Harvatek 3.1mm Round LED LAMP with Holder

HV-311050/305/SYG-TR1

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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.

Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified
RoHS Compliant

Orderable Information

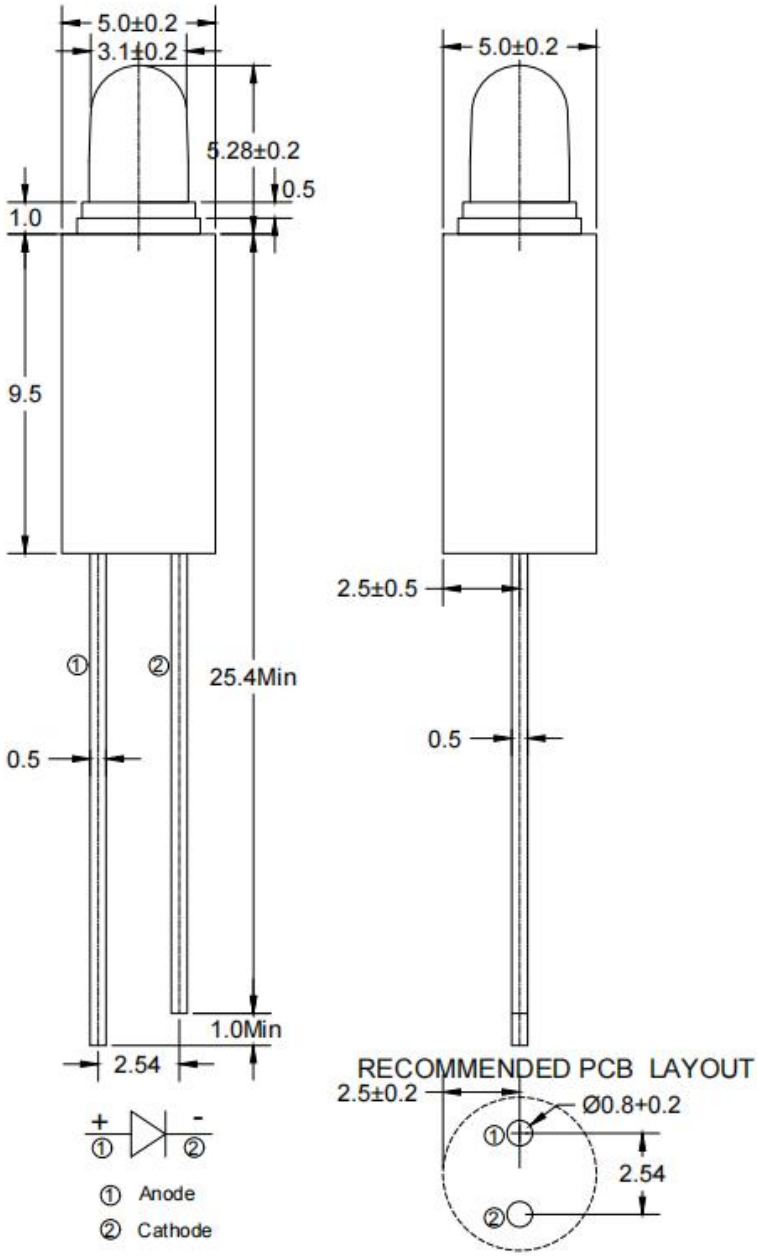
H V - 311050 / 305 / SYG - TR1

Series Name	Color Code	Remark
HV : **HARVATEK**	**311050:Array 1 Lamp** **305:** **3.1mm Round LED LAMP.** **SYG:** **GaP 570nm Green Chip.** **TR1: HARVATEK Part No.**	

Features:

- Stable Color
- Popular 3.1mm through hole package.
- Green Diffused Lens.

Package Dimensions:



Notes:

1.All dimensions are millimeters.

2.Tolerance is +/-0.25mm unless otherwise noted.

3.Specifications are subject to change without notice.

Absolute Maximum Ratings at Ta=25℃

Parameter	Symbol	Rating	Unit
Forward Current	I_F	30	mA
Operating Temperature	Topr	-40to+85	℃
Storage Temperature	Tstg	-40to+85	℃
Soldering Temperature*1	Tsol	260±5	℃
Power Dissipation	P_d	75	mW
Reverse Voltage	V_R	5	V
Peak Forward Current*2	I_{FP}	75	mA

*1:Soldering time ≦ 5 seconds. *2:Pulse Width≦ 100μs and Duty≦ 1%

Electrical and Optical Characteristic

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F=10 mA	／	2.0	2.4	V
Reverse Current	I_R	V_R= 5 V	／	／	10	μA
Luminous Intensity	I_V	I_F=10 mA	6.0	18	／	mcd
Viewing Angle	2θ½	I_F=10 mA	／	60	／	deg
Dominant Wavelength	λ_d	I_F=10 mA	／	570	／	nm
Peak Wavelength	λρ	I_F=10 mA	／	575	／	nm
Spectrum Radiation Bandwidth	Δλ	I_F=10 mA	／	20	／	nm

Notes:

θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

Specifications for Bin Grading

Iv (mcd)		
Grade	Min.	Max.
K	6.0	12.5
L	10	20
M	16	32
N	25	50
P	40	80

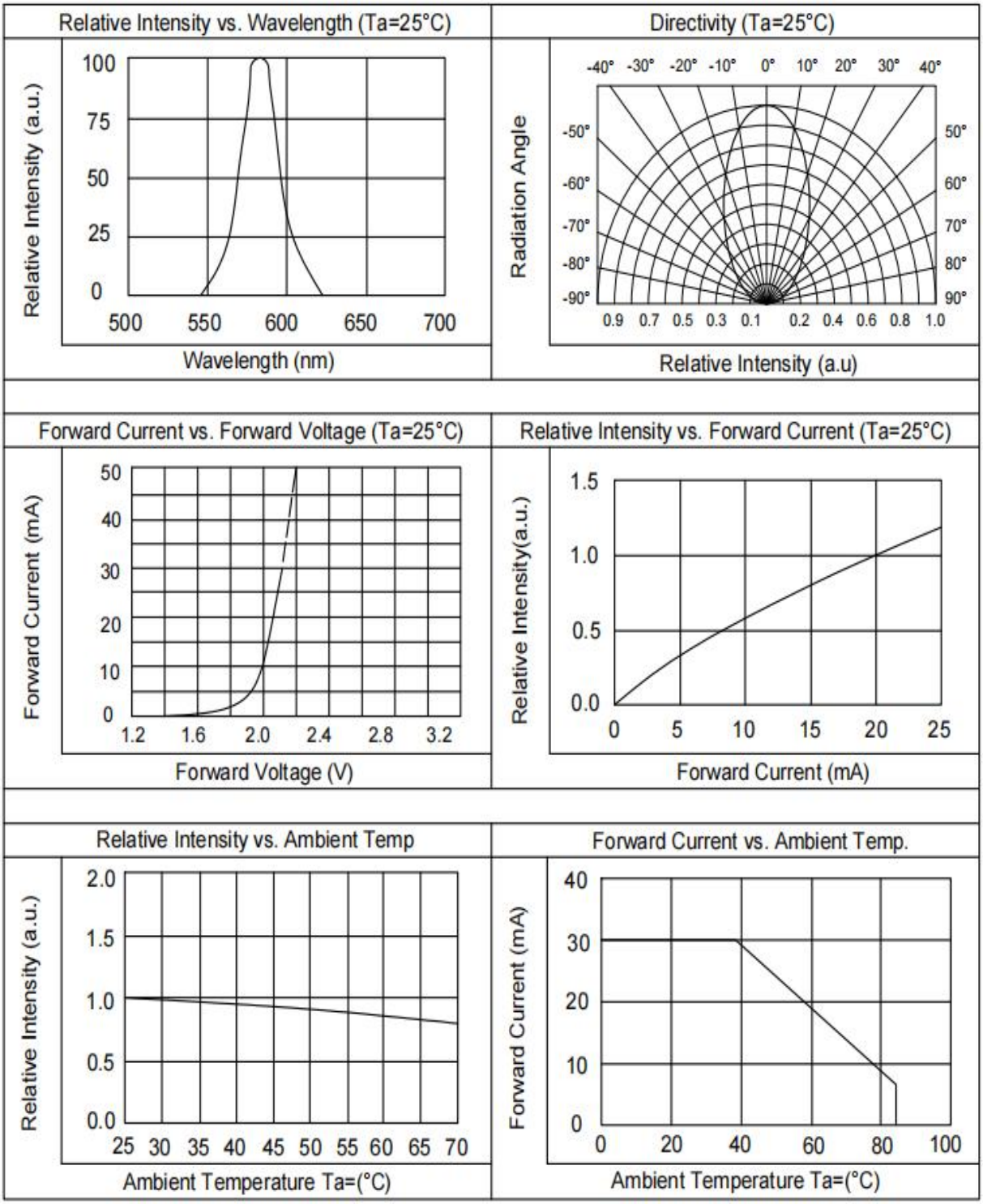
λd (nm)		
Grade	Min.	Max.
5	566	569
6	568	571
7	570	573
8	572	575
9	574	577

Notes:

1.Luminous intensity:+/-15%.

2.Wavelength: +/-1nm.

Typical Electrical / Optical Characteristics Curves

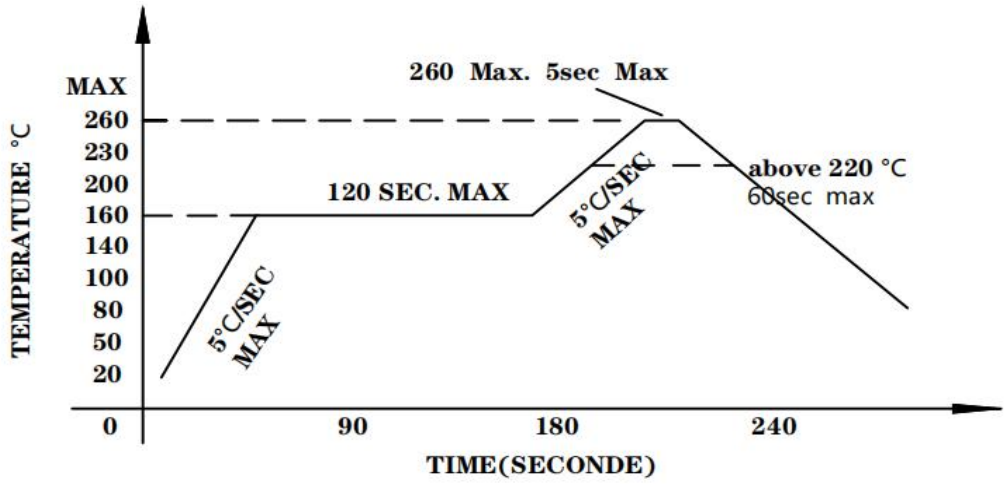


Soldering condition

1. Careful attention should be paid during soldering. When soldering, leave more then 2mm from solder joint to Led, and soldering beyond the base of the tie bar is recommended.
2. Avoiding applying any stress to the lead frame while the LED are at high temperature particularly when soldering.
3. Dip and hand soldering should not be done more than one time.
4. After soldering the LED, the epoxy bulb should be protected from mechanical shock or vibration until the LED return to room temperature.
5. A rapid-rate process is not recommended for cooling the LED down from the peak temperature.
6. Although the recommended soldering conditions are specified in the above table, dip or hand soldering at the lowest possible temperature is desirable for the LED.
7. Wave soldering parameter must be set and maintain according to recommended temperature and dwell time in the solder wave.

- **Recommended soldering conditions**

Hand Soldering		Wave Soldering	
Temp. at tip of iron	300℃ Max. (30W Max.)	Preheat temp.	160℃ Max. (120 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260 Max., 5 sec Max
Distance	2mm Min.(From solder joint to Led)	Distance	2mm Min. (From solder joint to Led)



Reliability test items and conditions：

The reliability of products shall be satisfied with items listed below.
Confidence level：97%
LTPD:3%

No	Item	Test Conditions	Test Hours/Cycle	Sample Size	Failure Judgment Criteria	Ac/Er
1	Solder Heat	TEMP:260℃±5℃	10 SEC	76 PCS	Iv≦Ivt*0.5 or Vf≧U or Vf≦L	0/1
2	Temperature Cycle	H:+100℃ 15min ∫ 5min L:-40℃ 15min	300 CYCLES	76 PCS		0/1
3	Thermal Shock	H:+100℃ 5min ∫ 10sec L:-10℃ 5min	300 CYCLES	76 PCS		0/1
4	High Temperature Storage	TEMP:100℃	1000 HRS	76 PCS		0/1
5	Low Temperature Storage	TEMP:-40℃	1000 HRS	76 PCS		0/1
6	DC Operating Life	TEMP:25℃ IF=20mA	1000 HRS	76 PCS		0/1
7	High Temperature / High Humidity	85℃/85%RH	1000 HRS	76 PCS		0/1

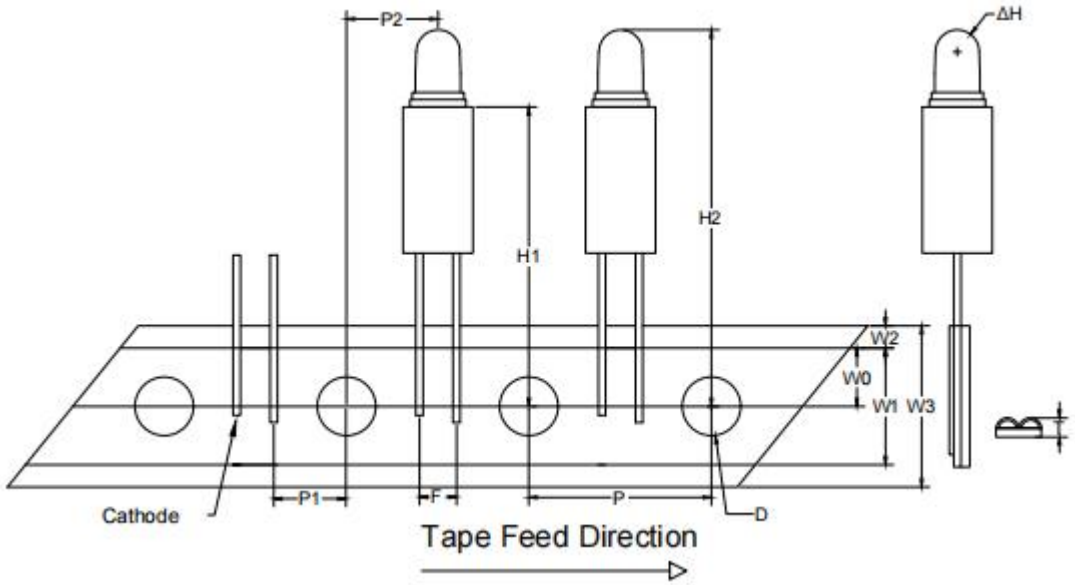
Note：Ivt：To test Iv value of the chip before the reliability test.

Iv：The test value of the chip that has completed the reliability test

U：Upper Specification Limit

L：Lower Specification Limit

Carrier Tape Dimensions:



Notes:

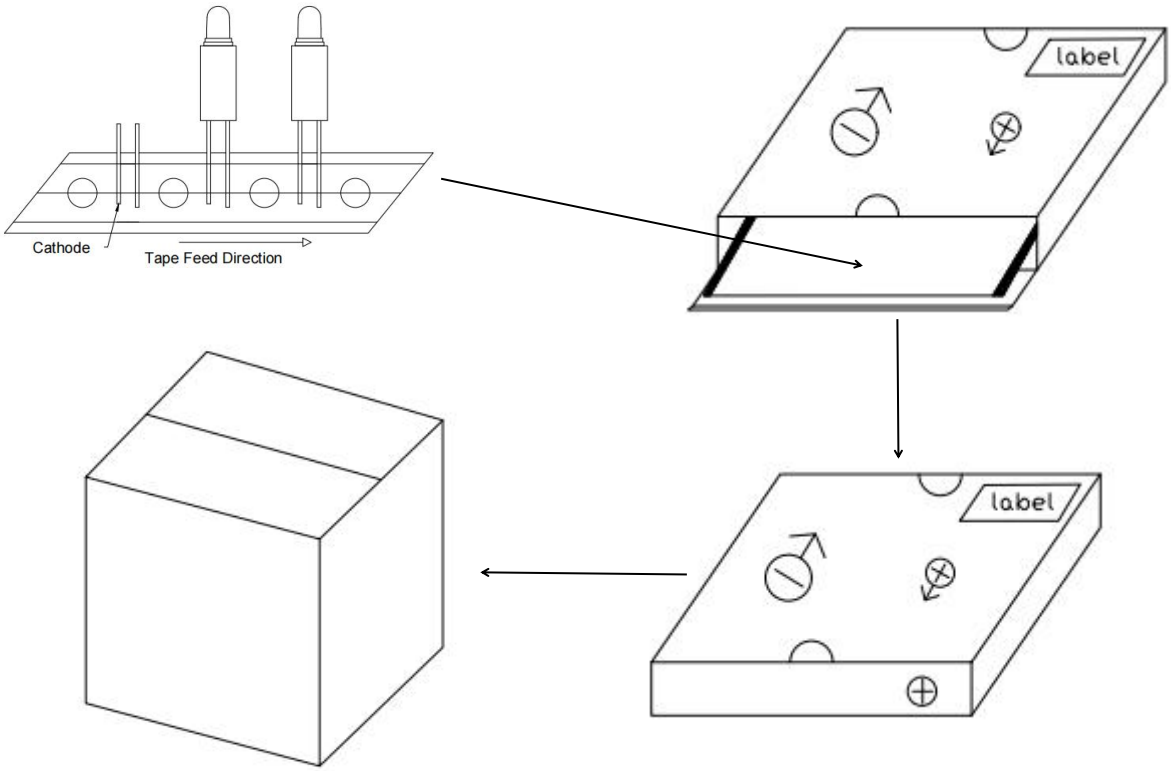
Lead spacing is measured where the lead emerge from the package.

Taping Sizes

Symbol Items	Symbol	Specifications		
		Avg.		Tolerance
		mm	Inch	(mm)
Tape Feed Hole Diameter	D	4	0.157	±0.2
Component Lead Pitch	F	2.54	0.100	±1.0
Front-to-Read Deflectio	ΔH	2	0.079	±5°
Feed Hole to Button of Component	H1	26	1.024	±1.0
Feed Hole to Overall Component Height	H2	31.28	1.231	±1.0
Feed Hole Pitch	P	12.5	0.492	±0.3
Lead Location	P1	5	0.197	±1.0
Center of Component Location	P2	6.25	0.246	±1.2
Overall Taped Package Thickness	T	1.42	0.056	MAX
Feed Hole Location	W0	6.5	0.256	±0.5
Adhesive Tape Width	W1	13	0.512	±1.0
Adhesive Tape Position	W2	2.5	0.098	±1.0
Tape Width	W3	18	0.709	±1.0

Note: Tolerances unless mentioned ±0.1mm. Unit = mm

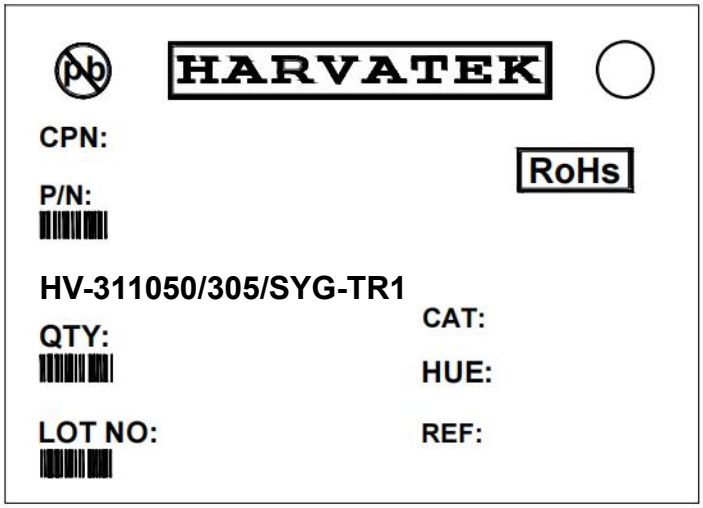
Packing Specification:



Packing Quantity：2500 PCS/In-Carton, 25000PCS/Out-Carton

Note:

After packing into the box, the head is located in the box large negative symbol upward, positive symbol facing themselves



Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	12-20-2021