

### Display ▪ Surface-mount EADST056GA1



#### Features

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

#### Description

- EADST056GA1 is a 14.22 mm (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

## Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaInP	Brilliant Yellow Green	White Diffusion

## Absolute Maximum Ratings (Ta=25°C)

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	$P_d$	60	mW
Operating Temperature	$T_{opr}$	-40 ~ +105	°C
Storage Temperature	$T_{stg}$	-40 ~ +105	°C
Soldering Temperature (Soldering time $\leq$ 5 seconds)	$T_{sol}$	260	°C

## Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity <sup>*1</sup>	$I_v$	4.0	8.9	-----	mcd	$I_F=10mA$
Peak Wavelength	$\lambda_p$	-----	575	-----	nm	$I_F=20mA$
Dominant Wavelength	$\lambda_d$	-----	573	-----	nm	$I_F=20mA$
Spectrum Radiation Bandwidth	$\Delta\lambda$	-----	20	-----	nm	$I_F=20mA$
Forward Voltage	$V_F$	-----	2.0	2.4	V	$I_F=20mA$
Reverse Current	$I_R$	-----	-----	10	$\mu A$	$V_R=5V$

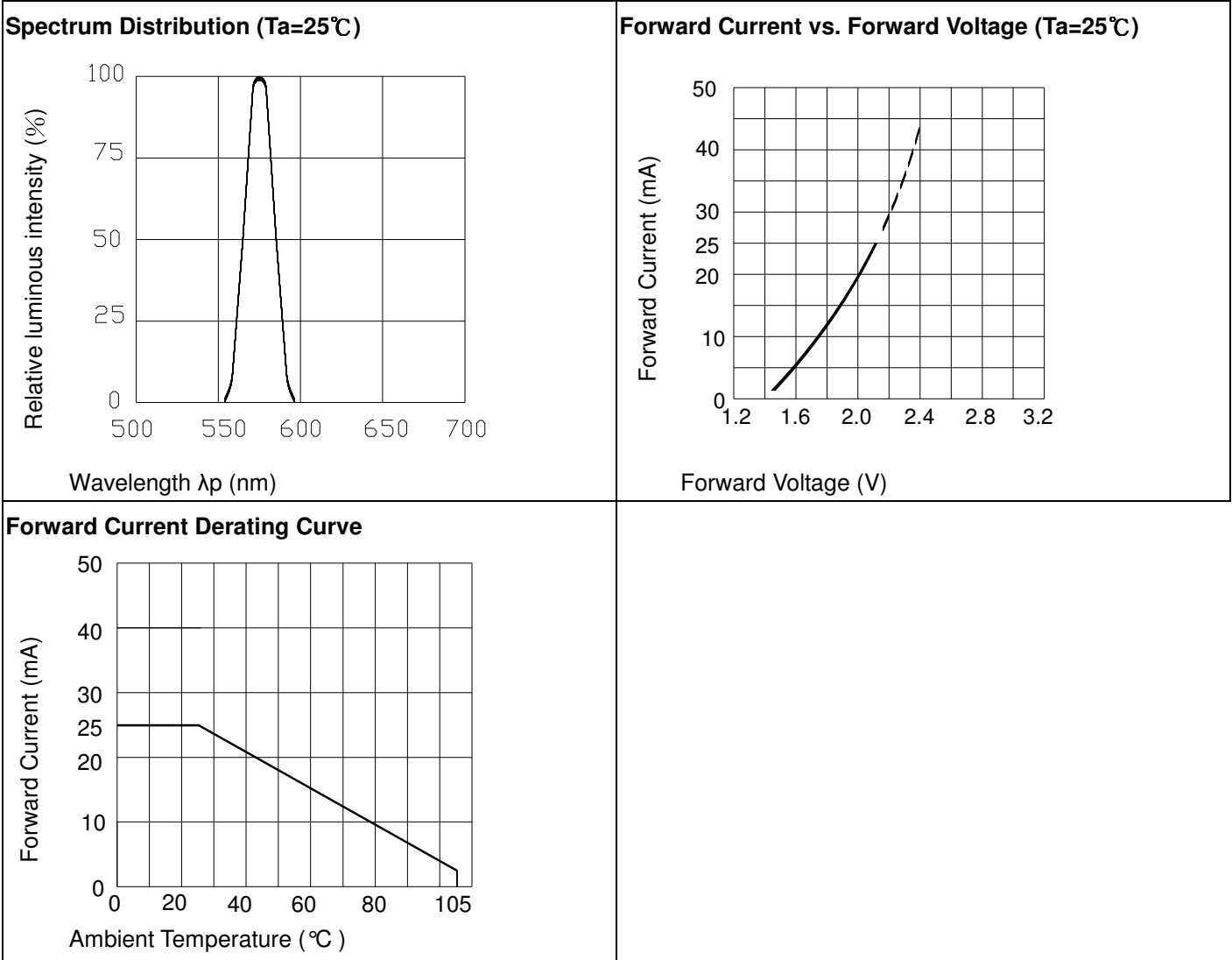
Note:

- Luminous Intensity is a average value which is measured one 7-segment.
- Tolerance of Luminous Intensity:  $\pm 10\%$
- Tolerance of Forward Voltage:  $\pm 0.1V$

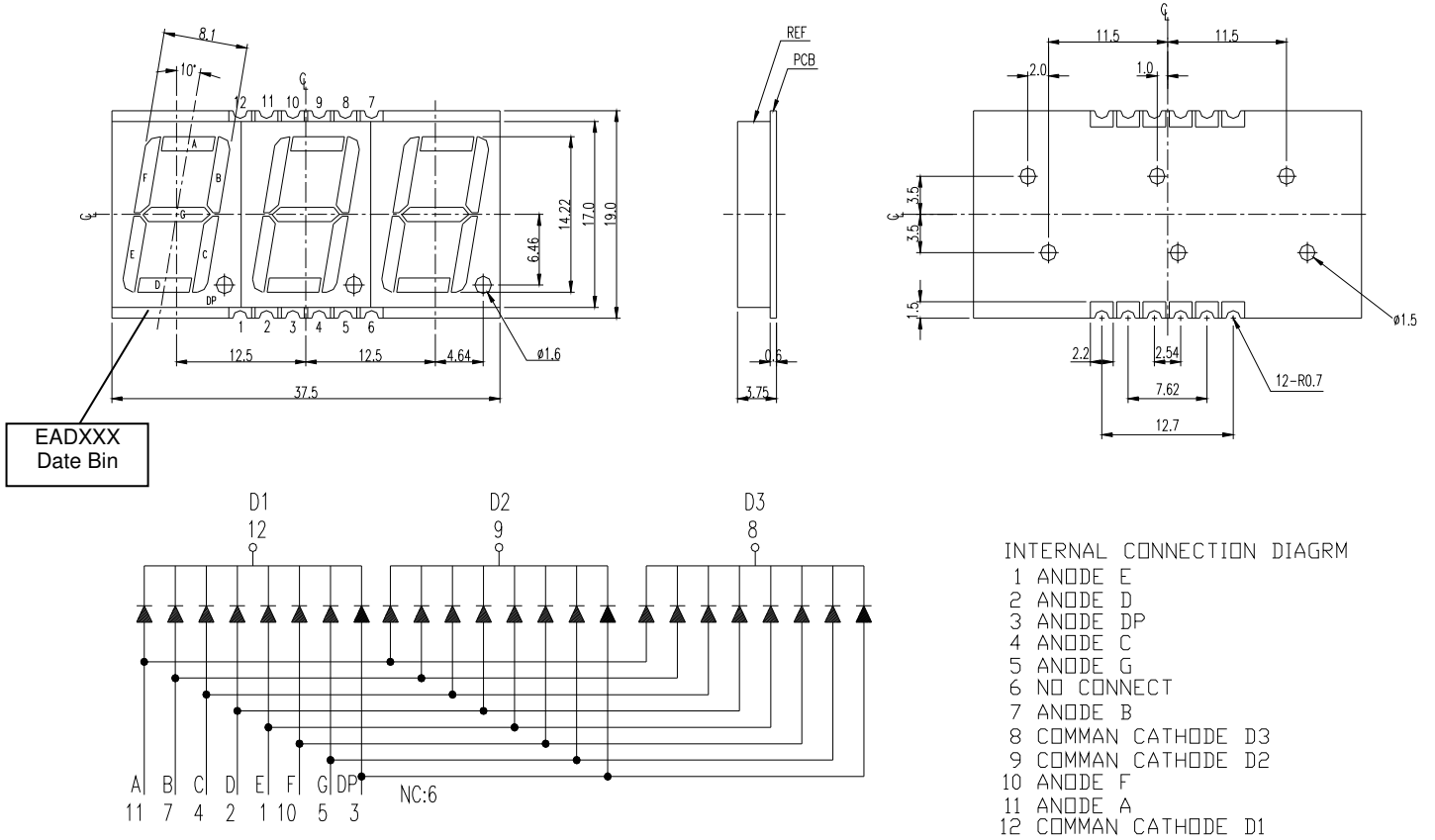
### Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
N	4.0	6.4	mcd	$I_F = 10\text{mA}$
P	5.6	8.9		
Q	7.8	12.5		
R	11.0	17.6		
S	15.0	24.0		
T	21.0	34.0		

**Typical Electro-Optical Characteristics Curves**



**Package Dimension & Internal Circuit Diagram**

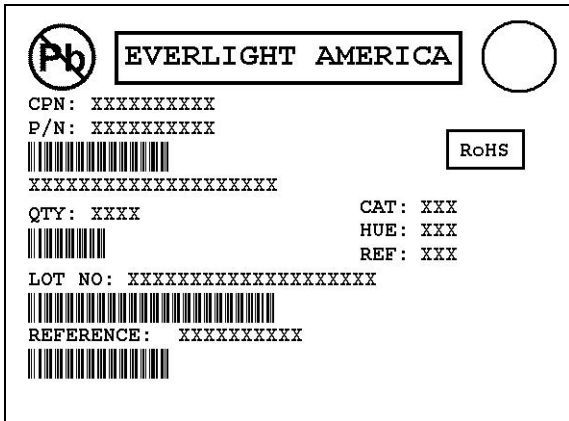


**Note:**

1. Tolerances unless mentioned  $\pm 0.25\text{mm}$ . Unit = mm

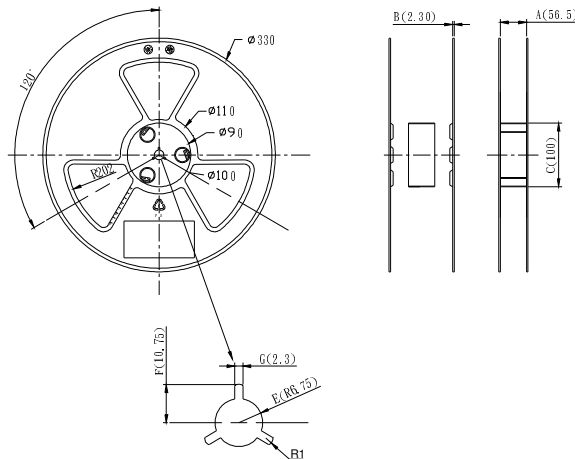
## Packing Materials

### Label Explanation

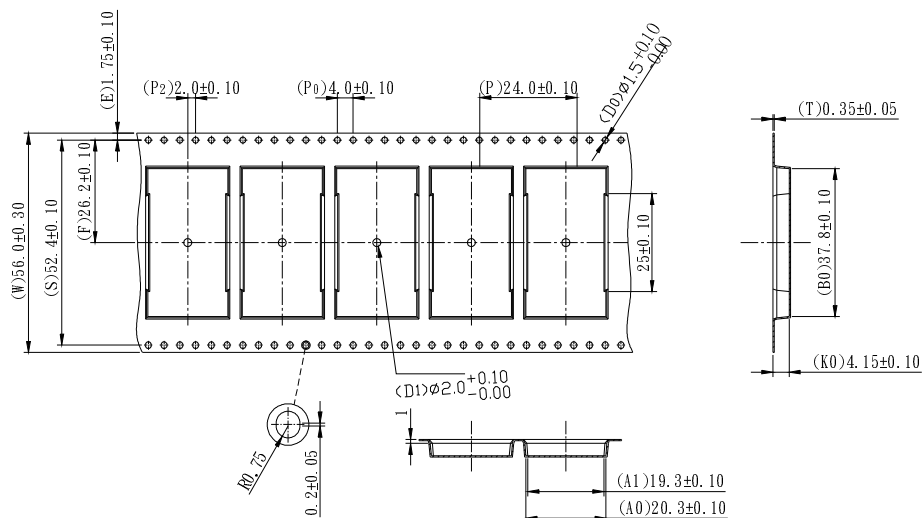


- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Reference
- REF: Reference
- LOT No: Lot Number
- DC: Year and Weekly
- REFERENCE: Volume Label code

### Reel Dimensions

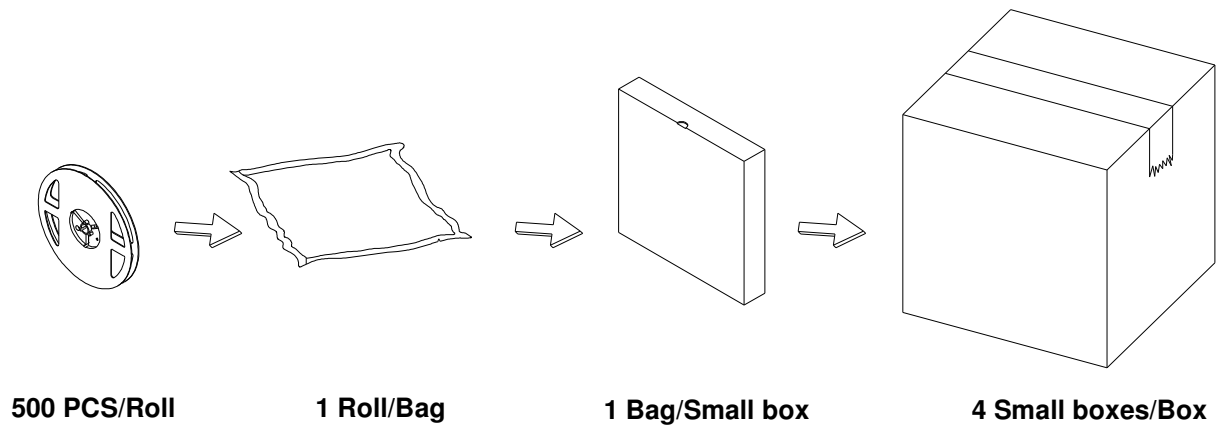


### Carrier Tape Dimensions: Loaded Quantity 500 PCS Per Reel



Note: Tolerances unless mentioned  $\pm 0.25$ mm. Unit = mm

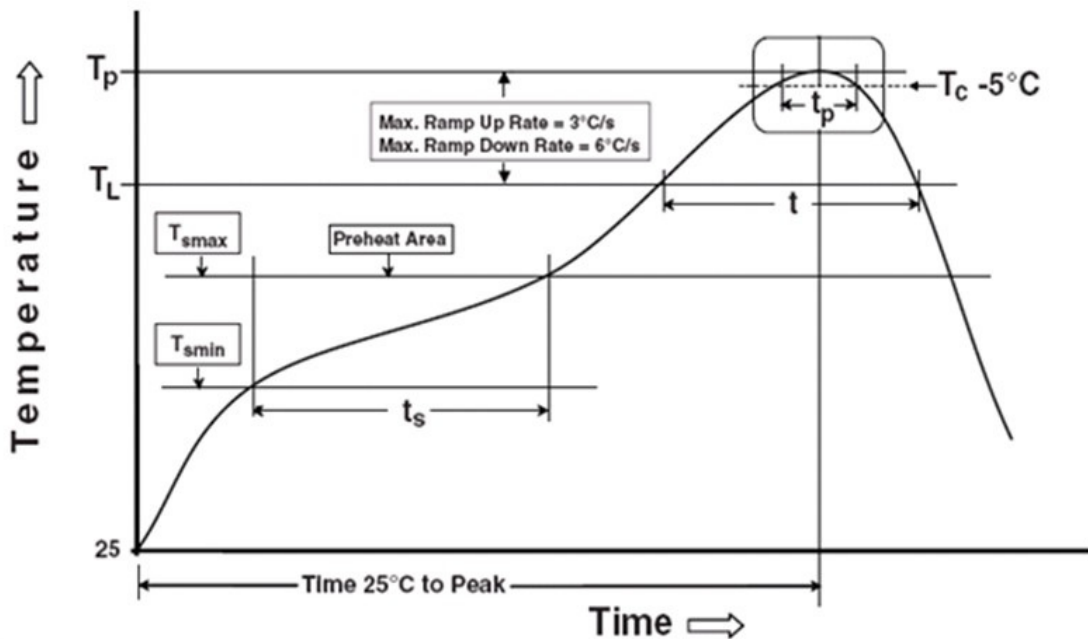
**Packing Process**



**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**

Temperature min ( $T_{smin}$ )	150 °C
Temperature max ( $T_{smax}$ )	200 °C
Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )	60-120 seconds
Average ramp-up rate ( $T_{smax}$ to $T_p$ )	3 °C/second max.





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.