

**Harvatek 0.28" Dual Digit Display
HCD89928**

Official Product	HCD89928	Customer Part No.		Data Sheet No.
	*****	*****		HCD89928
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Revision History

Revision	Page	Version No.	Revision Date
DS original		1.0	2024-01-04
Add phosphors tape thickness and slip out tolerances		1.1	2024-06-03
Update spec.		1.2	2024-06-05

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DESCRIPTION

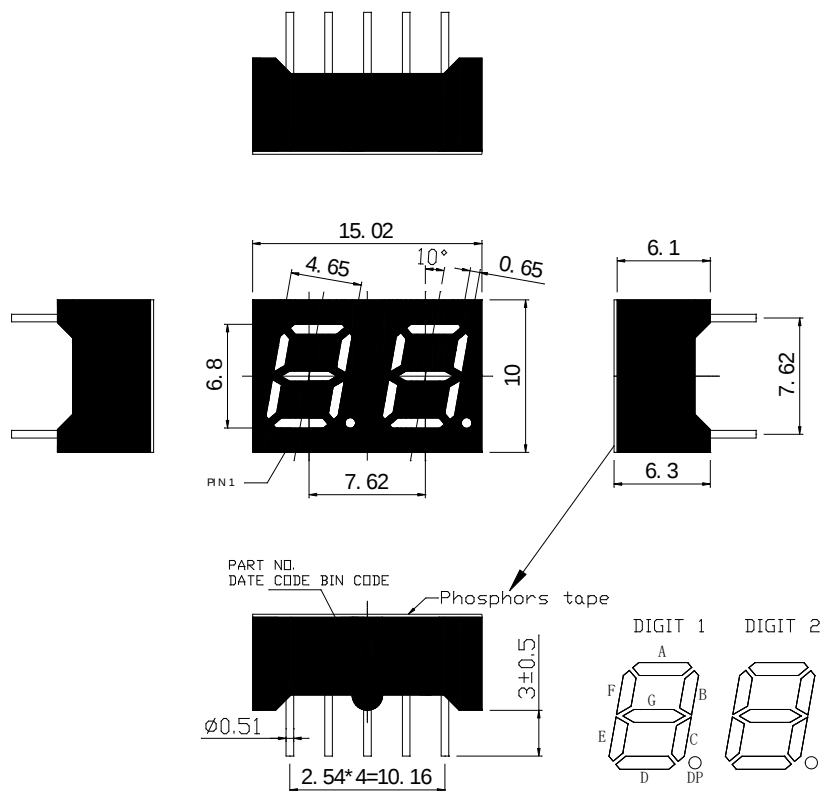
This device is a 0.28 inch (7 mm) digit height dual digit seven segment display, This device utilizes Blue LED chips, which are made from InGaN on a transparent Sapphire substrate, The display has black face and white segments with phosphors tape, The left, right, top and bottom four sides brush black ink.

FEATURES

- * 0.28-inch (7 mm) DIGIT HEIGHT
- * CONTINUOUS UNIFORM SEGMENTS
- * LOW POWER REQUIREMENT
- * EXCELLENT CHARACTERS APPEARANCE
- * HIGH BRIGHTNESS & HIGH CONTRAST
- * WIDE VIEWING ANGLE
- * SOLID STATE RELIABILITY
- * CATEGORIZED FOR LUMINOUS INTENSITY
- * LEAD-FREE PACKAGE
- * Compliance with halogen-free (Br < 900ppm, Cl < 900ppm, Br+Cl < 1500ppm)

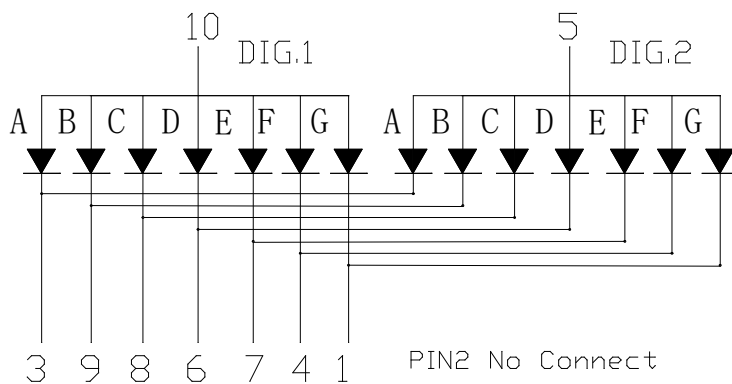
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PACKAGE DIMENSIONS



- NOTES: 1.All dimensions are in millimeters. Tolerances are $\pm 0.25\text{mm}$ (0.01") unless otherwise noted.
 2. Phosphors tape thickness is 0.2mm.
 3. Phosphors tape slip out tolerances is +0.5/-0.3mm

INTERNAL CIRCUIT DIAGRAM



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ABSOLUTE MAXIMUM RATING AT Ta = 25°C
Color:White

PARAMETER	Max.	UNIT
Power Dissipation Per Segment	70	mW
Peak Forward Current (Frequency 1Khz, 10% duty cycle)	100	mA
Continuous Forward Current Per Segment	20	mA
Reverse Voltage Per Segment	5	V
Operating Temperature Range	-30 ⁰ C to +85 ⁰ C	
Storage Temperature Range	-30 ⁰ C to +85 ⁰ C	
Soldering Conditions:Max 260 ⁰ C for max 3sec at 1.6mm below seating plane.		

Electrical / Optical Characteristics (Ta = 25°C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	Iv	3	6		mcd	IF=5mA
Chromaticity coordinate(White)	X		0.27			IF=5mA
	Y		0.25			IF=5mA
Forward Voltage Per Segment	V _F		2.8	3.2	V	IF=5mA
Reverse Current Per Segment	I _R			10	μA	V _R =5V
Luminous Intensity Matching Ratio	Iv-m			2:1		IF=5mA

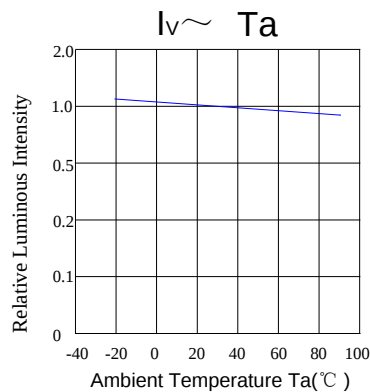
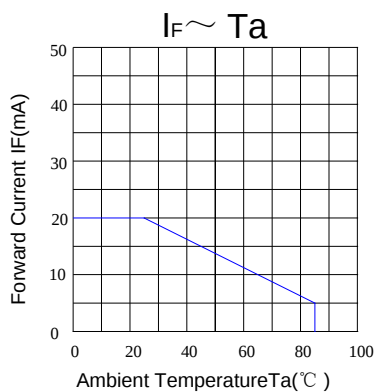
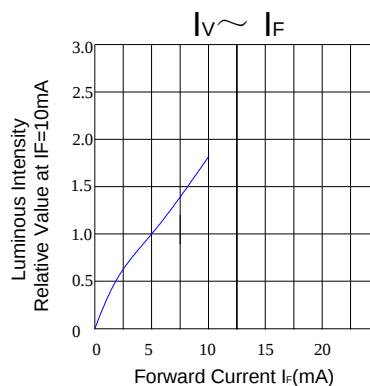
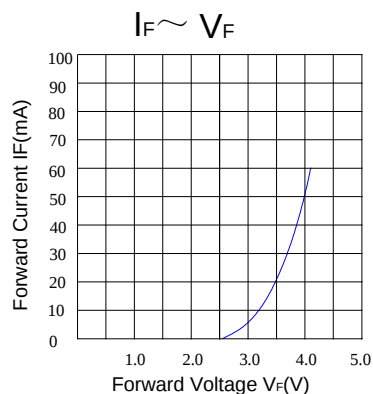
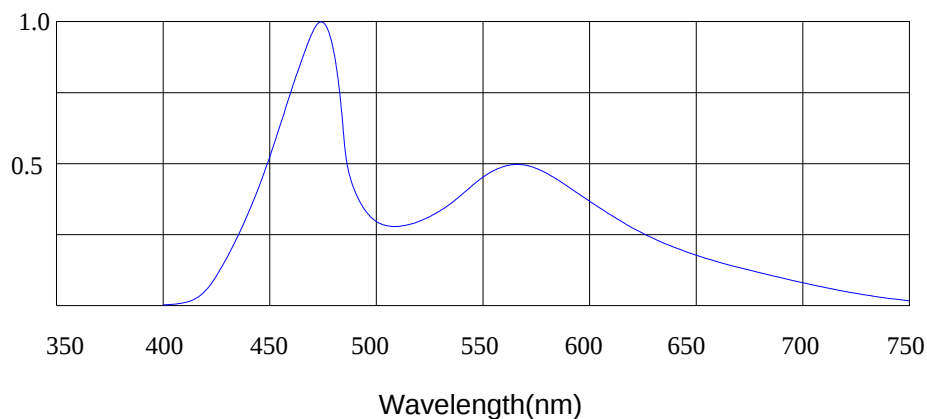
Note:1.Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commision Internationale De L'Eclairage) eye-response curve.

2.Wavelength: +/-1nm Luminous Intensity: +/-15% Forward Voltage: +/-0.1V

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TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES (25°C Ambient Temperature Unless Otherwise Noted)

RELATIVE INTENSITY vs WAVELENGTH



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Soldering

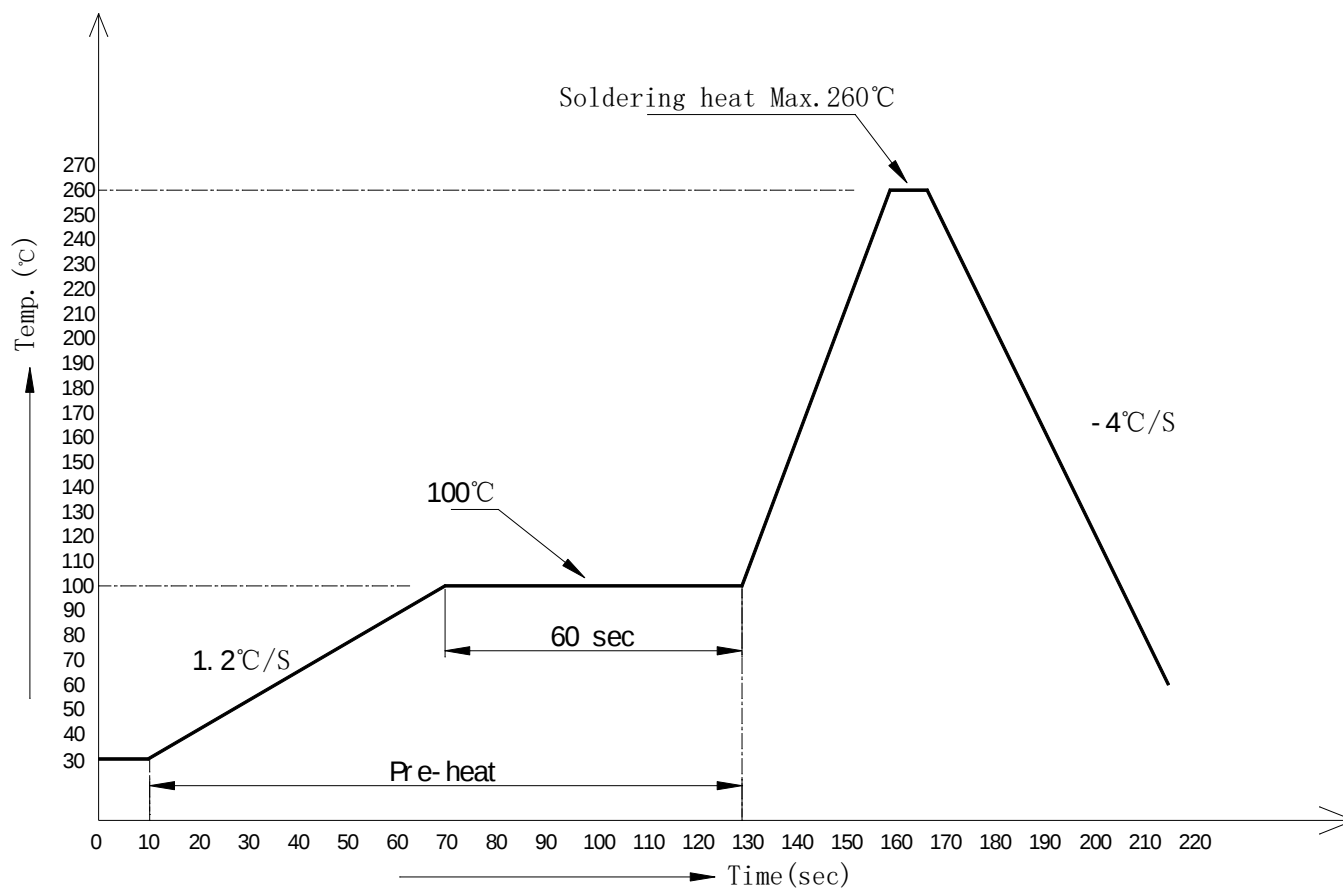
Wave soldering conditon

Pre-heat 100°C Max.

Pre-heat time 60sec.Max.

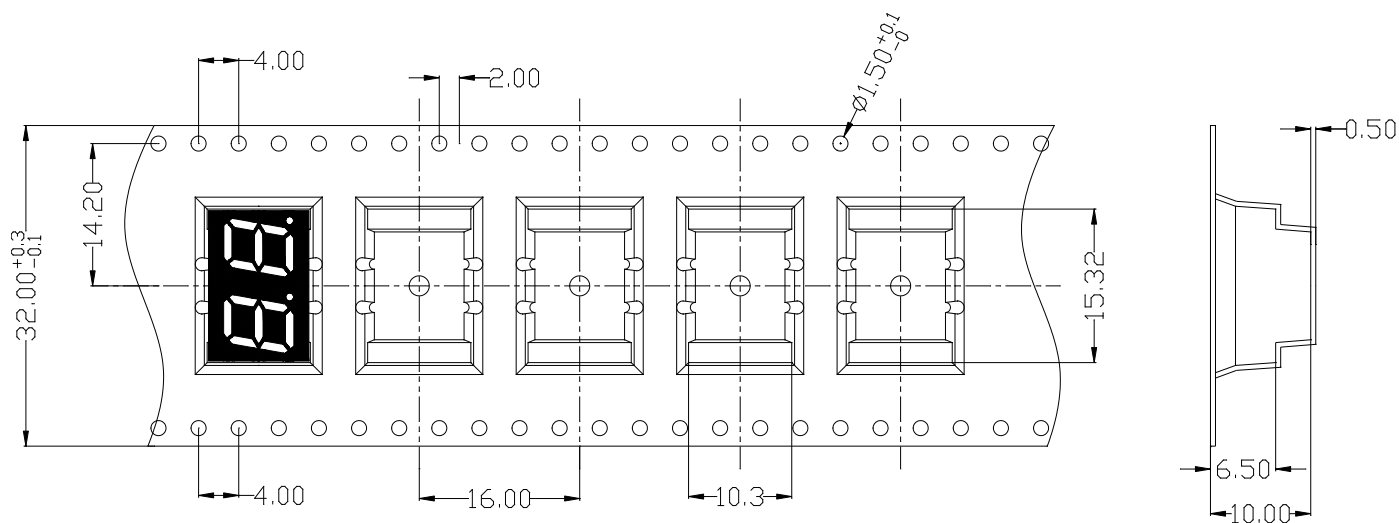
Solder wave 260°C Max.

Soldering time 3sec.Max.



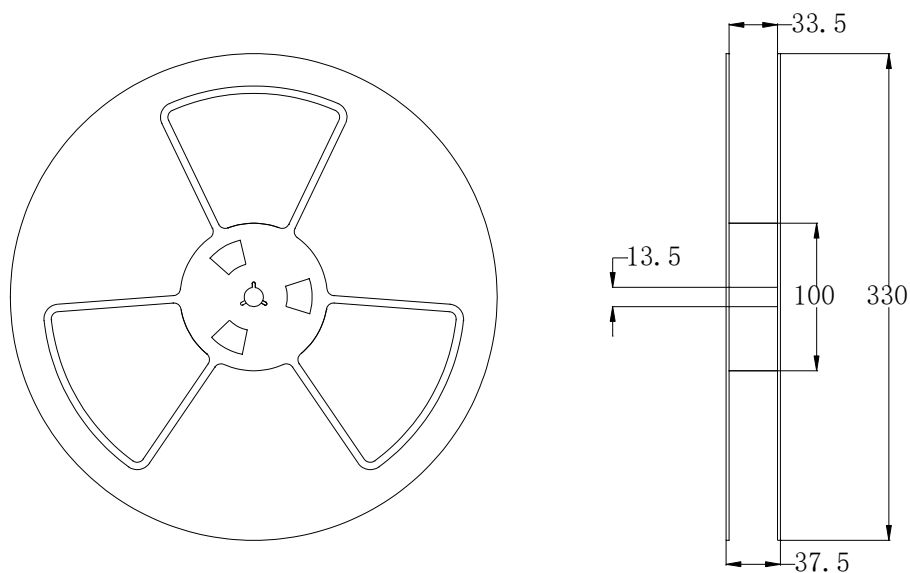
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TAPE SPECIFICATION (UNIT: mm)



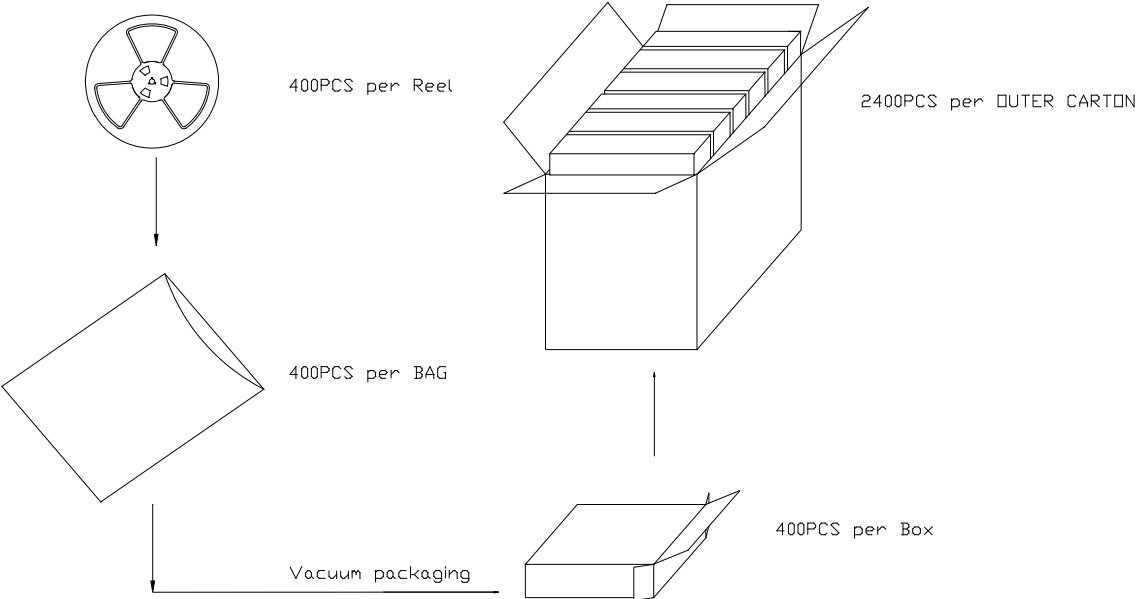
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REEL SPECIFICATION(UNIT: MM)



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Package Flow



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