

Harvatek 3.0mm Round LED LAMP**HV-46W7414M-L50-TR1-U1780**

Official Product	HV-46W7414M-L50-TR1-U1780	Customer Part No.	Data Sheet No.
	*****	*****	HV-46W7414M-L50-TR1-U1780
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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.

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Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified
RoHS Compliant



Orderable Information

H V - 46W 7414 M - L50 - TR1 - U1780

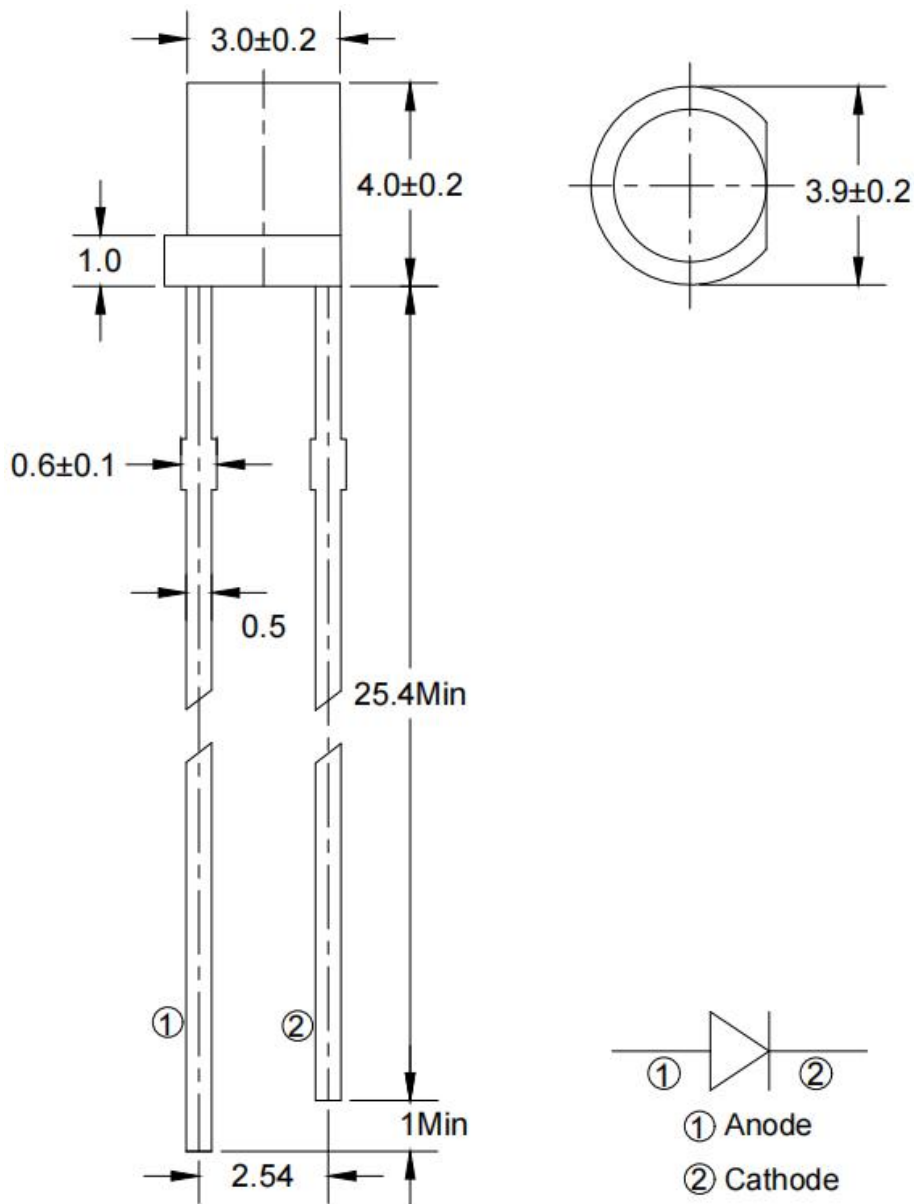
Series Name	Color Code	Remark
HV : HARVATEK	46W7414: 3.0mm Round LED LAMP,4.0mm Lens. InGaN 455nm White Chip. M : White Diffused. L50: HARVATEK Part No. TR1: Taping Reel.	U1780: Customer Product Code

Features:

- Stable Color.
- Popular 3.0mm through hole package, 4.0mm lens height.
- White Diffused lens.

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Package Dimensions:



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 _F	30	mA
Operating Temperature	T _{opr}	-40to+85	°C
Storage Temperature	T _{stg}	-40to+85	°C
Soldering Temperature*1	T _{sol}	260	°C
Power Dissipation	P _d	100	mW
Reverse Voltage	V _R	5	V
Peak Forward Current*2	I _{FP}	100	mA

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

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Electrical and Optical Characteristic

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	IF=5 mA	/	2.8	3.1	V
Reverse Current	I_R	IF=5 mA	/	/	10	μA
Luminous Intensity	I_v	IF=5 mA	280	350	/	mcd
Chromaticity Coordinates	X	IF=5 mA	/	0.28	/	/
	Y	IF=5 mA	/	0.29	/	/
Viewing Angle	$2\theta_{1/2}$	IF=5 mA	/	110	/	deg

Notes:

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

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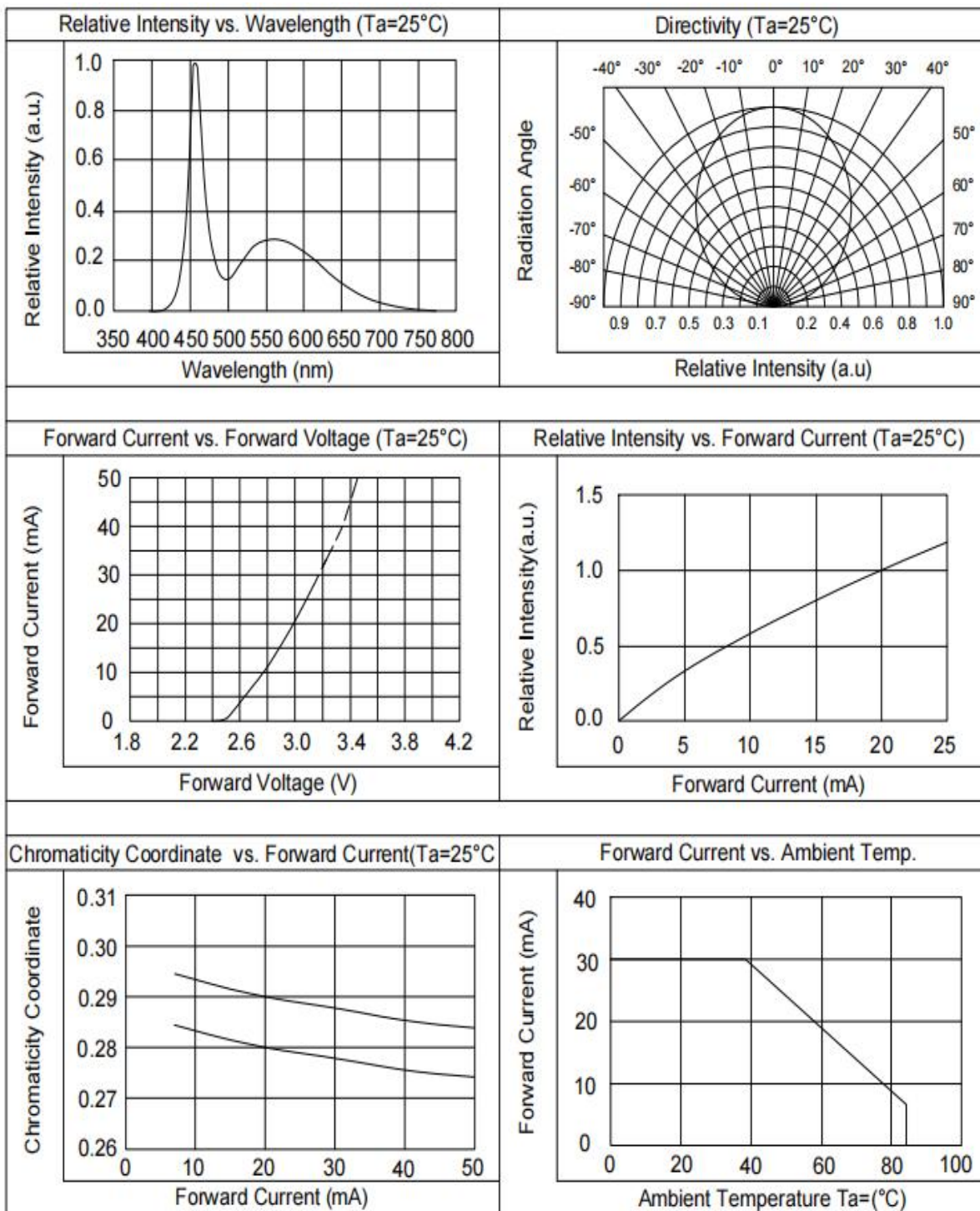
Specifications for Bin Grading:

Iv (mcd) IF=5 mA		
Grade	Min.	Max
T	280	500

Notes: Luminous intensity: +/-15%.

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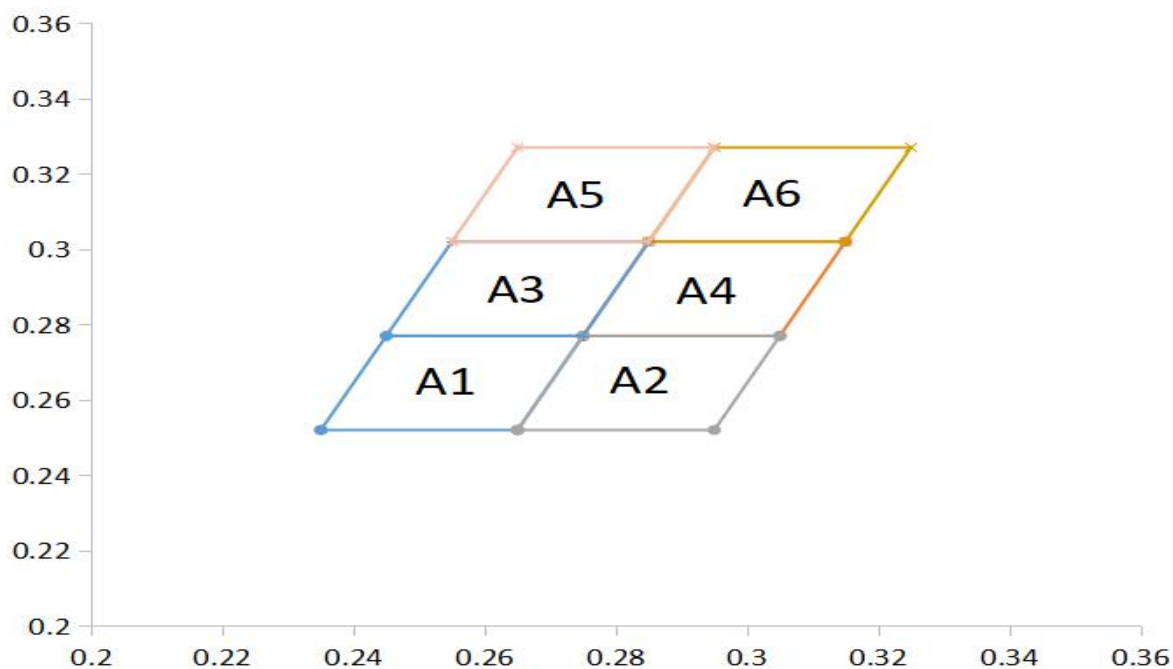
Typical Electrical / Optical Characteristics Curves



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C.I.E. Chromaticity Diagram

A1	X	0.235	0.245	0.275	0.265
	Y	0.252	0.277	0.277	0.252
A2	X	0.265	0.275	0.305	0.295
	Y	0.252	0.277	0.277	0.252
A3	X	0.245	0.255	0.285	0.275
	Y	0.277	0.302	0.302	0.277
A4	X	0.275	0.285	0.315	0.305
	Y	0.277	0.302	0.302	0.277
A5	X	0.255	0.265	0.295	0.285
	Y	0.302	0.327	0.327	0.302
A6	X	0.285	0.295	0.325	0.315
	Y	0.302	0.327	0.327	0.302



Note: Tolerance of each bin limit is ± 0.01 .

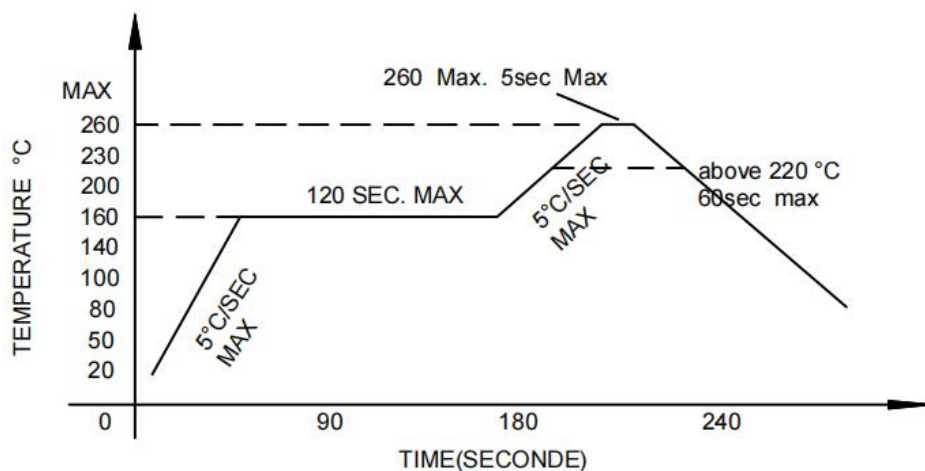
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Soldering condition

- Careful attention should be paid during soldering. When soldering, leave more than 2mm from solder joint to Led, and soldering beyond the base of the tie bar is recommended.
- Avoiding applying any stress to the lead frame while the LED are at high temperature particularly when soldering.
- Dip and hand soldering should not be done more than one time.
- After soldering the LED, the epoxy bulb should be protected from mechanical shock or vibration until the LED return to room temperature.
- A rapid-rate process is not recommended for cooling the LED down from the peak temperature.
- 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.
- 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°C Max. (30W Max.)	Preheat temp.	160°C 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)



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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℃±5℃	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℃ 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: I_{vt} : To test I_v value of the chip before the reliability test.

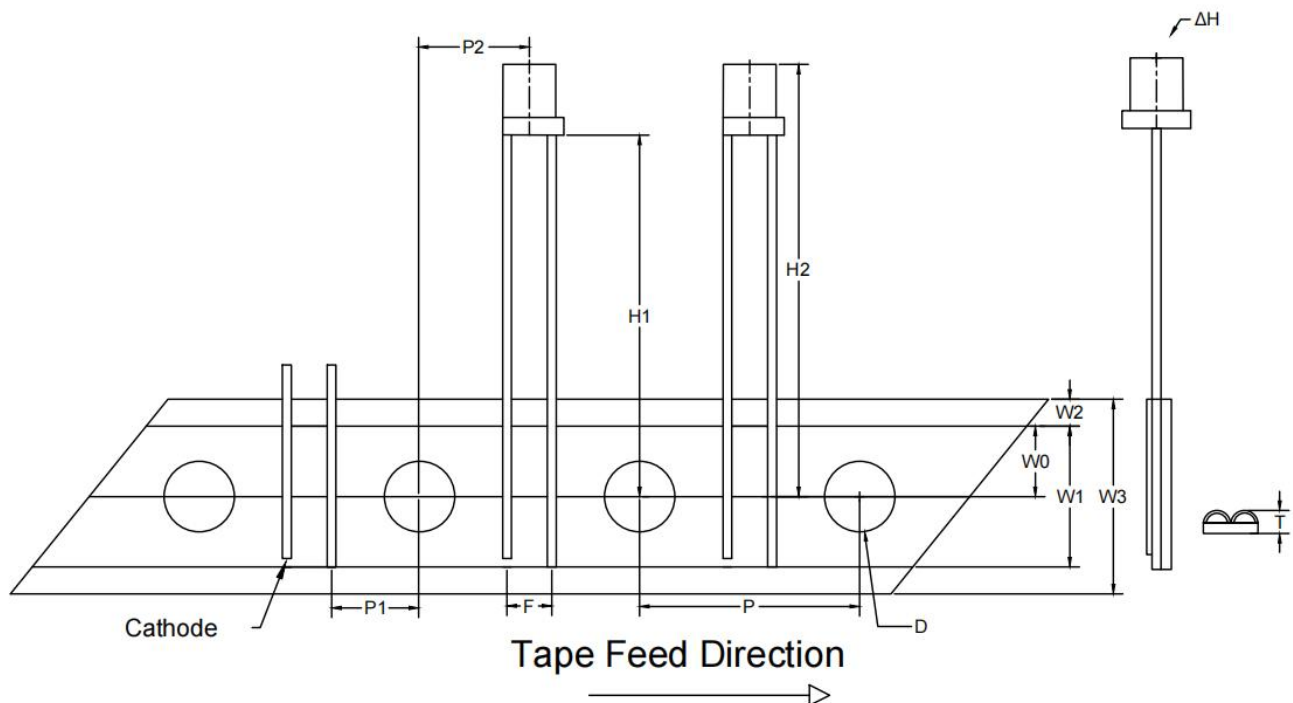
I_v : The test value of the chip that has completed the reliability test.

U: Upper Specification Limit.

L: Lower Specification Limit.

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Carrier Tape Dimensions:



Notes:

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

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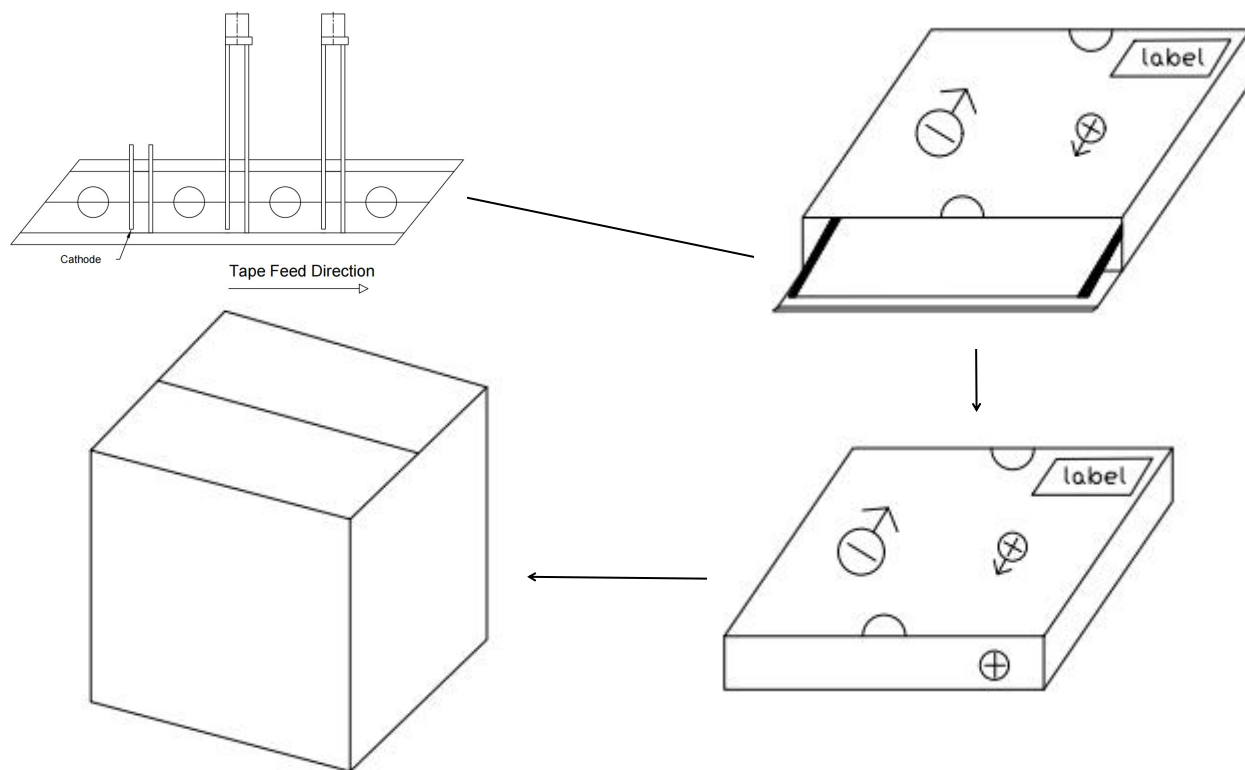
Taping Sizes

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	20.5	0.807	±1.0
Feed Hole to Overall Component Height	H2	24.5	0.965	±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	±0.5
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.

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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

 HARVATEK 	
CPN:	RoHS
P/N:	
HV-46W7414M-L50-TR1-U1780	
QTY:	CAT:
LOT NO:	HUE:
	REF:

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Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	11-24-2022
Modify parameters	6	1.1	11-28-2022
Modify the parameters and grades	6/7	1.2	02-10-2023

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