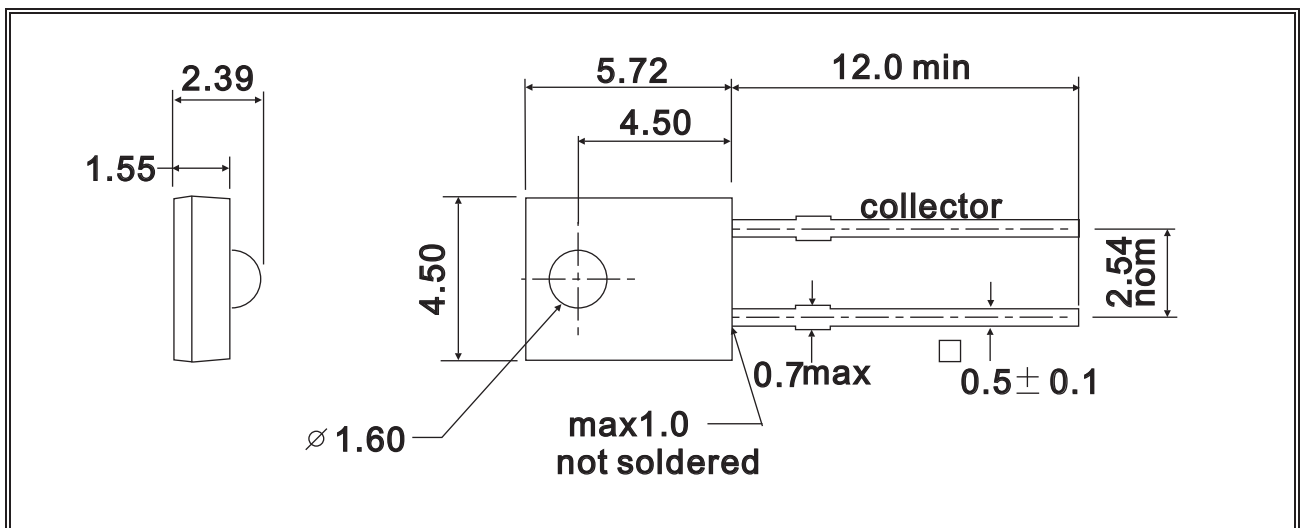
No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

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DEVICES

Part Number	Lens		Source	
	Color	Diffusion	Dice Source	Color
HPTB1b-48D	Water Clear	Non-Diffused	---	Phototransistor

PACKAGE DIMENSIONS:



NOTE:

- 1.All dimensions are in millimeter.
- 2.Lead spacing is measured where the lead emerge from the package.
- 3.protruded resin under flange is 1.5mm max.
- 4.specifications are subject to change without notice.
- 5.Tolerance is ± 0.3 mm unless otherwise noted.



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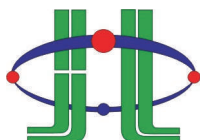
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ABSOLUTE MAXIMUM RATINGS

TA=25°C

PARAMETER	SYMBOL	MAX. RATING	UNIT
Power Dissipation	Pd	150	mW
Sensitive Area	AA	0.19	mm
Collector-Emitter Voltage	Vceo	30	V
Emitter-Collector Voltage	Veco	5	V
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +100	°C
Dip Soldering Temperature (3mm from case Bottom 260 °C for 5 seconds)			

*Iron soldering in 350°C within 5 seconds will not cause damage to the dice. But be aware of the high temperature will not only make the epoxy soften but also cause the lead moving and the gold wire broken and even open. So before returning to the normal temperature PLEASE AVOID any serious pressure on the top of epoxy and lead.



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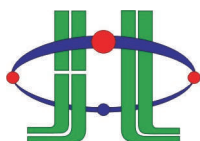
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ELECTRIC-OPTICAL CHARACTERISTICS

TA=25°C

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Angle of Half Sensitive	$2\theta_{1/2}$			40		deg
Collector-Emitter Voltage	V_{ceo}	$I_c=1mA,$ $E_e=0mw/cm^2$	30			V
Emitter-Collector Voltage	V_{eco}	$I_c=100\mu A,$ $E_e=0mw/cm^2$		5		v
Collector-Emitter Saturation Voltage	V_{ces}	$I_c=0.5mA,$ $I_b=100\mu A$			0.4	V
Collector Current (Saturation)	I_c	$V_{ce}=5V,$ $E_e=0.5mw/cm^2$	0.3	1.0		mA
Collector Dark Current	I_{ceo}	$V_{ce}=20V,$ $E_e=0mw/cm^2$			100	nA
Ries Time	T_r	$V_{ce}=5V,$ $I_c=1mA,$		15		μS
Fall Time	T_f	$R_L=1000\Omega$		15		μS
Peak Wavelength	λ_p			900		nm
Sensitivity Wavelength	λ		500		1100	nm

*1.The dominate wavelength , λ_d , is derived from the CIE Chromaticity Diagram and represents the color of the device.



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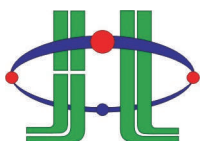
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RELIABILITY TEST

Classification	Test Item	Reference Standard	Test Conditions	Result
Endurance Test	Operation Life	MIL-STD-750:1026 MIL-STD-883:1005 JIS-C-7021 :B-1	Connect with a power Vce=5V,Ee=0.5mw/cm ² Ta=Under room temperature Test Time=1,000hrs	0/22
	High Temperature High Humidity Storage	MIL-STD-202:103B JIS-C-7021 :B-11	Ta=+85°C±5°C RH=90% ~ 95% Test Time=1000hrs	0/22
	High Temperature Storage	MIL-STD-883:1008 JIS-C-7021 :B-10	High Ta=+100°C±5°C Test Time=1,000hrs	0/22
	Low Temperature Storage	JIS-C-7021 :B-12	Low Ta=-40°C±5°C Test Time=1,000hrs	0/22
Environmental Test	Temperature Cycling	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS-C-7021 :A-4	-40°C ~ +25°C ~ +85°C ~ +25°C 60min 20min 60min 20min Test Time=200cycle	0/22
	Thermal Shock	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010	-40°C±5°C ~ +85°C±5°C 20min 20min Test Time=200cycle	0/22

*Failure Criteria:

1. VF arise \geq 10%
2. IV decline \geq 30%
3. A failure is an LED that is open or shorted

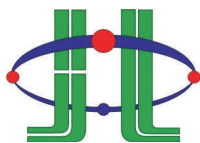
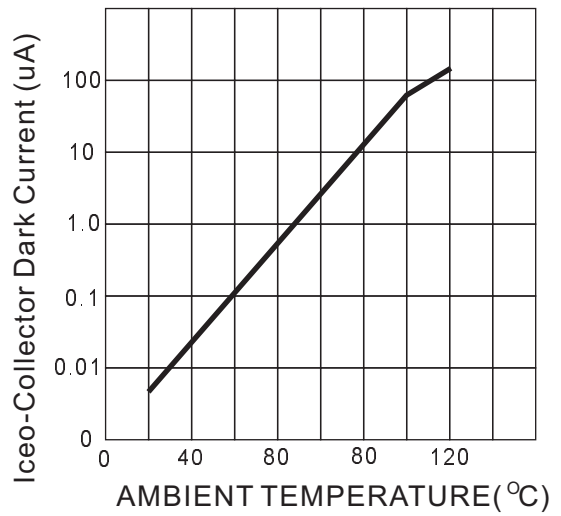
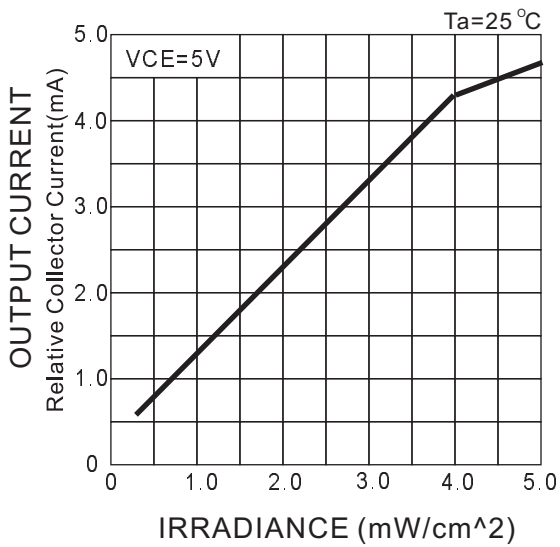
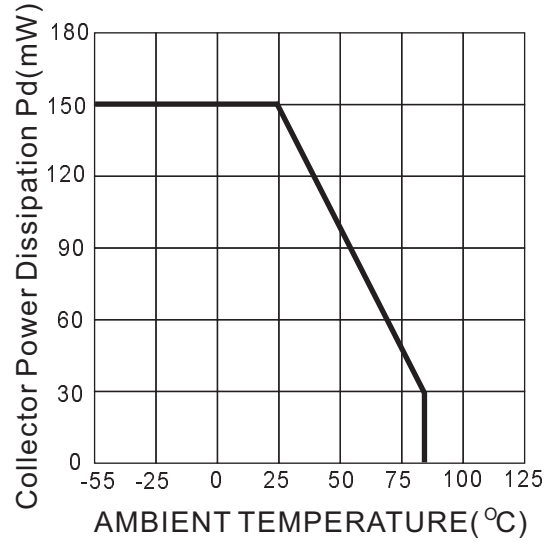
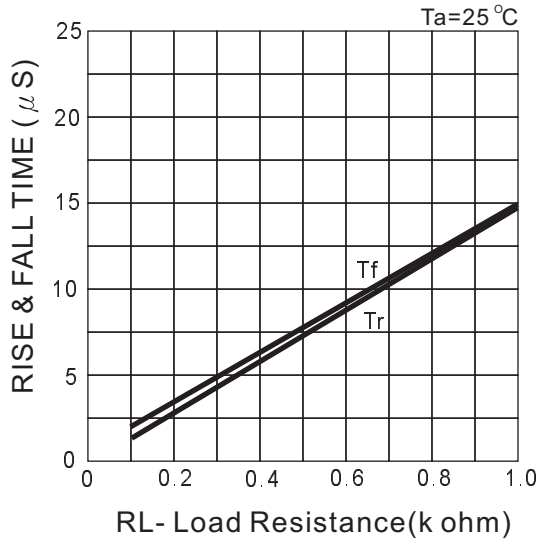


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TYPICAL ELECTRICAL OPTICAL CHARACTERISTICS CURVES

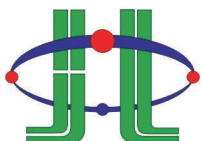
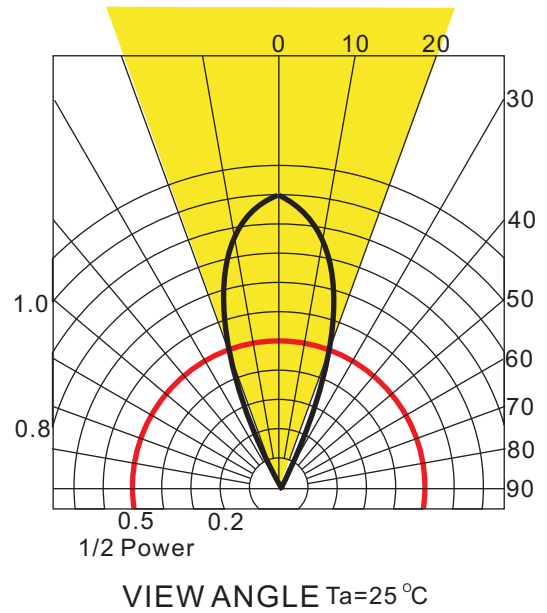
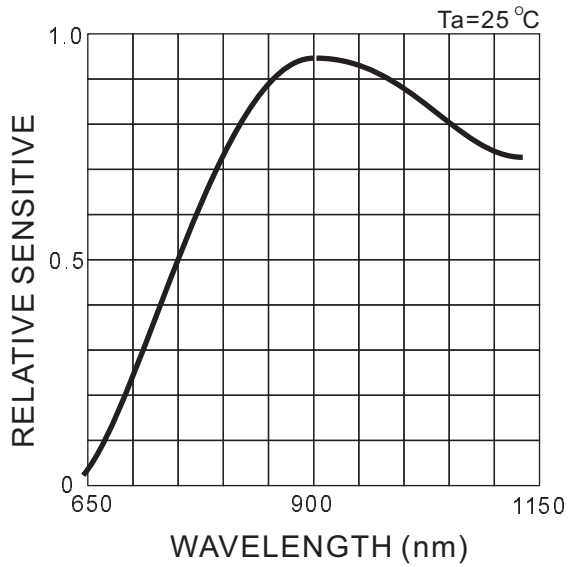


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