



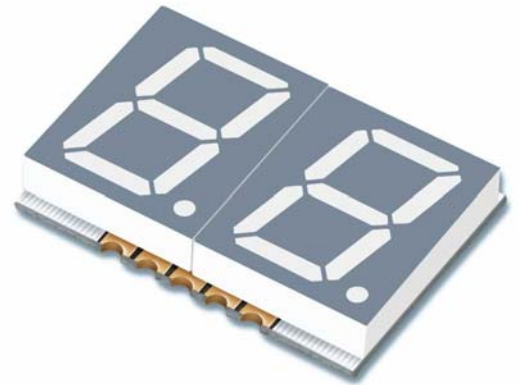
## Technical Data Sheet

### 0.51" Dual Digit SMD Displays

#### ELSD-506SYGWA/S530-E2

#### Features

- Packaged in tape and reel for SMT manufacturing.
- Design flexibility(common cathode or anode).
- Categorized for luminous intensity.
- The thickness is thinner than tradition display.
- Pb free
- The product itself will remain with RoHS compliant version.



#### Descriptions

- The SMD type is much smaller than tradition type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.

#### Applications

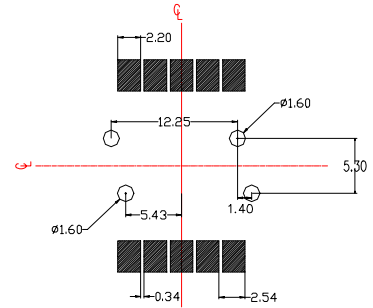
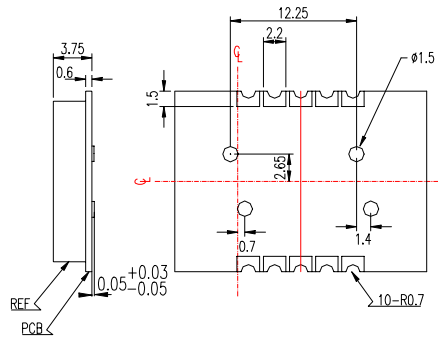
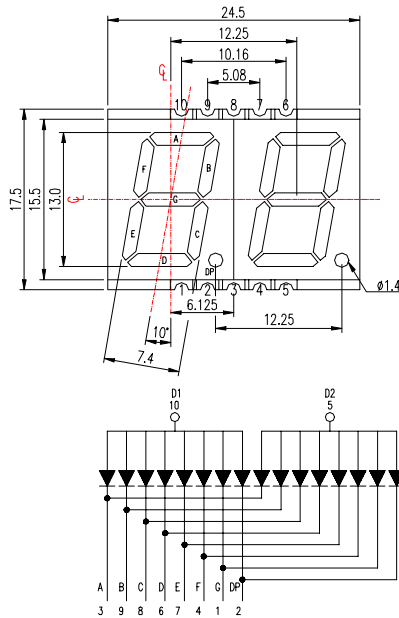
- Suitable for indoor use.
- Audio system.
- Set top box.
- Game machine.
- Channel indicator of TV.

#### Device Selection Guide

Chip		Face Color
Material	Emitted Color	
AlGaInP	Brilliant Yellow Green	Gray

## ELSD-506SYGWA/S530-E2

### Package Dimensions



INTERNAL CONNECTION DIAGRM  
 1 CATHODE G  
 2 CATHODE DP  
 3 CATHODE A  
 4 CATHODE F  
 5 COMMON ANODE D2  
 6 CATHODE D  
 7 CATHODE E  
 8 CATHODE C  
 9 CATHODE B  
 10 COMMON ANODE D1

### Notes:

- All dimensions are in millimeters, tolerance is 0.25mm unless otherwise noted.
- Above specification may be changed without notice. Supplier will reserve authority on material change for above specification.

### Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Units
Forward Current	I <sub>F</sub>	25	mA
Pulse Forward Current <sup>*1</sup>	I <sub>FP</sub>	60	mA
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +85	°C
Soldering Temperature <sup>*2</sup>	T <sub>sol</sub>	260	°C
Electrostatic Discharge	ESD	2000	V
Power Dissipation	P <sub>d</sub>	100	mW
Reverse Voltage	V <sub>R</sub>	5	V

**Notes:** \*1:I<sub>FP</sub> Conditions--Pulse Width ≤ 10msec and Duty ≤ 1/10.

\*2:Soldering time ≤ 5 seconds.

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

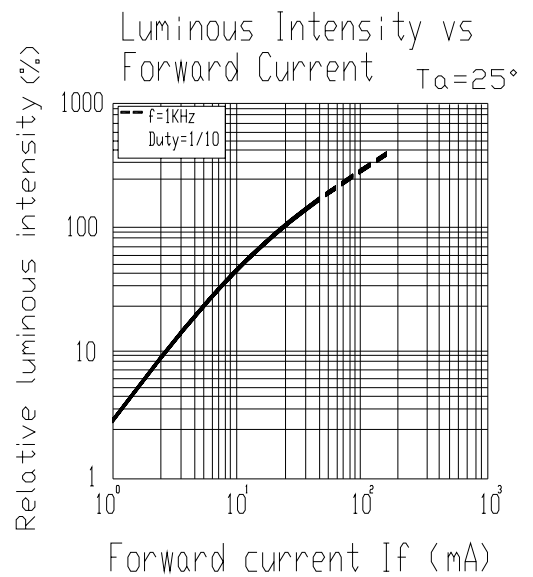
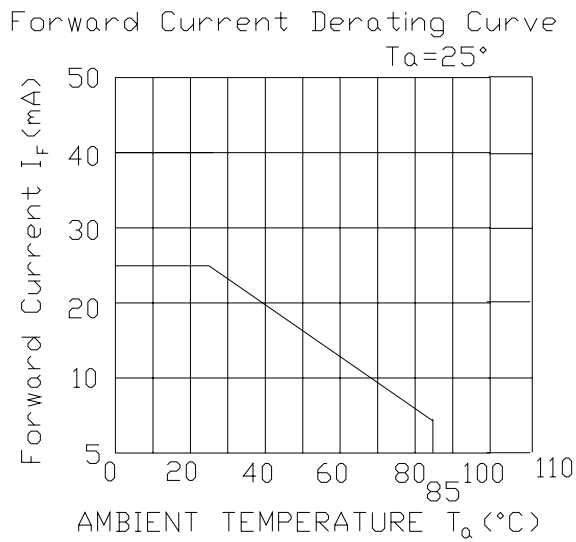
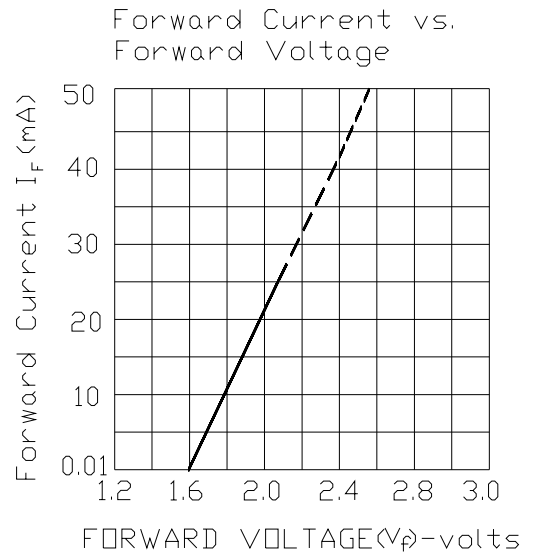
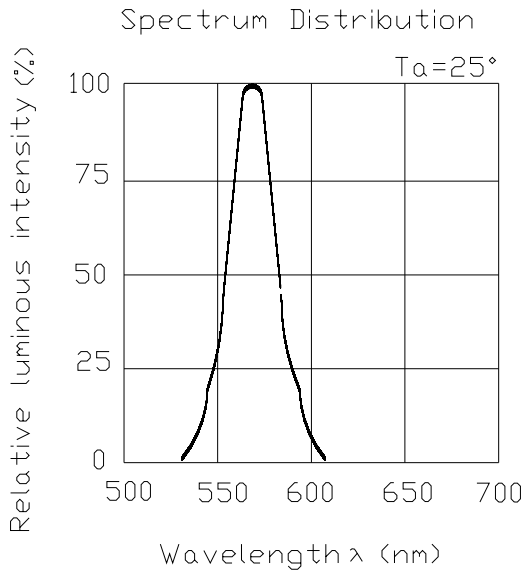
Parameter		Symbol	Min.	Typ.	Max.	Units	Condition
Forward Voltage		$V_F$	--	2.1	2.4	V	$I_F=10mA$
Reverse Current		$I_R$	--	--	10	$\mu A$	$V_R=5V$
Luminous Intensity	Per segment	$I_V$	5.6	9.5	--	mcd	$I_F=10mA$
	Per decimal point		2.0	4.3	--		
Peak Wavelength		$\lambda_p$	--	575	--	nm	$I_F=10mA$
Dominant Wavelength		$\lambda_d$	--	573	--	nm	$I_F=10mA$
Spectrum Radiation Bandwidth		$\Delta \lambda$	--	20	--	nm	$I_F=10mA$

**Chromaticity Coordinates Specifications for Bin Grading (Unit: mcd)**

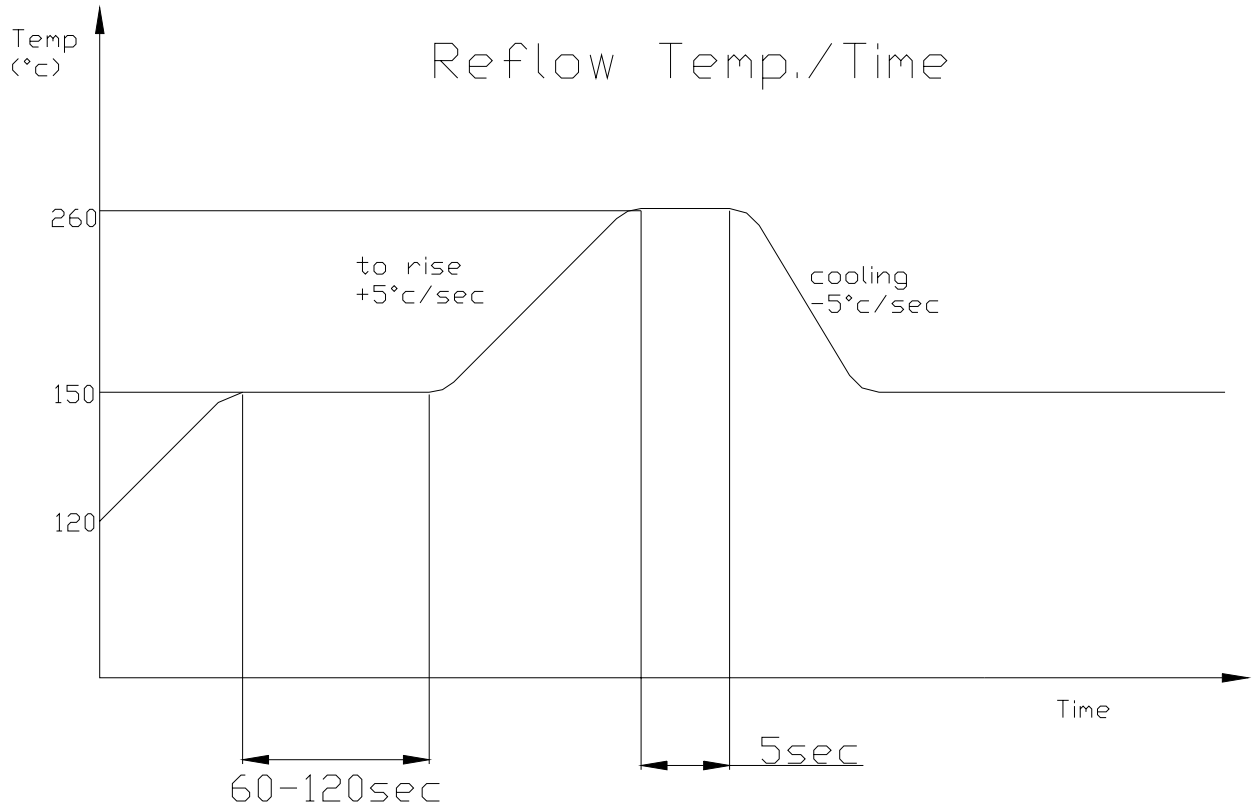
Rank	Min.	Max.	Rank	Min.	Max.
P	5.6	8.9	S	15.0	24.0
Q	7.8	12.5	T	21.0	34.0
R	11.0	17.6	--	--	--

**Typical Electro-Optical Characteristics Curves**

(SYG)



■ **Reflow Temp. / Time :**



■ **Soldering Iron :**

Basic spec is  $\leq 5$  sec when  $260^{\circ}\text{C}$ . If temperature is higher, time should be shorter ( $+10^{\circ}\text{C} \rightarrow -1\text{sec}$ ). Power dissipation of iron should be smaller than 15 W , and temperature should be controllable. Surface temperature of the device should be under  $230^{\circ}\text{C}$ .

■ **Rework :**

1. Customer must finish rework within 5 sec under  $260^{\circ}\text{C}$ .
2. The head of iron can not touch copper foil.

**Reliability test items and conditions:**

The reliability of products shall be satisfied with items listed below.

Confidence level : 97%

LTPD : 3%

NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Failure Judgment Criteria	Ac/Re
1	Reflow	TEMP:260°C±5°C	5 SEC	76 PCS	$I_v \leq I_{vt} * 0.5$ or $V_f \geq U$ or $V_f \leq L$	0/1
2	Temperature Cycle	H : +100°C 15min $\int$ 5min L : -40°C 15min	300 CYCLES	76 PCS		0/1
3	Thermal Shock	H : +100°C 5min $\int$ 10 sec L : -10°C 5min	300 CYCLES	76 PCS		0/1
4	High Temperature Storage	TEMP:100°C	1000 HRS	76PCS		0/1
5	Low Temperature Storage	TEMP:-40°C	1000 HRS	76 PCS		0/1
6	DC Operating Life	TEMP:25°C I <sub>f</sub> = 10mA	1000 HRS	76 PCS		0/1
7	High Temperature / High Humidity	85°C / 85% RH	1000 HRS	76 PCS		0/1

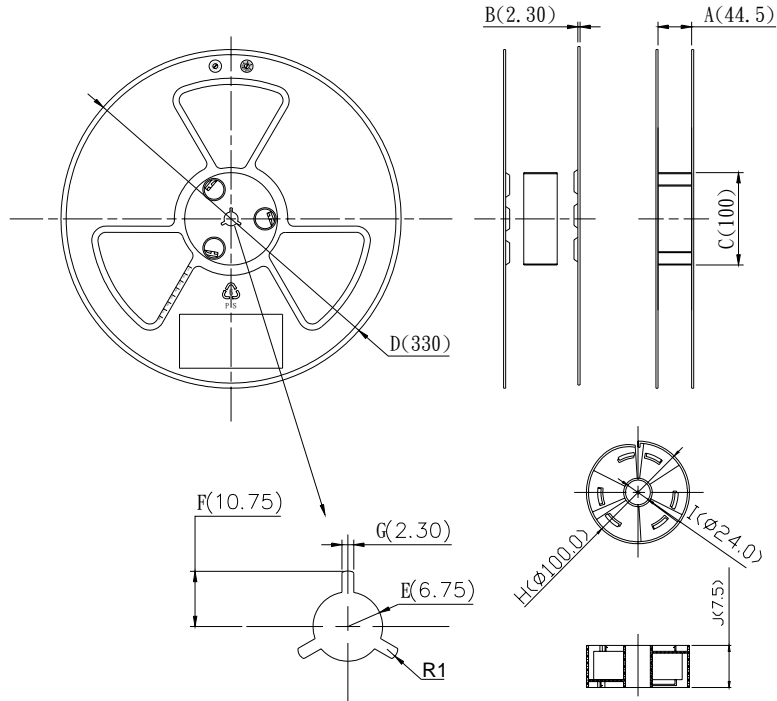
Note : I<sub>vt</sub> : The test I<sub>v</sub> value of the chip before the reliability test

I<sub>v</sub> : The test value of the chip that has completed the reliability test

U : Upper Specification Limit

L : Lower Specification Limit

**Package Dimensions**



**Taping Dimensions**

