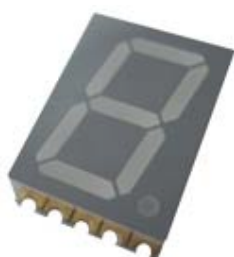


Display ■ Surface-mount ELSS-506SYGWA/S530-E2



Features

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

Description

- The ELSS-506SYGWA/S530-E2 is a 13mm (0.51") 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 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +100	°C
ESD (Classification acc. AEC Q101)	ESD_{HBM}	2000	V
Soldering Temperature (Soldering time ≤ 5 seconds)	T_{sol}	260	°C

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity ^{*1}	I_v	5.6	9.1	-----	mcd	$I_F=10mA$
Peak Wavelength	λ_p	-----	575	-----	nm	$I_F=20mA$
Dominant Wavelength	λ_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	μA	$V_R=5V$

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

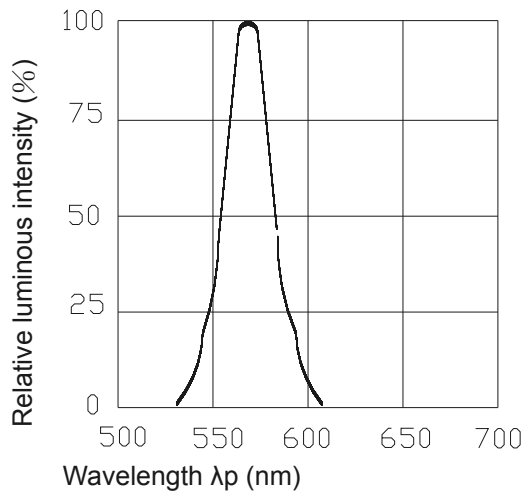
Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
P	5.6	8.9	mcd	$I_F = 10\text{mA}$
Q	7.8	12.5		
R	11.0	17.6		
S	15.0	24.0		
T	21.0	34.0		
U	30.0	48.0		
V	42.0	67.0		
W	59.0	94.0		

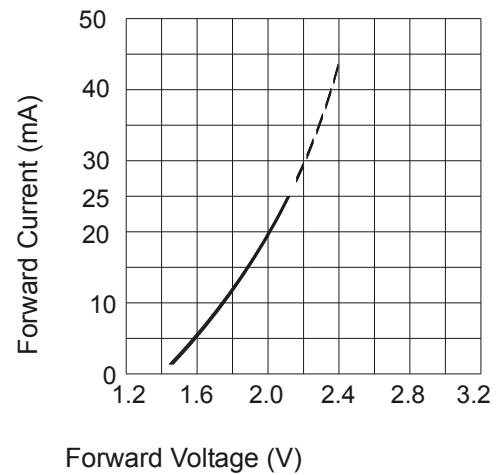
EVERLIGHT

Typical Electro-Optical Characteristics Curves

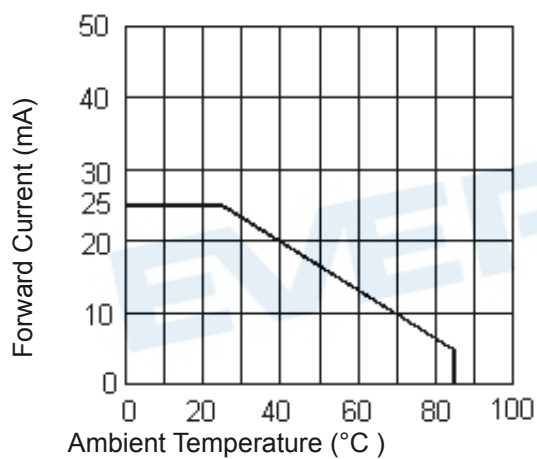
Spectrum Distribution (Ta=25°C)



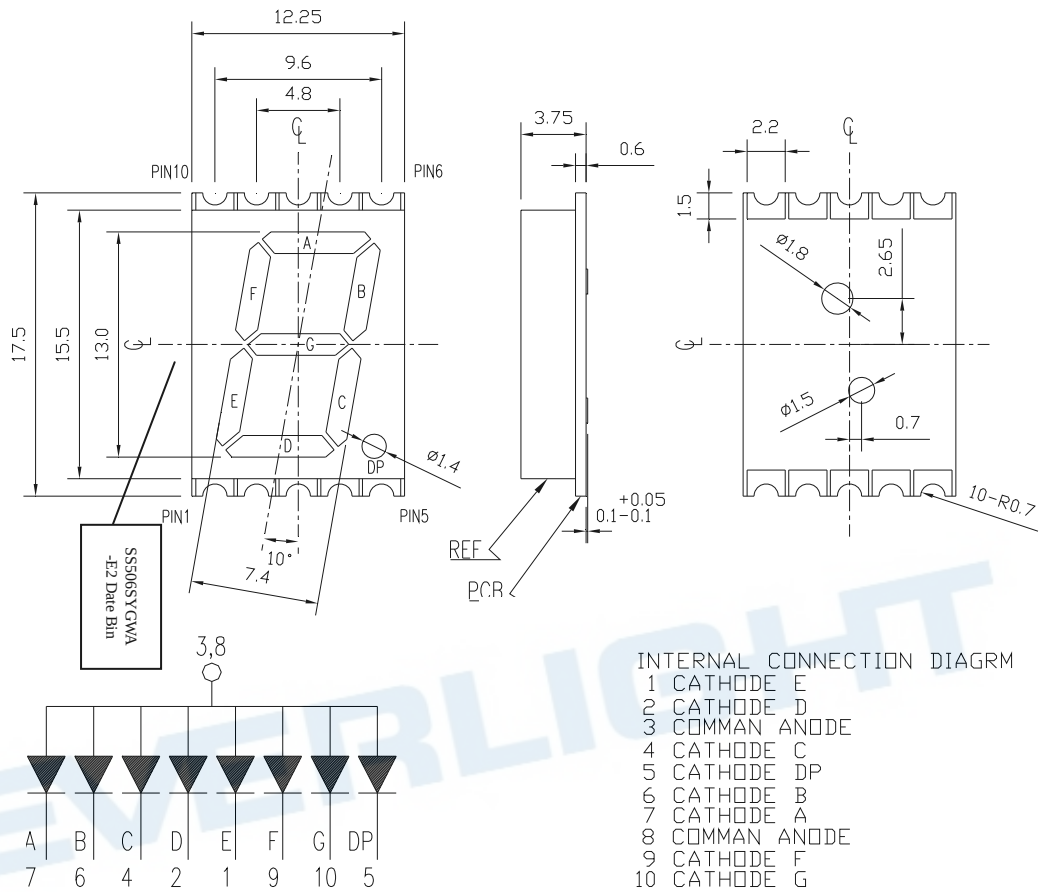
Forward Current vs. Forward Voltage (Ta=25°C)



Forward Current Derating Curve



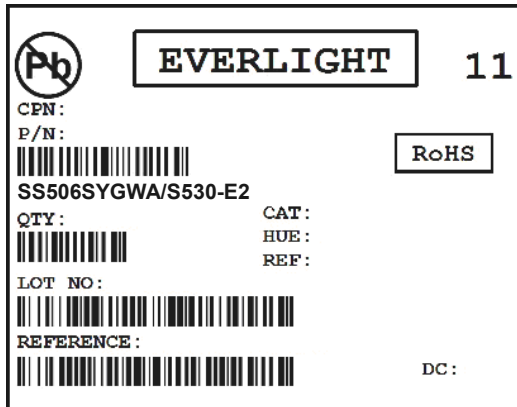
Package Dimension & Internal Circuit Diagram



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

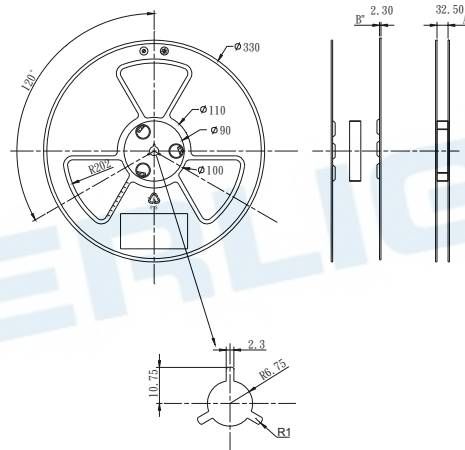
Packing Materials

Label Explanation

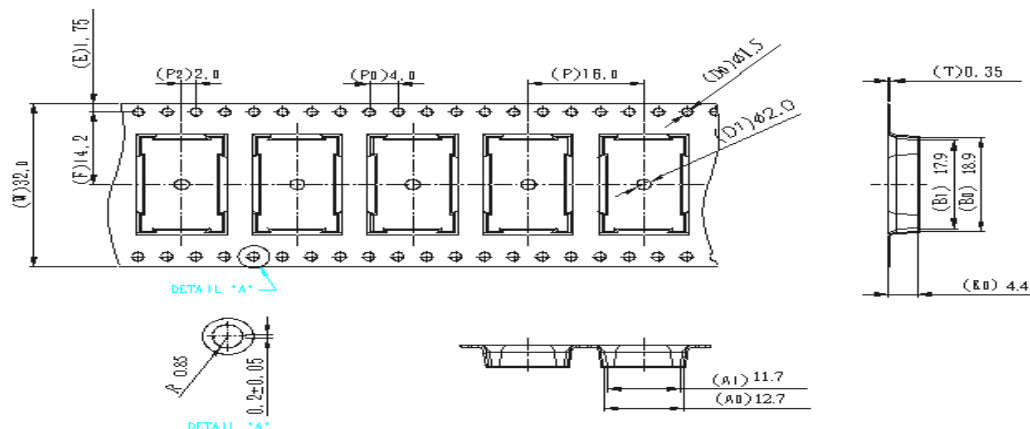


- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Reference
- REF: Reference
- LOT No: Lot Number
- DC: Year and Weekly
- REFERENCE: Volume Label code

Reel Dimensions

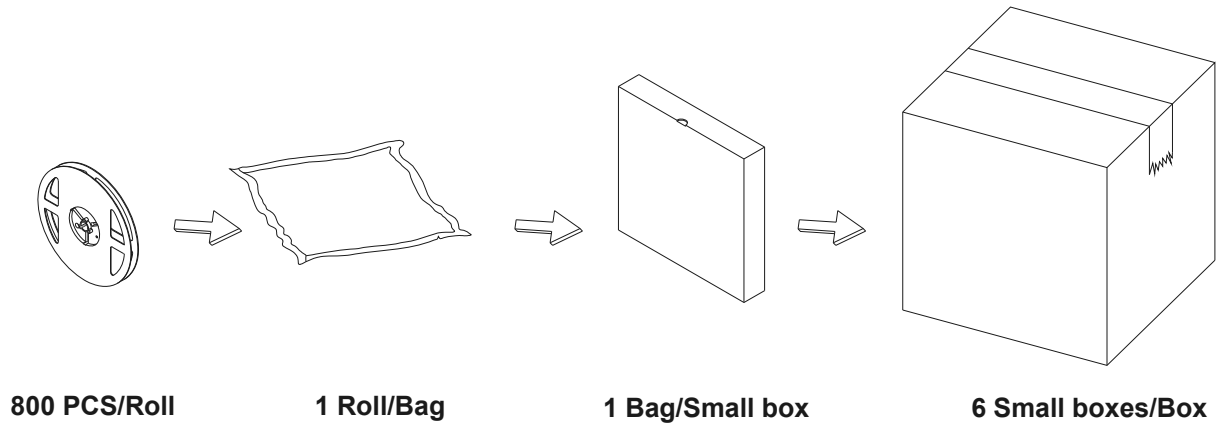


Carrier Tape Dimensions: Loaded Quantity 800 PCS Per Reel



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

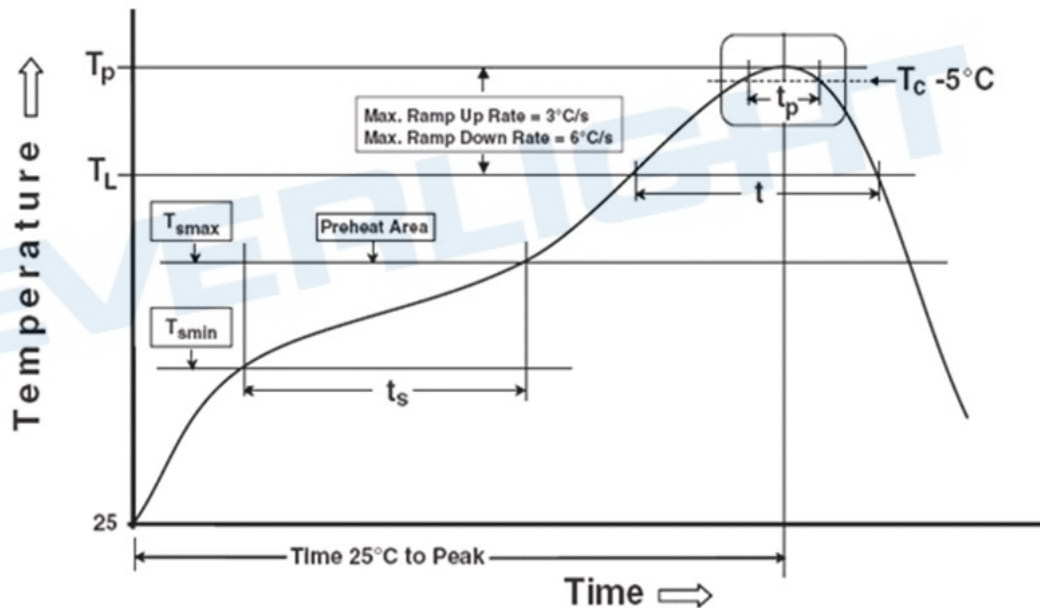
Packing Process



Precautions for Use

1. Soldering Condition

1.1 (A) Maximum Body Case Temperature Profile for evaluation of Reflow Profile



Note:

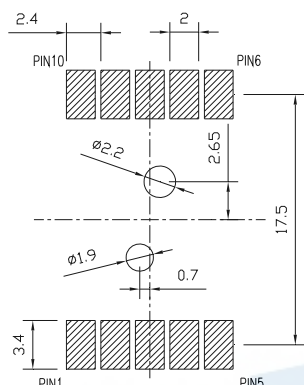
Reference: IPC/JEDEC J-STD-020D

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.

Liquidus Temperature (T_L)	217 °C
Time above Liquidus Temperature (t_L)	60-150 seconds
Peak Temperature (T_P)	260 °C
Time within 5 °C of Actual Peak Temperature: $T_P - 5^\circ\text{C}$	30 seconds
Ramp- Down Rate from Peak Temperature	6 °C/second max.
Time 25°C to peak temperature	8 minutes max.
Reflow times	1 time

1.2 (B) Recommend soldering pad



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