

DATASHEET

Display Surface-mount EADSS056RA2



Features

- Industrial standard size.
- Packaged in tape and reel for SMT manufacturing.
- The thickness is thinness than tradition display.
- Low power consumption.
- · Categorized for luminous intensity.
- Pb free and RoHS compliant.

Description

- The EADSS056RA2 is a 14.22mm (0.56") digit height seven-segment display.
- The display provides excellent reliability in bright ambient light.
- The device is made with white segments and gray surface.

Applications

- · Home appliances
- · Instrument panels
- · Digital readout displays

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Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGalnP	Brilliant Red	White Diffusion

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_{R}	5	V
Forward Current	I _F	25	mA
Peak Forward Current (Duty 1/10 @1KHz)	I _{FP}	60	mA
Power Dissipation	Pd	60	mW
Operating Temperature	T_{opr}	-40 ~ +105	$^{\circ}$ C
Storage Temperature	T _{stg}	-40 ~ +105	$^{\circ}$
Soldering Temperature (Soldering time≦5 seconds)	T_{sol}	260	$^{\circ}\mathbb{C}$

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Condition
Luminous Intensity ^{*1}	lv	11.0	24.0		mcd	I _F =10mA
Peak Wavelength	λр		632		nm	$I_F=20mA$
Dominant Wavelength	λd		624		nm	$I_F=20mA$
Spectrum Radiation Bandwidth	Δλ		20		nm	$I_F=20mA$
Forward Voltage	V_{F}		2.0	2.4	V	I _F =20mA
Reverse Current	I _R			10	μΑ	$V_R=5V$

Note

- 1. Luminous Intensity is a average value which is measured one 7-segment.
- 2. Tolerance of Luminous Intensity: ± 10 %
- 3. Tolerance of Forward Voltage: ± 0.1V

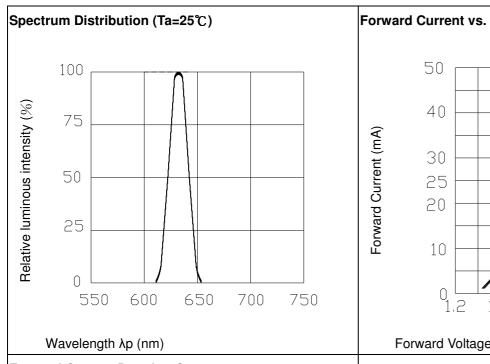


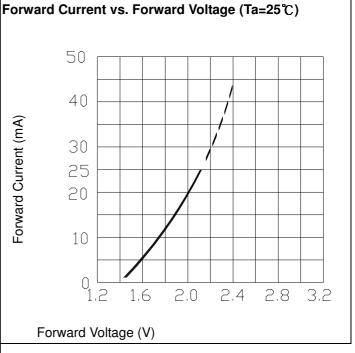
Bin Range of Luminous Intensity

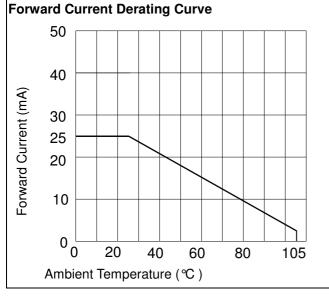
Bin Code	Min.	Max.	Unit	Condition
R	11.0	17.6		I _F =10mA
S	15.0	24.0	_	
Т	21.0	34.0		
U	30.0	48.0	– mcd	
V	42.0	67.0	_	
W	59.0	94.0		



Typical Electro-Optical Characteristics Curves

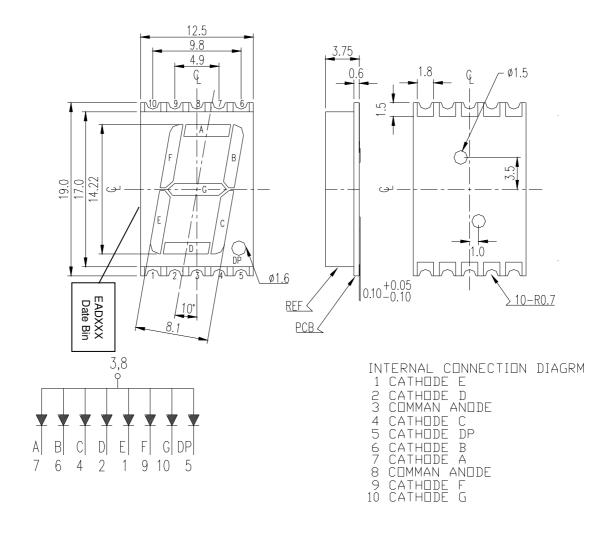








Package Dimension & Internal Circuit Diagram

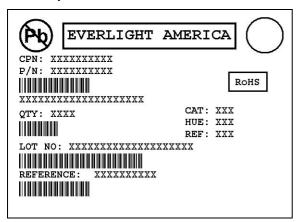


Note: Tolerances unless mentioned ±0.25mm. Unit = mm



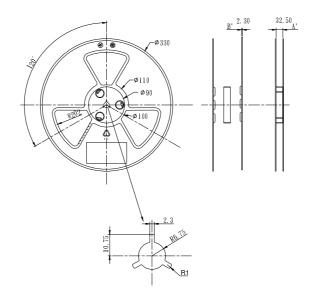
Packing Materials

Label Explanation

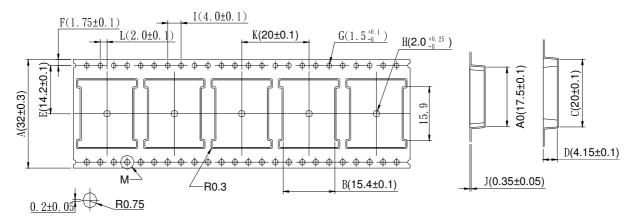


- · CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Reference
- · REF: Reference
- LOT No: Lot Number
- · DC: Year and Weekly
- · REFERENCE: Volume Label code

Reel Dimensions



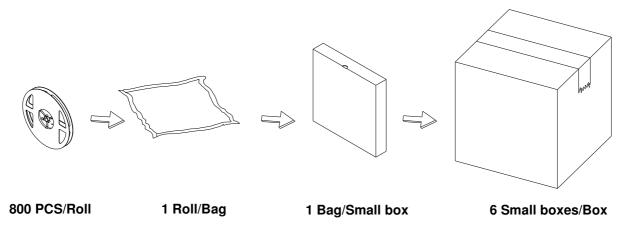
Carrier Tape Dimensions: Loaded Quantity 800 PCS Per Reel



Note: Tolerances unless mentioned ±0.25mm. Unit = mm

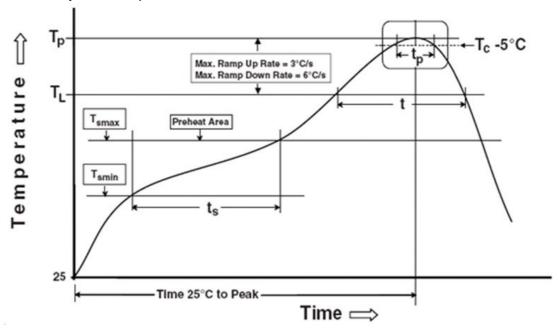


Packing Process



Precautions for Use

- 1. Soldering Condition
 - 1.1 (A) Maximum Body Case Temperature Profile for evaluation of Reflow Profile



Note: Reference: IPC/JEDEC J-STD-020D

Preheat

 $\begin{array}{lll} \text{Temperature min } (T_{smin}) & 150 \ ^{\circ}\text{C} \\ \text{Temperature max } (T_{smax}) & 200 \ ^{\circ}\text{C} \\ \text{Time } (T_{smin} \text{ to } T_{smax}) \ (t_s) & 60\text{-}120 \text{ seconds} \\ \text{Average ramp-up rate } (T_{smax} \text{ to } T_p) & 3 \ ^{\circ}\text{C/second max}. \end{array}$

Other

Liquidus Temperature (T_L) 217 ℃



Time above Liquidus Temperature (t L)

Peak Temperature (T_P)

Time within 5 °C of Actual Peak Temperature: T_P - 5 °C

Ramp- Down Rate from Peak Temperature

Time 25 °C to peak temperature

Reflow times

60-150 seconds

260 ℃

30 seconds

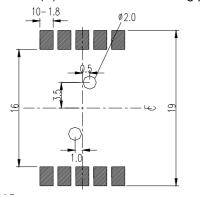
6 °C/second max.

8 minutes max.

1 time

All parameters are maximum body case temperature values and cannot be considered as a soldering profile. The body case temperature was measured by soldering a thermal couple to the soldering point of LEDs.

1.2 (B) Recommend soldering pad



Note: Suggested pad dimension is just for reference only. Please modify the pad dimension based on individual need.

Application Restrictions

- 1. specification described in this document. Above specification may be changed without notice. EVERLIGHT Americas will reserve authority on material change for above specification.
- 2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT Americas assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
- 3. These specification sheets include materials protected under copyright of EVERLIGHT Americas Corporation. Please don't reproduce or cause anyone to reproduce them without EVERLIGHT Americas' consent.
- 4. ESD (Electrostatic Discharge)
 - The products are sensitive to static electricity or surge voltage. ESD can damage a die and its reliability. When handling the products, the following measures against electrostatic discharge are strongly recommended:

Eliminating the charge

Grounded wrist strap, ESD footwear, clothes, and floors

Grounded workstation equipment and tools



ESD table/shelf mat made of conductive materials

- Proper grounding is required for all devices, equipment, and machinery used in product assembly.Surge protection should be considered when designing of commercial products.
- If tools or equipment contain insulating materials such as glass or plastic, the following measures against electrostatic discharge are strongly recommended:

Dissipating static charge with conductive materials

Preventing charge generation with moisture

Neutralizing the charge with ionizers

5. The LEDs should be operated with forward bias. The driving circuit must be designed so that the LEDs are not subjected to forward or reverse voltage while it is off. If reverse voltage is continuously applied to the LEDs, it may cause migration resulting in LED damage.