



EVERLIGHT ELECTRONICS CO.,LTD.

# DATA SHEET

**PART NO.** : ELS-4005SURWA/S530-A3

**DATE** : 2005/8/14

**DEPARTMENT** : CHR1

**REVISION** : 1

<b>RECEIVED</b>			
<input checked="" type="checkbox"/> <b>MASS PRODUCTION</b>			
<input type="checkbox"/> <b>PRELIMINARY</b>			
<input type="checkbox"/> <b>CUSTOMER DESIGN</b>			
<b>DEVICE NUMBER</b> : CDDS-400-025			
<b>PAGE</b> : 6			
<b>CUSTOMER</b>	<b>DESIGNER</b>	<b>CHECKER</b>	<b>APPROVER</b>

<b>REV.</b>	<b>DESCRIPTION</b>	<b>RELEASE DATE</b>

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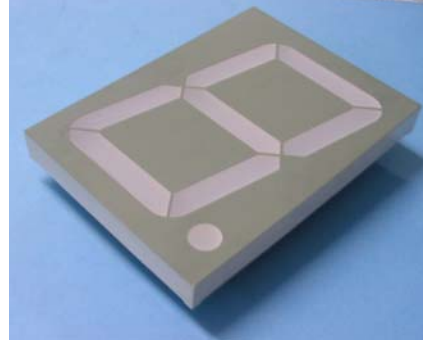


Technical Data Sheet  
4.0" Single Digit Displays

ELS-4005SURWA/S530-A3

■ Features :

- Industrial standard size.
- Low power consumption.
- Categorized for luminous intensity.
- Pb free
- The product itself will remain within RoHS compliant version



■ Descriptions :

- The ELS-4005 series is a large 101.2 mm (0.4")high seven segment display designed for viewing distances up to 7 meters.
- These displays provide excellent reliability in bright ambient light.
- These devices are made with white segments and gray surface.

■ Applications :

- Audio equipment
- Instrument panels
- Digital read out display

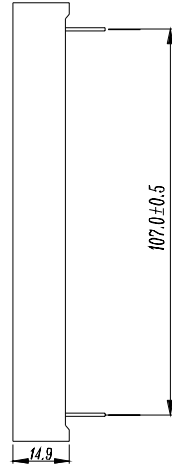
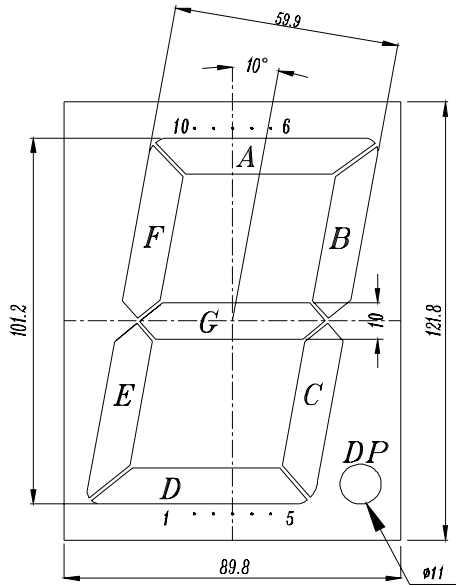
PART NO.	Chip	
	Material	Emitted Color
ELS-4005SURWA/S530-A3	AlGaInP	Hyper Red



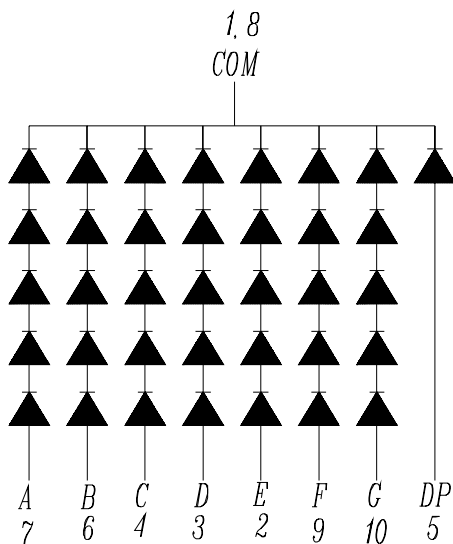
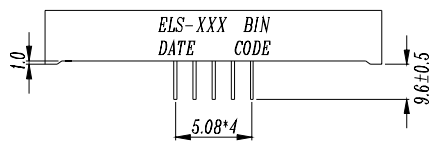
Technical Data Sheet  
4.0" Single Digit Displays

ELS-4005SURWA/S530-A3

Package Dimensions



- COMMON CATHODE
- 1 COMMON CATHODE
  - 2 ANODE E
  - 3 ANODE D
  - 4 ANODE C
  - 5 ANODE DP
  - 6 ANODE B
  - 7 ANODE A
  - 8 COMMON CATHODE
  - 9 ANODE F
  - 10 ANODE G



- Notes: 1.All dimensions are in millimeters , tolerance is 0.25mm unless otherwise noted.  
2.Above specification may be changed without notice.  
Supplier will reserve authority on material change for above specification.



## Technical Data Sheet

### 4.0" Single Digit Displays

ELS-4005SURWA/S530-A3

■ Absolute maximum ratings at  $T_a = 25^\circ\text{C}$  :

Parameter	Symbol	Rating	Unit
Reverse Voltage	$V_R$	5	V
Forward Current	$I_F$	25	mA
Operating Temperature	$T_{opr}$	-40 to +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 to +100	$^\circ\text{C}$
Soldering Temperature *	$T_{sol}$	$260 \pm 5$	$^\circ\text{C}$
Electrostatic Discharge	ESD	2000	V
Power Dissipation	$P_d$	300	mW

Note: \*Soldering time  $\leq 5$  seconds.

■ Electronic optical characteristics :

Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Per segment	$I_v$	----	8.0	----	mcd	$I_F=2\text{mA}$
			15.0	34.0	----	mcd	$I_F=10\text{mA}$
	Per decimal point		----	2.0	----	mcd	$I_F=2\text{mA}$
			3.7	8.0	----	mcd	$I_F=10\text{mA}$
Peak Wavelength		$\lambda_p$	----	632	----	nm	$I_F=20\text{mA}$
Dominant Wavelength		$\lambda_d$	----	624	----	nm	$I_F=20\text{mA}$
Spectrum Radiation Bandwidth		$\Delta\lambda$	----	20	----	nm	$I_F=20\text{mA}$
Forward Voltage	Per segment	$V_F$	----	10.0	12.0	V	$I_F=20\text{mA}$
	'Per decimal point		----	2.0	2.4	V	$I_F=20\text{mA}$
Reverse Current		$I_R$	----	----	100	$\mu\text{A}$	$V_R=5\text{V}$

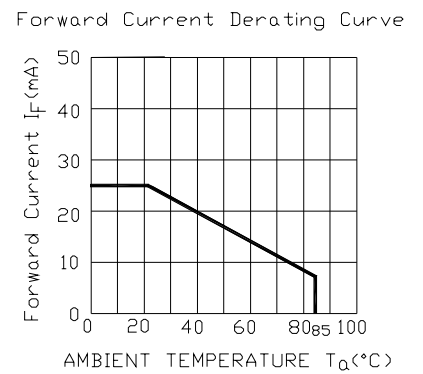
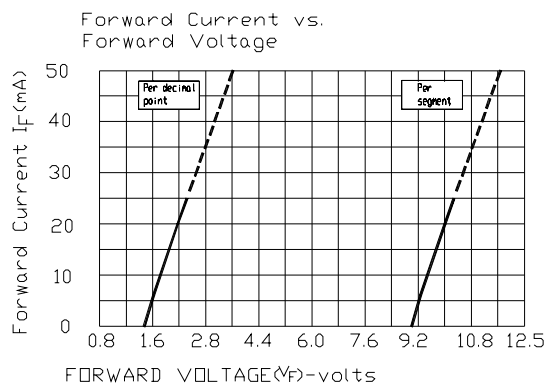
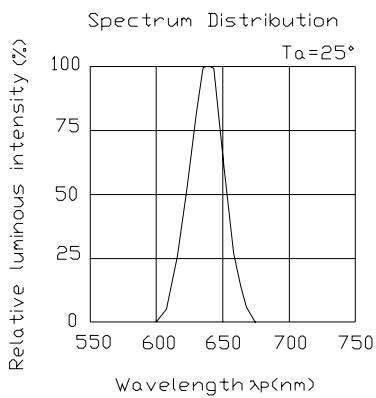


Technical Data Sheet  
4.0" Single Digit Displays

ELS-4005SURWA/S530-A3

■ Typical Electro-Optical Characteristic Curves:

(SUR)





# Technical Data Sheet

## 4.0" Single Digit Displays

ELS-4005SURWA/S530-A3

### 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	Solder Heat	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 : +85°C 30min $\int$ 5 min L : -55°C 30min	50 CYCLE	76 PCS		0/1
3	Thermal Shock	H : +100°C 5min $\int$ 10 sec L : -10°C 5min	50 CYCLE	76 PCS		0/1
4	High Temperature Storage	TEMP : 100°C	1000 HRS	76 PCS		0/1
5	Low Temperature Storage	TEMP : -55°C	1000 HRS	76 PCS		0/1
6	DC Operating Life	IF = 10 mA	1000 HRS	76 PCS		0/1
7	High Temperature / High Humidity	85°C/85% RH	1000 HRS	76 PCS		0/1

Note :  $I_{vt}$  : The test  $I_v$  value of the chip before the reliability test

$I_v$  : The test value of the chip that has completed the reliability test

U : Upper Specification Limit

L : Lower Specification Limit



Technical Data Sheet  
4.0" Single Digit Displays

ELS-4005SURWA/S530-A3

■ Packing Quantity Specification

- 1.2PCS/Plastic box ,3 Plastic/box
- 2.10Boxes/Carton

Label Form Specification

**EVERLIGHT**

CPN: RoHS

P/N:



S4005SURWA/S530-A3

QTY:   CAT:  



LOT NO:   REF:  

MADE IN CHINA

CPN: Customer's Production Number  
P/N : Production Number  
QTY: Packing Quantity  
CAT: Ranks  
HUE: Dominant Wavelength  
REF: Reference  
LOT No: Lot Number  
MADE IN CHINA: Production Place

Notes :

1. Above specification may be changed without notice. EVERLIGHT 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 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 corporation. Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent.

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