

**Harvatek 3.0mm Round LED LAMP with Holder  
HV-I7US50H-MP9A**

Official Product	HV-I7US50H-MP9A	Customer Part No.		Data Sheet No.
	*****	*****		HV-I7US50H-MP9A
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov. 11 2019	Version of 1.2	Page 1/11

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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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## Compliance and Certification

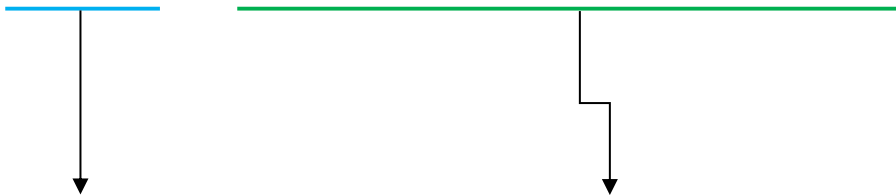
ISO9002, QS9000 and ISO14001 Certified

RoHS Compliant



## Orderable Information

**H V - I7 US50 H - M P9 A**

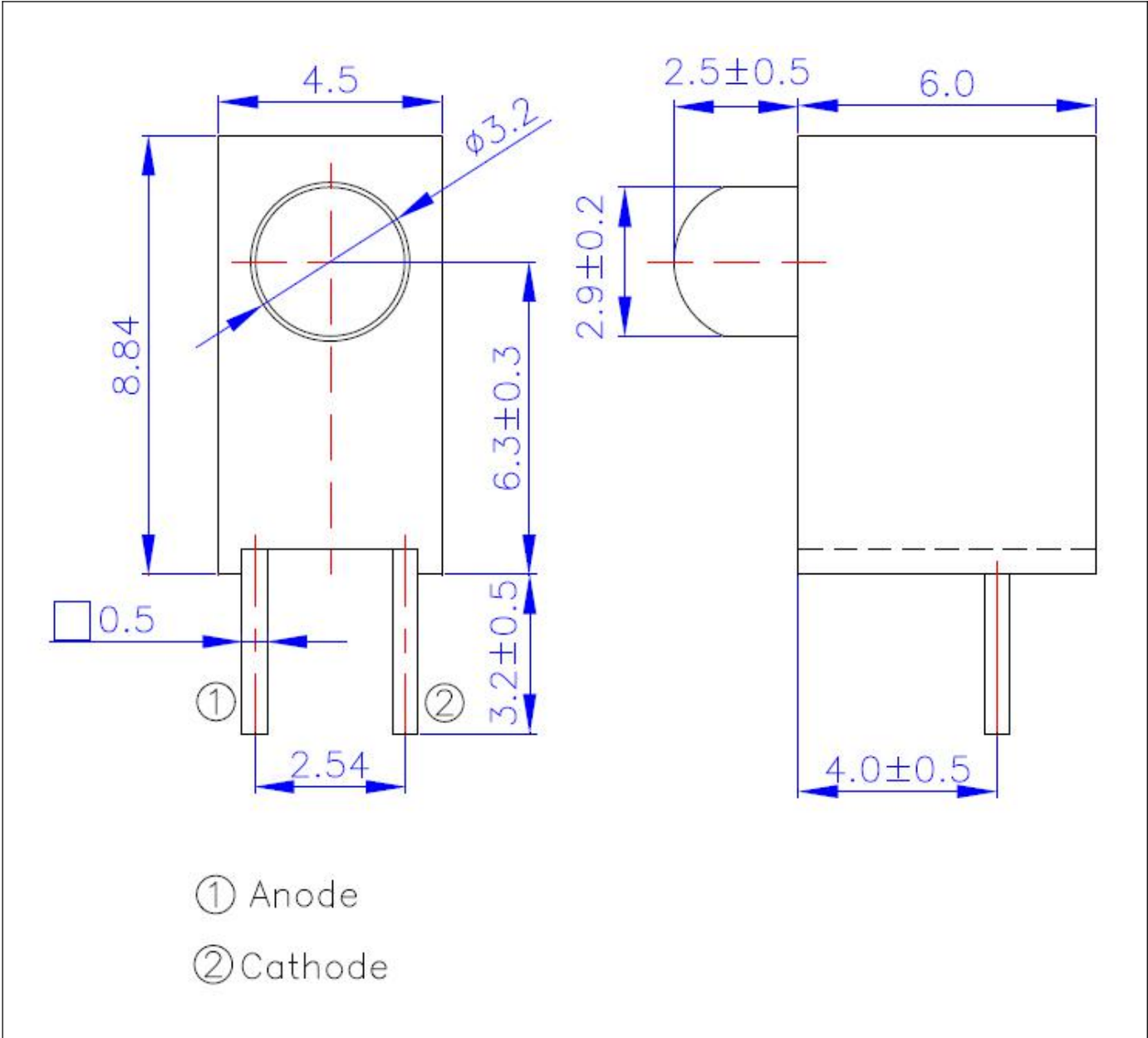


Series Name	Color Code	Remark
HV : HARVATEK	I7US : 3.0mm Round LED Lamp With Holder. With AlGaInP 625nm Red Chip. 50 : Viewing angle 50 deg. H : HARVATEK Part No. MP9 : Square HOLDER. A : 1 LAMP	

## Features:

- Stable Color
- Popular 3.0mm through hole package.
- Red Diffused lens

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**Notes:**

- 1.All dimensions are millimeters.
- 2.Tolerance is +/-0.25mm unless otherwise noted.
- 3.Specifications are subject to change without notice.

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## Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Forward Current	I <sub>F</sub>	30	mA
Operating Temperature	Topr	-40to+85	°C
Storage Temperature	Tstg	-40to+100	°C
Soldering Temperature*1	Tsol	260±5	°C
Power Dissipation	Pd	75	mW
Reverse Voltage	V <sub>R</sub>	5	V
Peak Forward Current*2	I <sub>FP</sub>	0.1	A

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

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**Electrical and Optical Characteristic**

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	$V_F$	$I_F=20\text{ mA}$	/	2.0	2.5	V
Reverse Current	$I_R$	$V_R= 5\text{ V}$	/	/	10	$\mu\text{A}$
Luminous Intensity	$I_V$	$I_F=20\text{ mA}$	60	180	7200	mcd
Viewing Angle	$2\theta_{1/2}$	$I_F=20\text{ mA}$	/	50	/	deg
Dominant Wavelength	$\lambda_d$	$I_F=20\text{ mA}$	618	625	632	nm
Peak Wavelength	$\lambda_p$	$I_F=20\text{ mA}$	627	632	/	nm
Spectrum Radiation Bandwidth	$\Delta\lambda$	$I_F=20\text{ mA}$	/	25	/	nm

Notes: $\theta_{1/2}$  is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

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**Specifications for Bin Grading:**

Iv (mcd)		
Grade	Min.	Max.
Q	60	125
R	100	200
S	160	320
T	250	500
U	400	800
V	630	1250
W	1000	2000
X	1600	3200
Y	2500	4500
Z	3900	7200

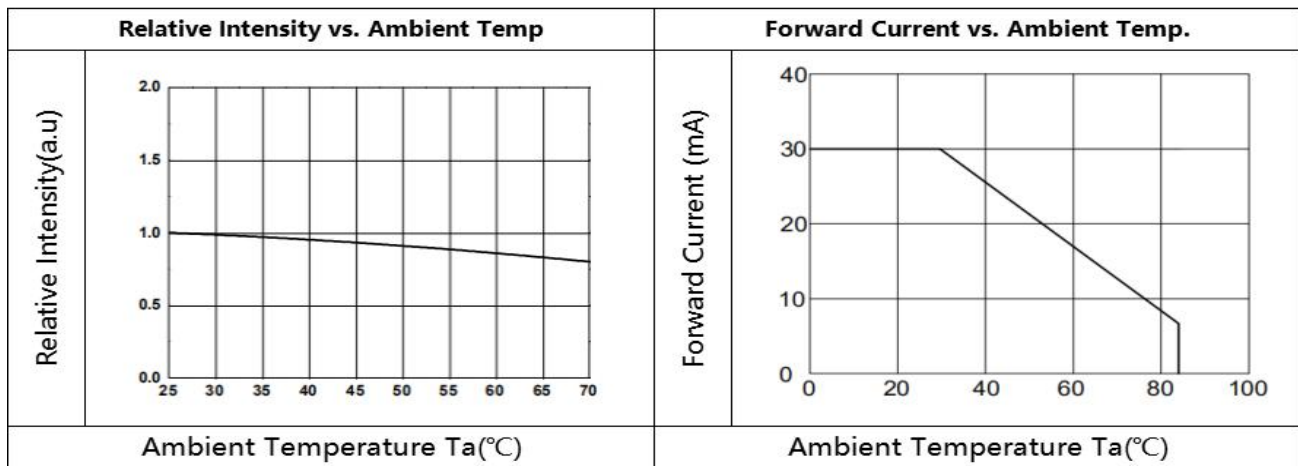
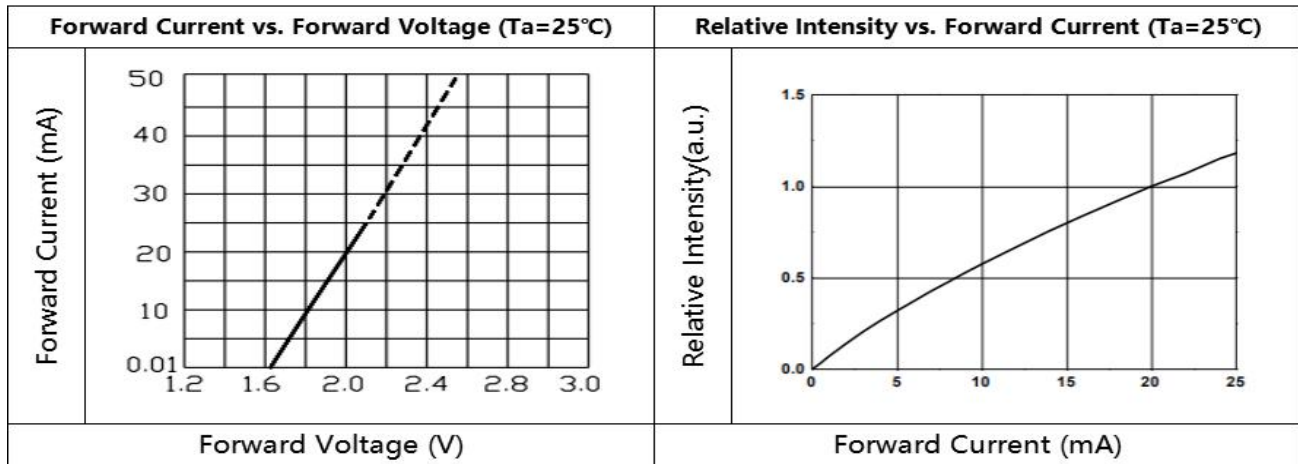
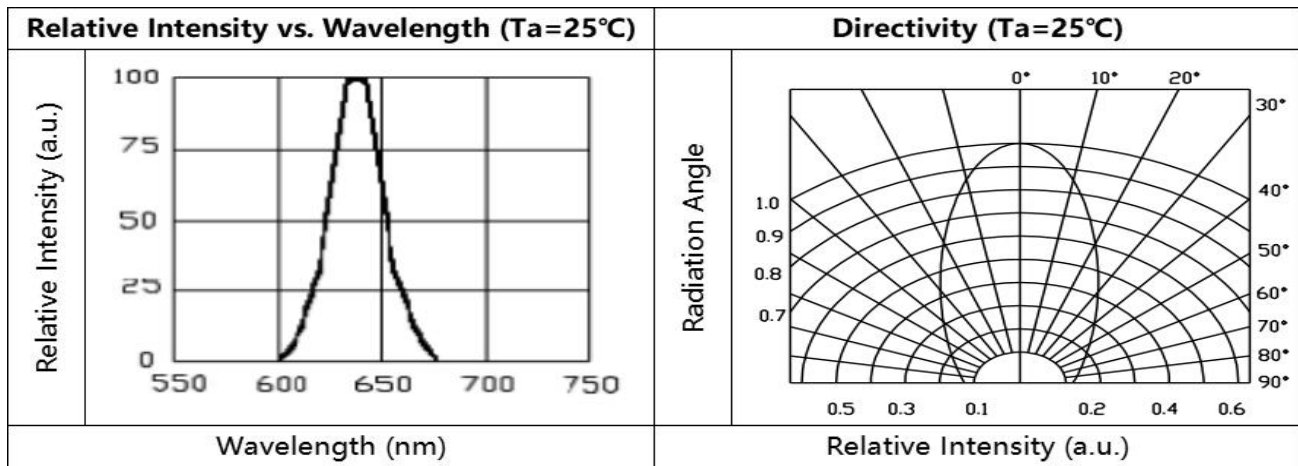
$\lambda d$ (nm)		
Grade	Min.	Max.
01	618	621
1	620	623
2	622	625
3	624	627
4	626	629
5	628	632

Notes:

- 1.Luminous intensity: +/-15%.
- 2.Wavelength: +/-1nm.

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### Typical Electro-Optical Characteristics Curves



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### 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°C±5°C	10 SEC	76 PCS	$I_v \leq I_{vt} * 0.5$ or $V_f \geq U$ or $V_f \leq L$	0/1
2	Temperature Cycle	H:+100°C 15min ∫ 5min L:-40°C 15min	300 CYCLES	76 PCS		0/1
3	Thermal Shock	H:+100°C 5min ∫ 10sec L:-10°C 5min	300 CYCLES	76 PCS		0/1
4	High Temperature Storage	TEMP:100°C	1000 HRS	76 PCS		0/1
5	Low Temperature Storage	TEMP:-40°C	1000 HRS	76 PCS		0/1
6	DC Operating Life	TEMP:25°C IF=20mA	1000 HRS	76 PCS		0/1
7	High Temperature / High Humidity	85°C/85%RH	1000 HRS	76 PCS		0/1

Note:  $I_{vt}$ : To test  $I_v$  value of the chip before the reliability test.

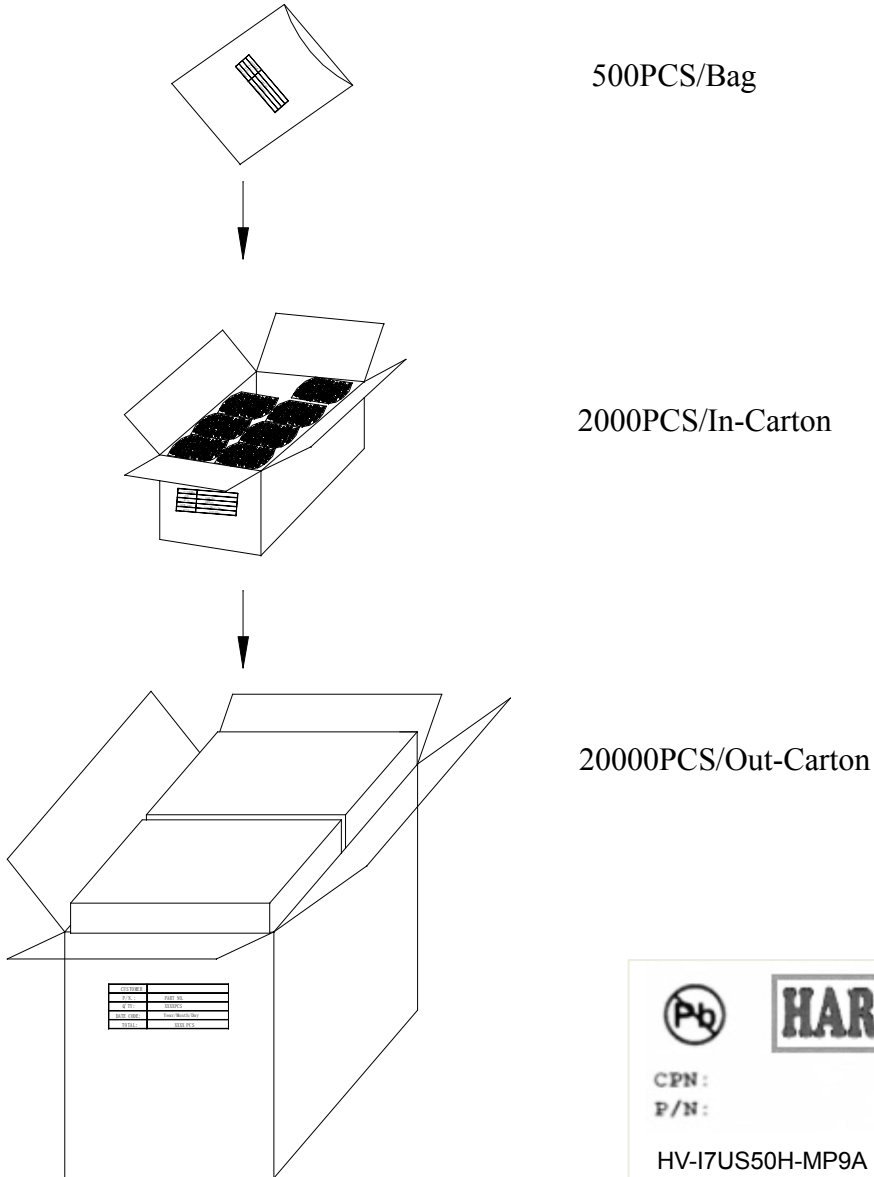
$I_v$ : The test value of the chip that has completed the reliability test

U: Upper Specification Limit

L: Lower Specification Limit

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## Packing Specification:



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**Revision History**

Revision	Page	Version No.	Revision Date
Initial Release		1.0	12-14-2017
Modifies Dominant Wavelength	6	1.1	11-11-2018
Modifies Dominant Wavelength	6	1.2	11-11-2019

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