

**Harvatek International
3mm through hole lamp
HV-7W60TR-5394**

Official Product	HV-7W60TR-5394	Customer Part No.	Data Sheet No.
	*****	*****	HV-7W60TR-5394
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	Mar. 7, 2012	Version of 1.3	Page 1/11

DISCLAIMER

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LIFE SUPPORT POLICY

HARVATEK's products are not authorized for use as critical components in life support devices or systems without the express written approval of the President of HARVATEK or HARVATEK INTERNATIONAL. As used herein:

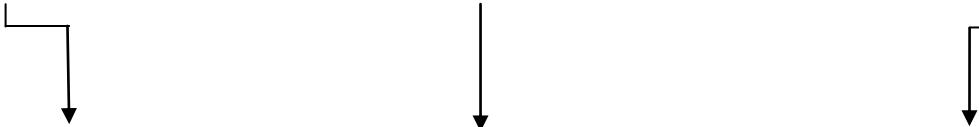
1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.

2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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Orderable Information

H V - 7 W 6 0 T R - 5 3 9 4

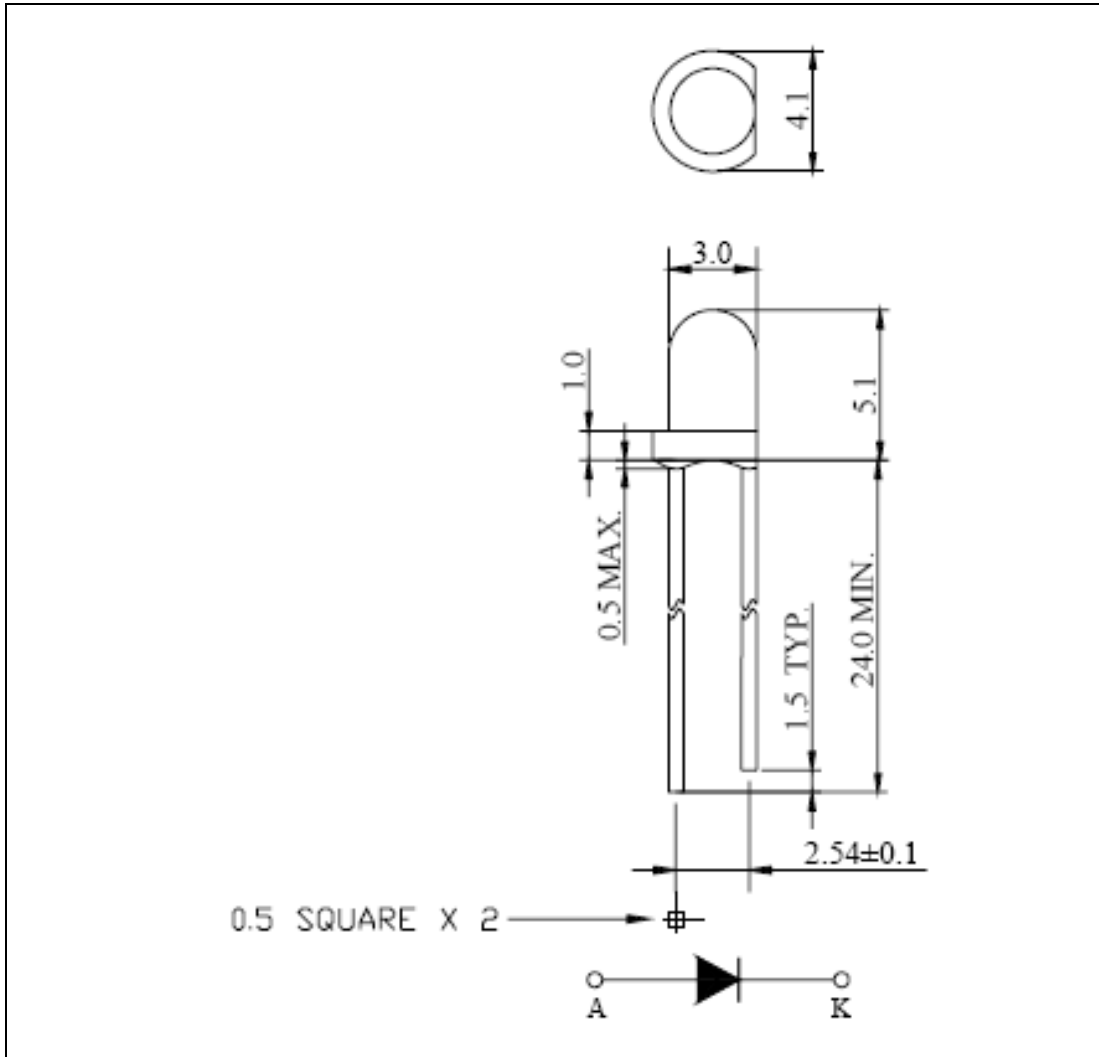


Series Name	Color Code	Customer Code
HV : Harvatek Through Hole Lamp	7W60TR : InGaN White,Water Clear Lens,3mm	5394 : Customer Code

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Features:

- Stable Color
- Popular 3mm package
- InGaN Technology
- White diffused lens



Note:

1. All dimensions are in mm.
2. Tolerance is +/- 0.25mm unless otherwise noted.

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Absolute Maximum Rating (@ 25°C)

Parameter	Symbol	Spec	Unit
Power Dissipation	P _d	108	mW
Reverse Voltage	V _r	5	V
Forward Current	I _f	30	mA
Reverse Current	I _r	50	μA
Peak Current (1/10 Duty Cycle, 0.1ms pulse width)	I _F (Peak)	100	mA
Operating Temperature Range	T _{opr}	-25 to +85	°C
Storage Temperature Range	T _{stg}	-40 to +100	°C
Lead Soldering Temp	-	Dip Soldering : 260°C for 5 sec. Hand Soldering : 350 °C for 3 sec.	°C
Electrostatic discharge	ESD	6000	V

Electrical and Optical Characteristics (@ 25 °C)

Parameter	Symbol	HV-7W60TR-5394			Unit	Test Condition
		Min.	Typ.	Max.		
Luminous Intensity	I _v	700	1700	-	mcd	I _f =20mA
Forward voltage	V _f	-	3.2	3.6	V	I _f =20mA
CIE Chromaticity Coordinates	X Y	-	X=0.31 Y=0.30	-	-	I _f =20mA
Reverse Current	I _r	50			μA	V _r =5V
Viewing angle	2θ 1/2	60			deg	I _f =20mA

Brightness tolerance = +/- 15%

Chromaticity tolerance = +/- 0.01

Viewing angle tolerance = +/-5deg

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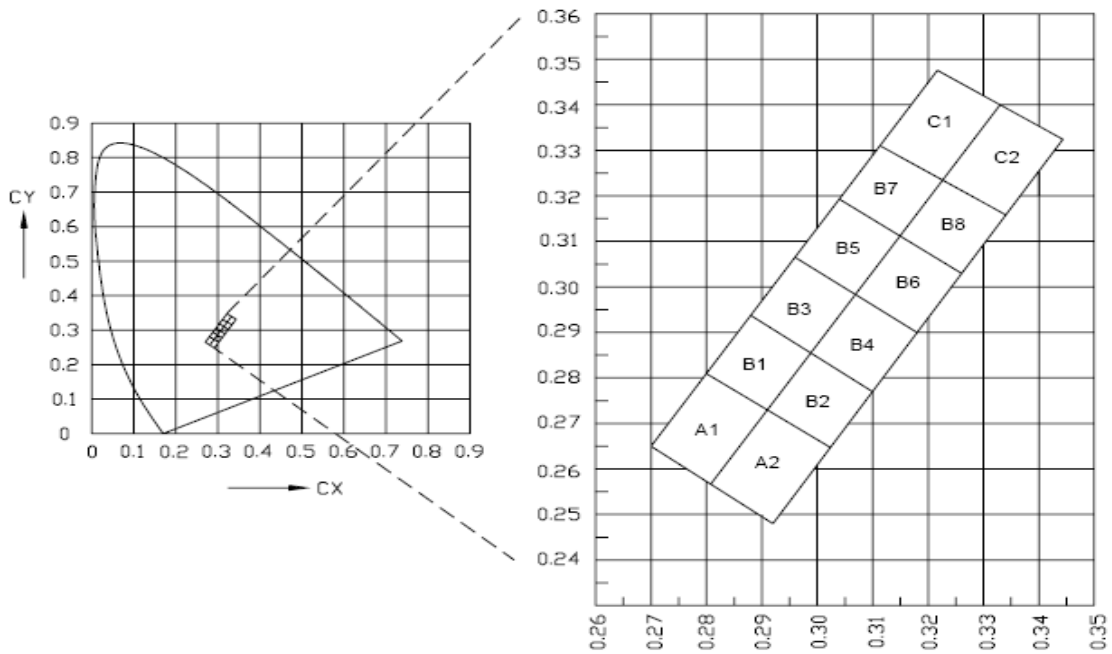
Chromaticity Coordinates:

COLOR RANKS(IF=20Ma. Ta=25°C)

BiN	RANK					BiN	RANK				
A1	X	0.27	0.28	0.291	0.281	B5	X	0.296	0.304	0.315	0.307
	Y	0.265	0.282	0.273	0.256		Y	0.307	0.319	0.311	0.298
A2	X	0.281	0.291	0.302	0.292	B6	X	0.307	0.315	0.326	0.318
	Y	0.256	0.273	0.265	0.248		Y	0.298	0.311	0.303	0.29
B1	X	0.28	0.288	0.299	0.291	B7	X	0.304	0.312	0.323	0.315
	Y	0.282	0.294	0.286	0.273		Y	0.319	0.331	0.323	0.311
B2	X	0.291	0.299	0.31	0.302	B8	X	0.315	0.323	0.334	0.326
	Y	0.273	0.286	0.277	0.265		Y	0.311	0.323	0.315	0.303
B3	X	0.288	0.296	0.307	0.299	C1	X	0.312	0.322	0.333	0.323
	Y	0.294	0.307	0.298	0.286		Y	0.331	0.348	0.34	0.323
B4	X	0.299	0.307	0.318	0.31	C2	X	0.323	0.333	0.344	0.334
	Y	0.286	0.298	0.29	0.277		Y	0.323	0.34	0.332	0.315

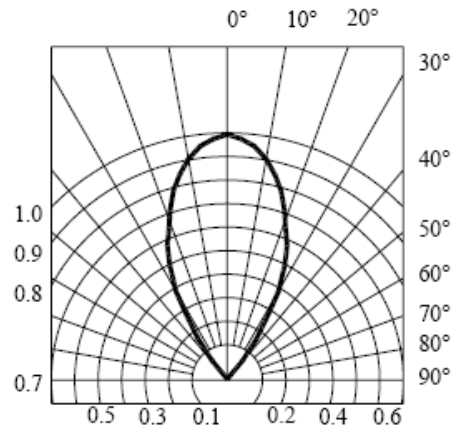
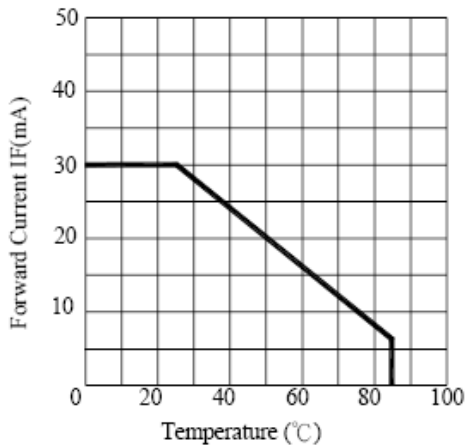
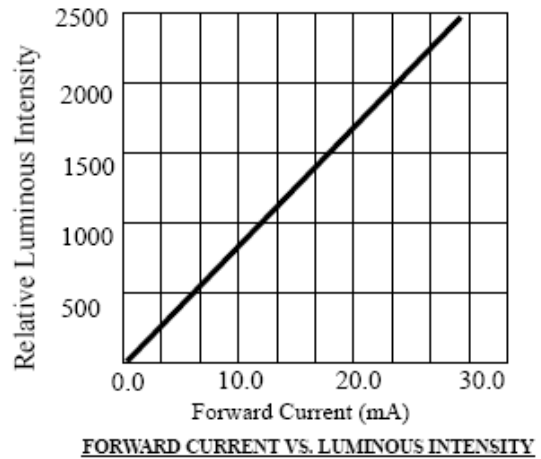
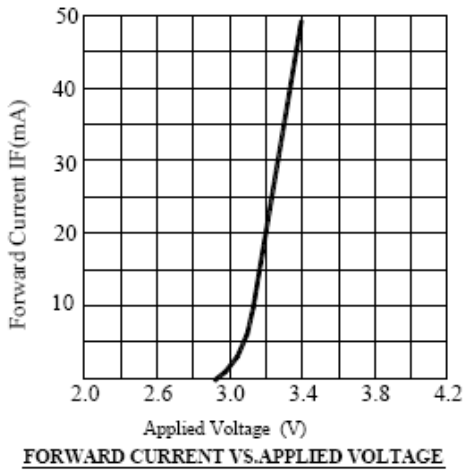
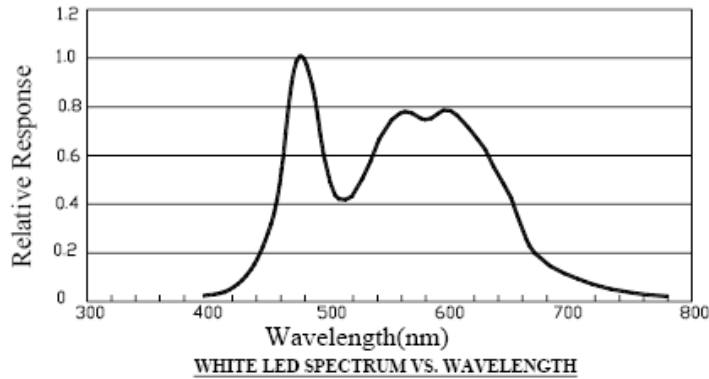
Notes: X, Y Tolerance each Bin limit is ± 0.01 .

Chromaticity Coordinates & Bin grading diagram :



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Characteristic Curves



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Specifications for Bin Grading:

Iv(mcd)		
Bin	Min	Max
H	700	1000
J	1000	1400
K	1400	1950
L	1950	2750
M	2750	4800

Specifications for Vf Group:

Vf(V)		
Bin	Min	Max
2	2.8	3.0
3	3.0	3.2
4	3.2	3.4
5	3.4	3.6

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Precautions

TAKE NOTE OF THE FOLLOWING IN USE OF LED

1. Temperature in use

Since the light generated inside the LED needs to be emitted to outside efficiently, a resin with high light transparency is used ; therefore , additives to improve the heat resistance or moisture resistance(silica gel, etc) which are used for semiconductor products such as transistors cannot be added to the resin. Consequently ,the heat resistant ability of the resin used for LED is usually low ; therefore, please be careful on the following during use.

Avoid applying external force ,stress ,and excessive vibration to the resins and terminals at high temperature. The glass transition temperature of epoxy resin used for the LED is approximately 120-130°C .

At a temperature exceeding this limit, the coefficient of liner expansion of the resin doubles or more compared to that at normal temperature and the resin is softened. If external force or stress is applied at that time, it may cause a wire rupture.

2. Soldering

Please be careful on the following at soldering. After soldering, avoided applying external force, stress, and excessive vibration until the products go to cooling process(normal temperature),<Same for products with terminal leads>

(1) Soldering measurements:

Distance between melted solder side to bottom of resin shall be 1.6mm or longer.

(2) Dip soldering:

Pre-heat:90°C max.(Backside of PCB),Within 60 seconds. Solder bath:260±5°C (solder temperature), Within 5 seconds.

(3) Hand soldering:350°C max.(Temperature of soldering iron tip), Within 3 seconds.

3. Insertion

Pitch of the LED leads and pitch of mounting holes need to be same.

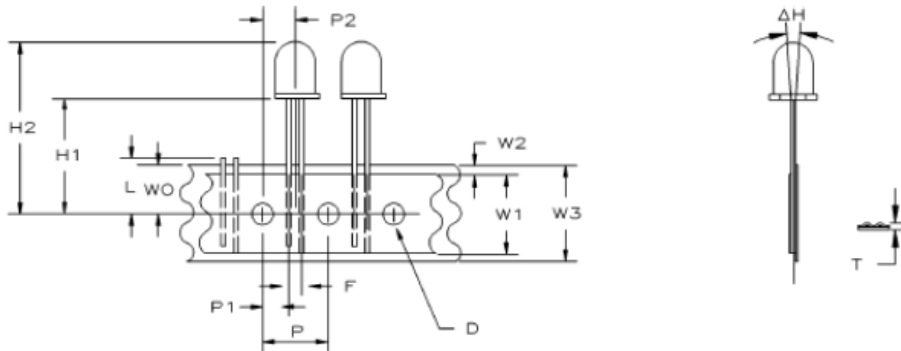
4. Others

Since the heat resistant ability of the LED resin is low, SMD components are used on the same PCB, please mount the LED after adhesive baking process for SMD components. In case adhesive baking is done after LED lamp insertion due to a production process reason, make sure not to apply external force, stress, and excessive vibration to the LED and follow the conditions below.

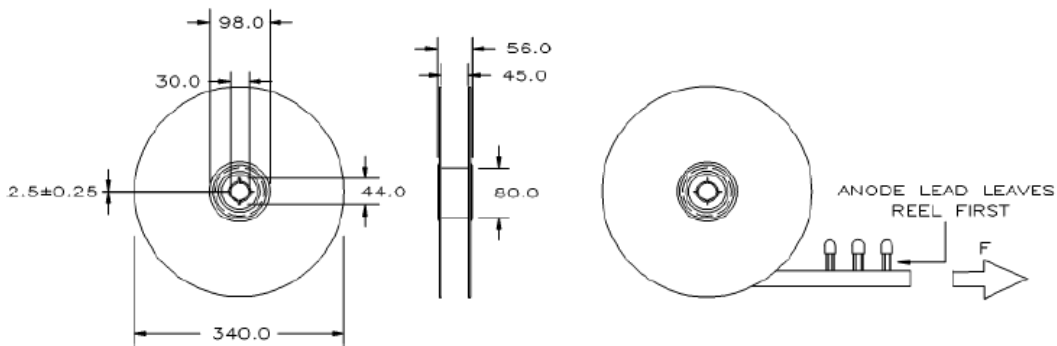
Baking temperature:120°C max. Baking time: Within 60 seconds. If soldering is done sequentially after the adhesive baking, please perform the soldering after cooling down the LED to normal temperature.

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Tape dimensions



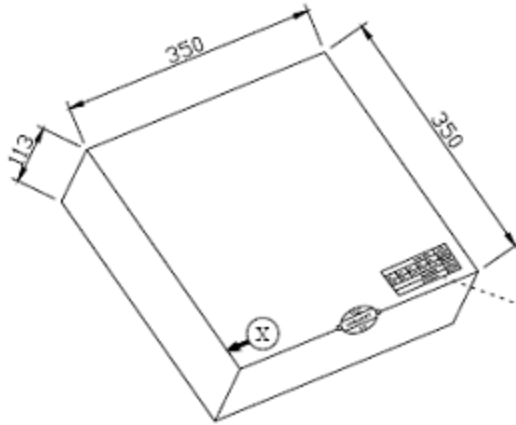
PART NUMBER	SYMBOL	SPECIFICATION		PART NUMBER	SYMBOL	SPECIFICATION	
		MINIMUM (mm)	MAXIMUM (mm)			MINIMUM (mm)	MAXIMUM (mm)
SAME SPECIFICATION FOR ALL LAMPS	D	3.8	4.2	SAME SPECIFICATION FOR ALL LAMPS	P	12.4	13.0
	F	2.3	3.0		P1	4.4	5.8
	ΔH	-----	2.0		P2	5.05	7.65
	H2	-----	34.2		T	-----	1.42
	L	W0	11.0		W0	8.75	9.5
LTXXXX-XX-TAA	H1	19.5	20.5		W1	14.5	15.5
LTXXXX-XX-TAB		22.0	23.0		W2	0	4.0
LTXXXX-XX-TAC		24.5	25.5		W3	17.5	19.0



Note: All Dimensions are in mm, tolerance is +/- 2mm

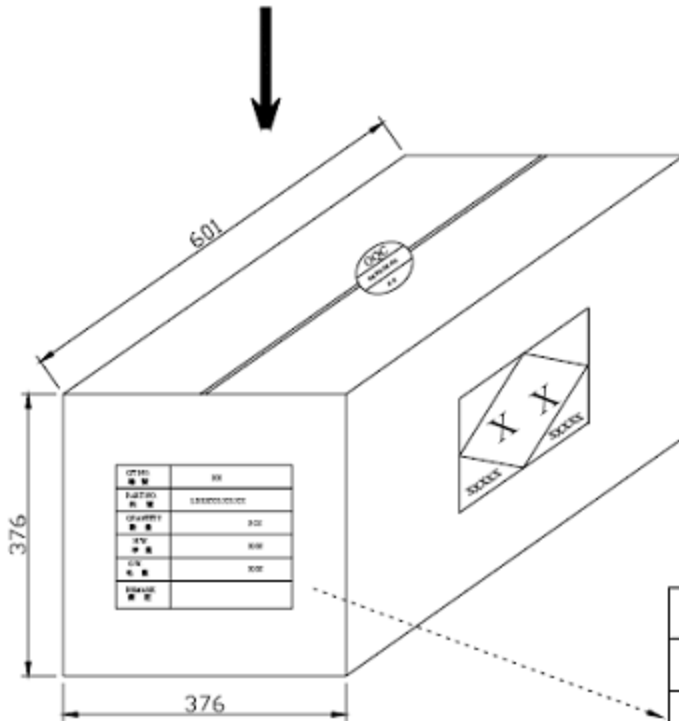
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Packing



SMALL CARTON
QUANTITY: 2000 PCS

PART NO.	XXXXX-XX-XX				
LOT NO.	XXXXXXXXXX				
BIN CODE	XxX	XxX	XxX	XxX	TOTAL
QUANTITY	PCS	PCS	PCS	PCS	PCS
DATE	XXXX.XX.XX				



SMALL CARTON
QUANTITY: 10,000 PCS

C/T NO. 箱號	XX
PART NO. 料號	XXXXX-XX-XX
QUANTITY 數量	PCS
N.W. 淨重	EGS
G.W. 毛重	EGS
REMARK 備註	

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Revision History

Changes since last revision	Page	Version No.	Revision Date
Initial Release of sample off 5394		1.0	07-24-2009
Specification changes		1.1	03-21-2011
Update precautions		1.2	10-27-2011
Add the Bin Grading and Vf Group	8/10	1.3	3-7-2012

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