

HDSM-291B/293B
0.28inch (7.0mm)
Dual digit surface mount LED display



Preliminary Datasheet

Description

This is 0.28 inch (7.0mm) height dual digit display. This device utilizes InGaNSiC blue LED chips. This device with top surface gray and white segments.

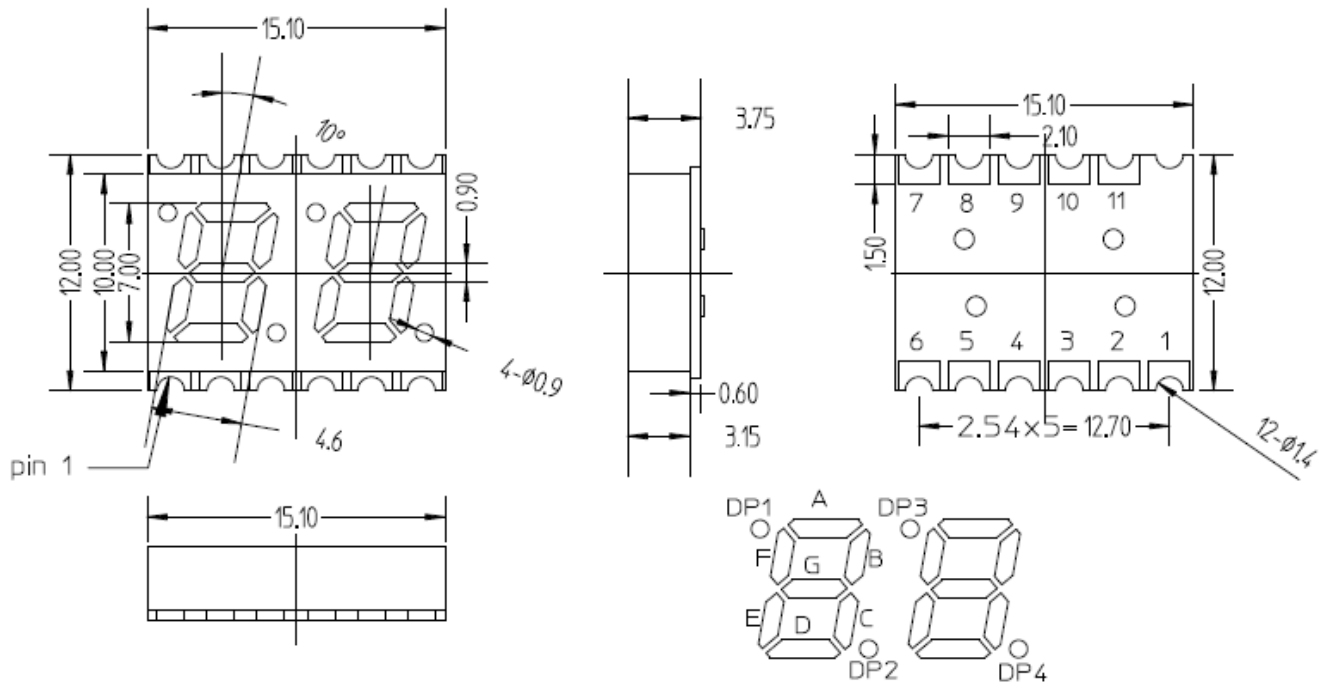
Features

- 0.28" digit height
- Low current operation
- Excellent characters appearance
- Available in CA and CC
- 1000 pieces per reel
- Moisture Sensitivity Level: Level 3
- RoHS compliant

Blue HDSM-	Description
291B	Common Anode, Upper and Lower Decimal
293B	Common Cathode, Upper and Lower Decimal

Avago Technologies reserves the right to alter prices, specifications, features, capabilities, functions, release dates, and remove availability of the product(s) at anytime.

Package Dimensions



Note:

1. All dimension are in millimeters.
2. Tolerance are +/-0.25mm unless otherwise specified.

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Pin Connection (Common Anode)

PIN NO.	CONNECTION
1	CATHODE G
2	CATHODE DP2,DP4
3	CATHODE A
4	CATHODE F
5	COMMON ANODE DIG2
6	CATHODE D
7	CATHODE E
8	CATHODE C
9	CATHODE B
10	COMMON ANODE DIG1
11	CATHODE DP1,DP3

Pin Connection (Common Cathode)

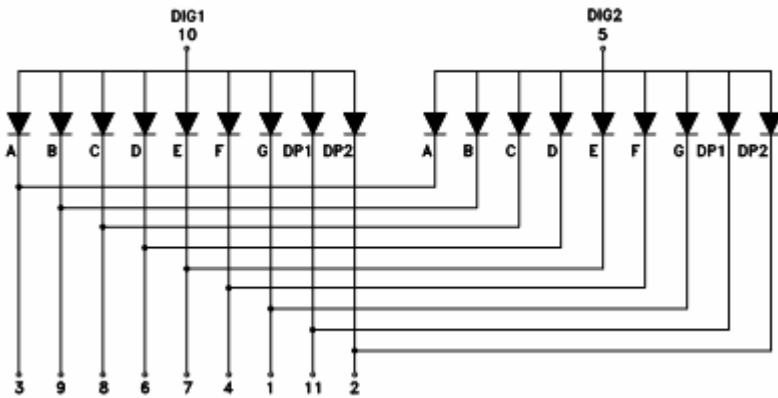
PIN NO.	CONNECTION
1	ANODE G
2	ANODE DP2,DP4
3	ANODE A
4	ANODE F
5	COMMON CATHODE DIG2
6	ANODE D
7	ANODE E
8	ANODE C
9	ANODE B
10	COMMON CATHODE DIG1
11	ANODE DP1,DP3

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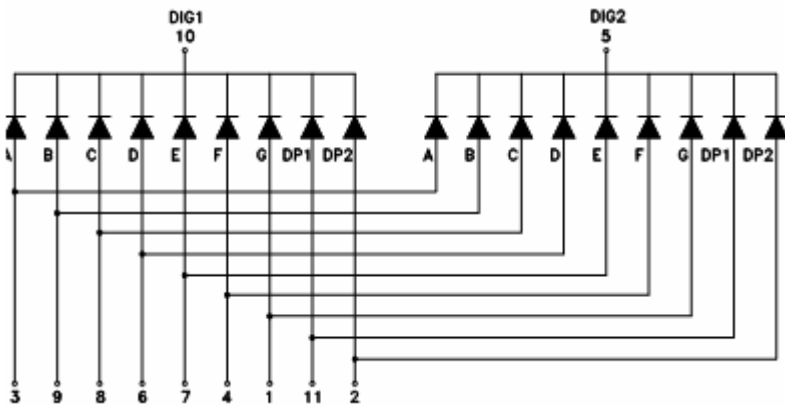
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Internal Circuit Diagram (Common Anode)



Internal Circuit Diagram (Common Cathode)



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Absolute Maximum Ratings @ T_A=25°C

PARAMETER	Blue	UNIT
Power Dissipation Per Segment	100	mW
Peak Forward Current Per Segment (1/10 Duty Cycle, .0.1ms pulse width)	80	mA
Continuous Forward Current Per Segment Derating Linear From 25°C Per Segment	25 0.25	mA mA/°C
Reverse Voltage Per Segment	5	V
Operating Temperature Range	-40°C to +105°C	
Storage Temperature Range	-40°C to +105°C	

Note: Human Body Model (HBM), supplier gives no other assurances regarding the ability of product to withstand ESD.

Caution in ESD: Static Electricity and surge damages the LED. It is recommend to use a wrist strap or anti-electrostatic glove when handing the LED. All devices, equipment and machinery must be properly grounded.

Electrical / Optical Characteristics @ T_A=25 °C

Blue

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _v	3.4	6	—	mcd	I _F = 10 mA
Emission Wavelength	λ _p /λ _d	—	472/470	—	nm	I _F = 20 mA
Spectral Line Half-Width	Δλ	—	26	—	nm	I _F = 20 mA
Forward Voltage, Per Segment	V _F	—	3.3	4.0	V	I _F = 20 mA
Reverse Current, Per Segment	I _R	—	—	100	μA	V _R = 5 V
Luminous Intensity Matching Ratio	I _{V-m}	—	—	2:1	—	I _F = 10 mA

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Typical Electrical / Optical characteristic Curves @ $T_A=25^\circ\text{C}$

Blue

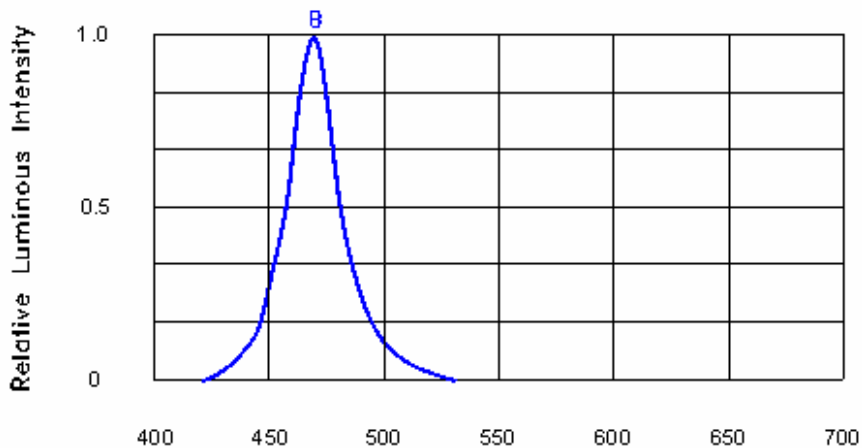


FIG1.RELATIVE LUMINOUS INTENSITY VS.WAVELENGTH

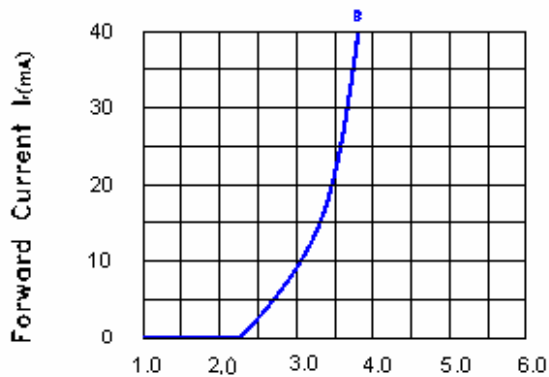


FIG.2 FORWARD Current VS.Forward Voltage

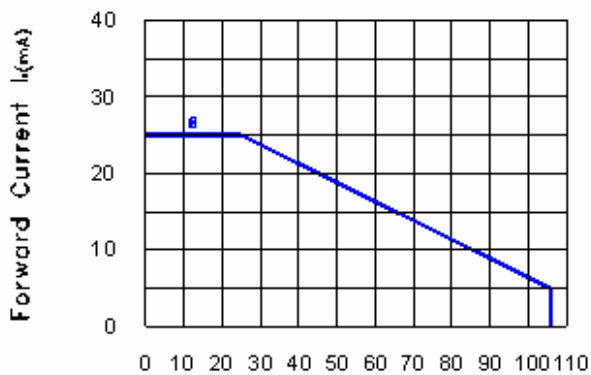


FIG.3 ALLOWABLE DC CURRENT VS.AMBIENT TEMPERATURE

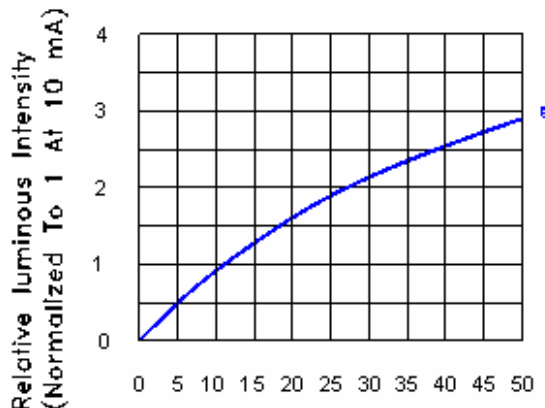


FIG.4 Relative Intensity VS.FORWARD Current

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Intensity Bin Limit (mcd)

Blue

Iv Bin Category	Min	Max
L	3.401	5.4
M	5.401	8.6
N	8.601	13.7

Tolerance +/-15%

Note:

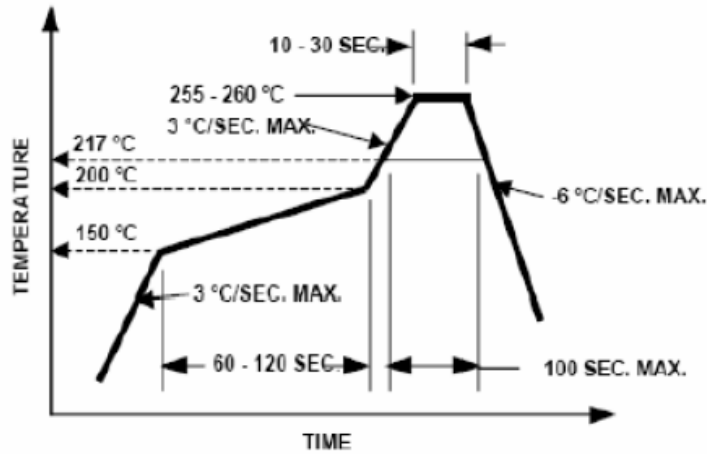
1. Bin categories are established for classification of products. Products may not be available in all categories. Please contact your Avago representative for information on currently available bins.

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SMT Soldering Profile

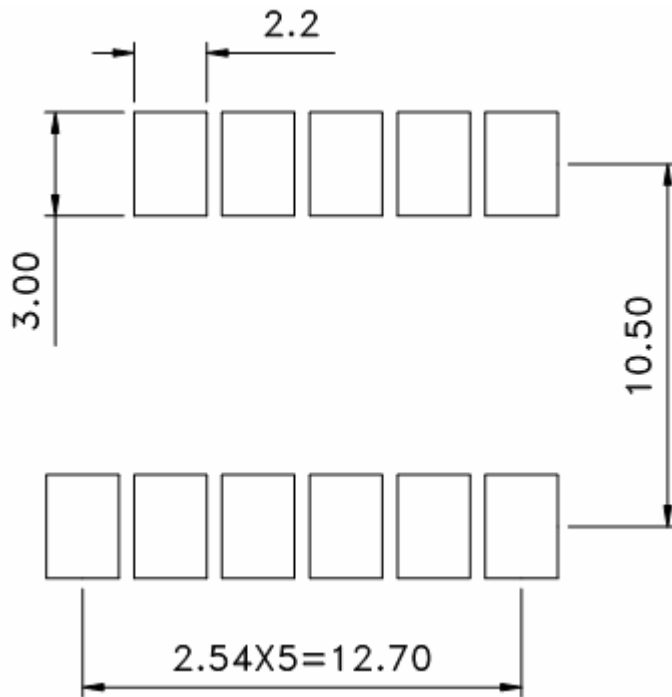


(Acc. to J-STD-020C)

Pb free reflow soldering Profile

Notes: Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between the first and than second soldering process.

Recommended Soldering Pattern (unit: mm)

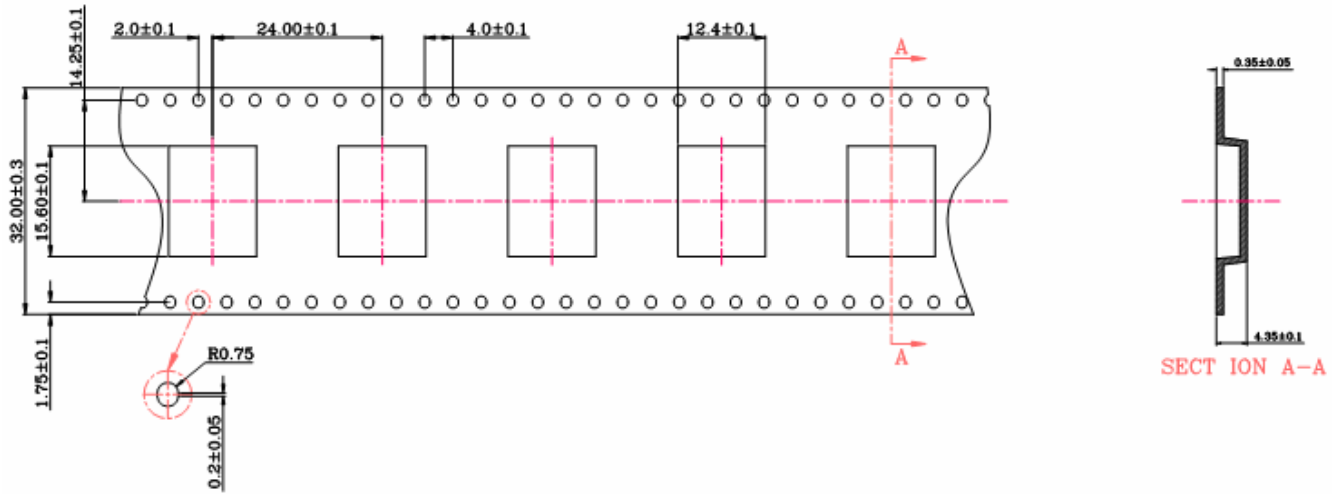


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Tape Specification (unit: mm)



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