柏力國際發展有限公司
PARKLANE INTERNATIONAL DEVELOPMENT LIMITED

Part Number: **YC-513HD**

1.SPECIFICATIONS

● Features:

1.Low Power consumption
2.High efficiency
3.Versatile mounting on P.C Board or panel
4.Low current requirement
5.This product don't contained restriction substance, compliance ROHS standard.

● Applications:

1.TV set
2.Monitor
3.Telephone
4.Computer
5.Circuit board

(1) Absolute Maximum Rating (Ta=25℃)

Item	Symbol	Absolute Maximum Rating	Unit
Forward Current	IF	15	mA
Peak Forward Current	IFP	50	mA
Power Dissipation	PD	40	mW
Reverse Voltage	VR	5	V
Operating Temperature	TOP	-40℃~80℃	℃
Storage Temperature	TSTG	-40℃~85℃	℃
Lead Soldering Temperature	TSOL	260℃ FOR 5 SECONDS	

*1Condition for I_{FP} is Pulse of 1/10 duty and 0.1msec width

(2) Initial Electrical/Optical Characteristics (Ta=25℃)

Item	Symbol	Condition	Min	Typ	Max	Unit
Forward Voltage	VF	IF=20(mA)	/	2.2	2.6	V
Reverse Current	IR	VR=5(V)	/	/	100	μA
Viewing Angle	2θ1/2	IF=20(mA)	/	35	/	deg
Spectral Line Half-width	△λ	IF=20(mA)	/	90	/	nm
Luminous Intensity	IV	IF=20(mA)	/	12.0	/	mcd
Peak Wavelength	λp	IF=20(mA)	/	700	/	nm

Remark:Viewing angle is the Off-axis angle at which the luminous intensity is half the axial luminous intrnsity.

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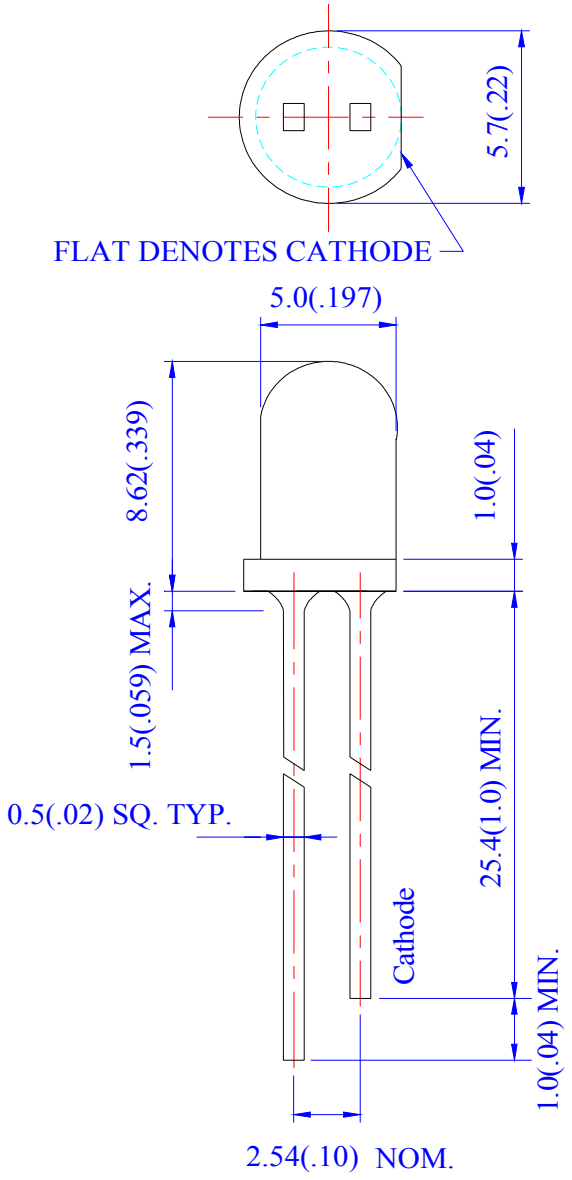
2. Package Dimension:



Part Number	Chip		Lens Color
	Material	Emitting Color	
YC-513HD	GaP/GaP	Bright Red	Red Diffused

NOTES:

1.All dimensiong are millimeters(inches)

2.Tolerance is ±0.25mm(0.01") unless otherwise specified.

3.Lead spacing is measured where the leads emerge from the package.

4.specifications are subject to change without notice.

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3. Typical Electro-Optical Characteristic Curves:

Fig1.Spectrum Distribution

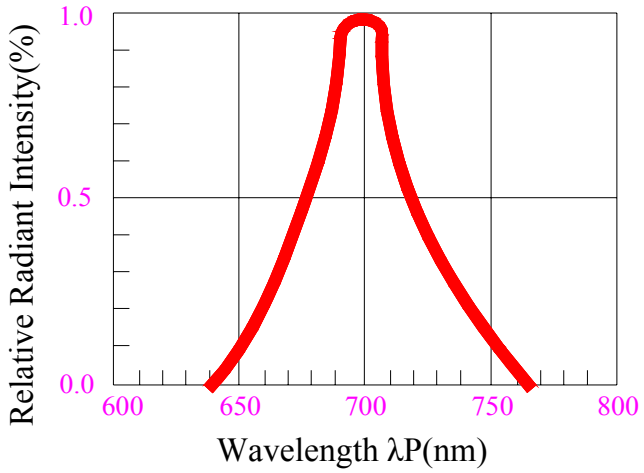


Fig2.Forward Current vs.Forward Voltage

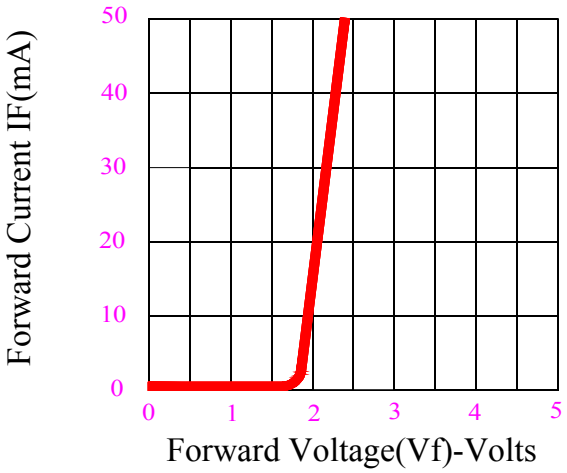


Fig3.Relative Radiant Intensity
vs Ambient Temperature (If=20mA)

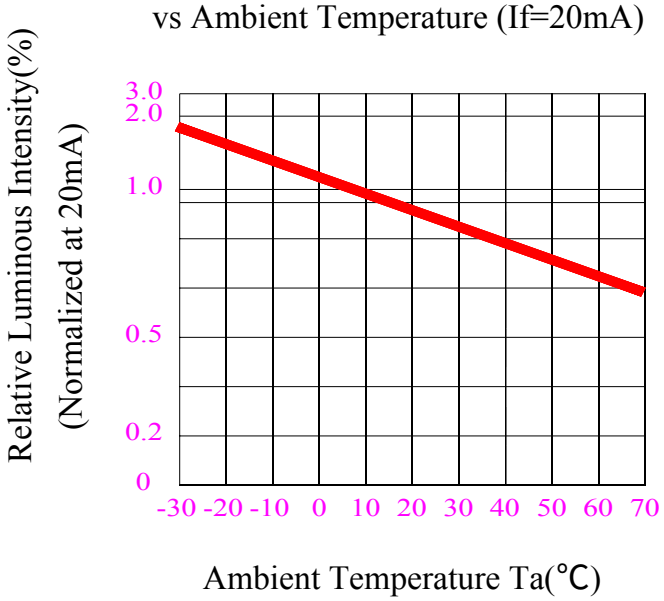


Fig4.Forward Current
vs Derating Curve

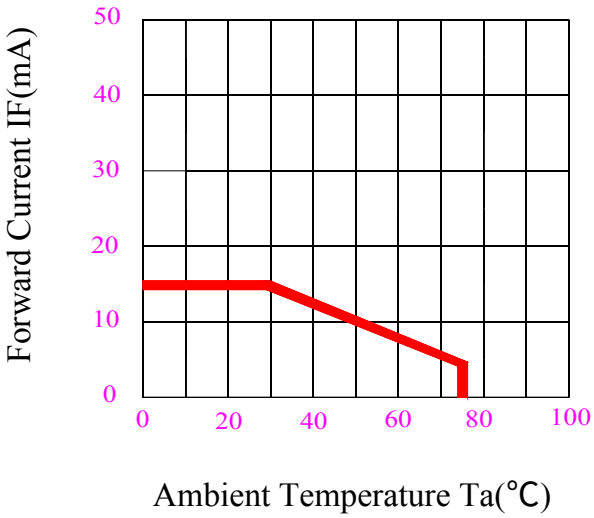


Fig5.Relative Radiant Intensity
vs Forward Current

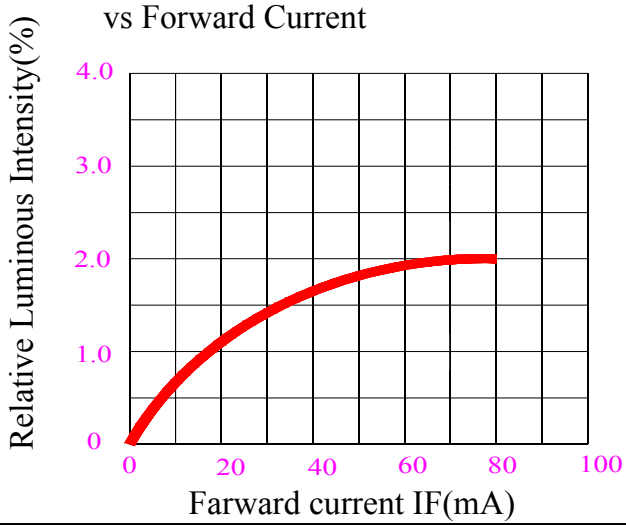
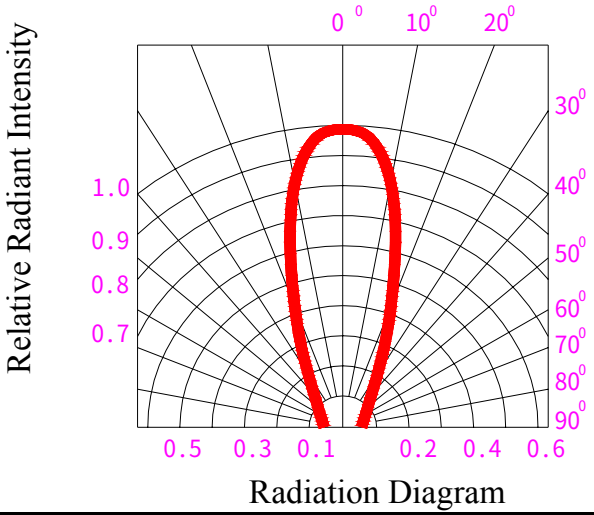


Fig6.Rodiation Diagram Ta=25℃



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4.Rreliability Performance

(1)Reliability test item and condition

NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP:260±5℃	5 SEC	76pcs	0/1
2	Temperature Cycle	H:+85℃ 30min δ5min L:-55℃ 30min	50CYCLE	76pcs	0/1
3	Thermal Shock	H:+100℃ 5min δ10sec L:-10℃ 5min	50CYCLE	76pcs	0/1
4	High Temperature Storage	TEMP:100℃	1000HRS	76pcs	0/1
5	Low Temperature Storage	TEMP:55℃	1000HRS	76pcs	0/1
6	DC Operating Life	If=20mA	1000HRS	76pcs	0/1
7	High Temperature High Humidity	85℃/85%RH	1000HRS	76pcs	0/1

(2)CRITERIA FOR JUDGING THE DAMAGE

		Test Conditions	Criteria for judgement	
			Min	Max
Voltage(Forward)	VF	IF=20mA	-	U.S.L*)×1.1
Current(Reverse)	IR	VR=5V	-	U.S.L*)×2.0
Luminous Intensity	IV	IF=20mA	L.S.L**)×0.7	-

*)U.S.L.: Upper Standard Level. **)L.S.L.:Lower Standard Level.

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5. Application Notes

(1)Lead Forming

● When forming a lead should be bent at a point at least 3mm from the base of the epoxy bulb .Do not use the base of the leadframe as a fulcrum during lead forming.

●Lead forming should be done before soldering.

●Do not apply any bending stress to the base of the lead .The stress to the base may damage the LED's characteristics or it may bread the LED.

●When mounting the LED's onto a printed circuit board, the holes on the circuit board should be exactly aligned with the leads of the LED.

●If the LED's are mounted with stress at the leads, it causes deterioration of epoxyresin and this will degrade the LED.

(2)Soldering conditions

●Solder the LED's no closer than 3mm from the base of the epoxy bulb. Soldering the LED beyond the tie-bar is recommended.

●Maximum allowable soldering conditions are;

Solder dipping: at 260 degrees C, 5seconds max

Solder iron: at 300 degrees C, 3seconds max

●Do not apply any stress to the lead particularly when heated.

●When it is necessary to clamp the LED to prevent soldering failure it is important to minimize the mechanical stress on the LED's.

●Cut the LED leadframe at room temperature. Cutting the leadframes at high temperature may cause failure of the LED.

(3)Static Electricity and Surge

●Static electricity and surge will damage the LED. It is recommend to use a wrist band or anti-electrostatic glove when handling the LED's.

●All devices, equipment and machinery must be properly grounded.

(4)Heat Generation

●Heat generation must be taken into design consideration when using the LED's. The coefficient of temperature increase per input electric power at room temperature is about 0.5 degrees C/mW at the LED's active layer. This temperature gets higher when the LED's are densely mounted.

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●It is necessary to design the circuit so that the operating conditions are within the temperature then the LED's are illuminating.

●The operating current should be decided after considering the ambient maximum absolute maximum ratings.

(5)Other

●Care must be taken so that reverse voltage will not exceed the absolute maximum rating when using LED's with matrix drive.

●Prior notice to PARKLANE is recommended when washing the LED's with solvents etc. Certain solvents dissolve the resin, and this will lead to deterioration and failure of the LED.

●The leads are plated with silve. They will become discolored by contact with Hydrogen Sulfide and other gaseous chemicals. Precautions must be taken to

• maintain a clean storing atmosphere .Also, if the LED's are stored for 3 months or more after being shipped from YIOW CHIE, a sealed container with a Nitrogen atmosphere should be used for storage.

●The LED light output is strong enough to injure human eyes. Precautions must be taken to prevent looking directly at the LED with unaided eyes for more than a

• few seconds.

6. Warranty

●PARKLANE warrants that its LED's conform to the foregoing specifications

• and that PARKLANE will convey good title to all LED's sold.

●PARKLANE disclaims all other warranties including the implied warranties of merchantablity and fitness for a particular purpose.

●In the event any LED supplied by PARKLANE is found not to conform to the foregoing specifications within ninety days of receipt ,PARKLANE will repair or replace the LED, at PARKLANE's option, provided that User

(1) Promptly notifies PARKLANE in writing of the details of the defect.

(2) Ships the LED at User's expense to PARKLANE for examination.

(3) The defect is due to the negligence of PARKLANE and not mishandling or misuse by User.

●PARKLANE cannot take any responsibility for any troubles that are caused by using the LED's at conditions exceeding our specifications.

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●These specifications are applied only when a LED stands alone and it is strongly recommended that the User of the LED confirms the properties upon assembly. PARKLANE is not responsible for failures caused during and after assembling.

●These LED's are designed and manufactured for standard applications such as electric home appliances, communication equipment, office equipment, electronic instrumentation and so on.

●It is recommended to consult with PARKLANE in advance if User's application requires any particular quality or reliability which concerns human life.Examples would medical equipment, aerospace applications, traffic signals, safety system equipment and so on.

●PARKLANE's liability for defective lamps shall be limited to replacement and in no event shall PARKLANE be liable for consequential damages or lost profits.

7. Others

(1) Both parties shall sincerely try to find a solution when any inconvenience is found in these specifications.

(2)The User's approval shall be required when PARKLANE modifies the design or the manufacturing process which would affect the characteristics, performance reliability and so on.

(3)These specifications can be revised on mutual agreement.

(4)PARKLANE understands that User accepts the content of this specifications , if User does not return these specifications with your signature within 3 weeks after your receipt.

--END of SPECIFICATIONS--