



EVERLIGHT ELECTRONICS CO.,LTD.

DATA SHEET

PART NO. : ELF-512SURWA/S530-A3

DATE : 2005/8/11

DEPARTMENT : CHRD1

REVISION : 1

| | | | |
|------------------------------------------------------------|-----------------|----------------|-----------------|
| RECEIVED | | | |
| <input checked="" type="checkbox"/> MASS PRODUCTION | | | |
| <input type="checkbox"/> PRELIMINARY | | | |
| <input type="checkbox"/> CUSTOMER DESIGN | | | |
| DEVICE NUMBER : <u>CDDF-512-034</u> | | | |
| PAGE : <u>6</u> | | | |
| CUSTOMER | DESIGNER | CHECKER | APPROVER |
| | | | |

| | | |
|-------------|--------------------|---------------------|
| | | |
| | | |
| | | |
| | | |
| REV. | DESCRIPTION | RELEASE DATE |

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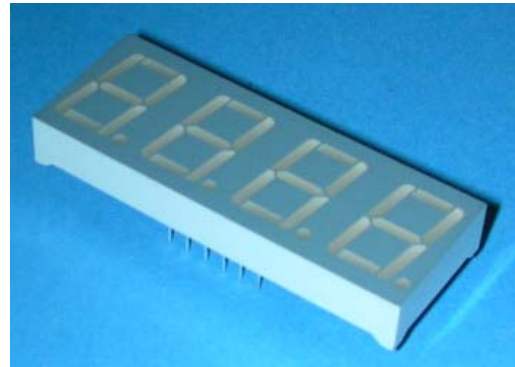


Technical Data Sheet
0.56" Quadruple Digit Displays

ELF-512SURWA/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 ELF-512 series is a large 14.22 mm (0.56")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

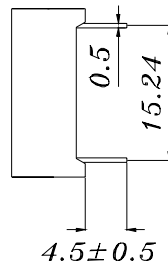
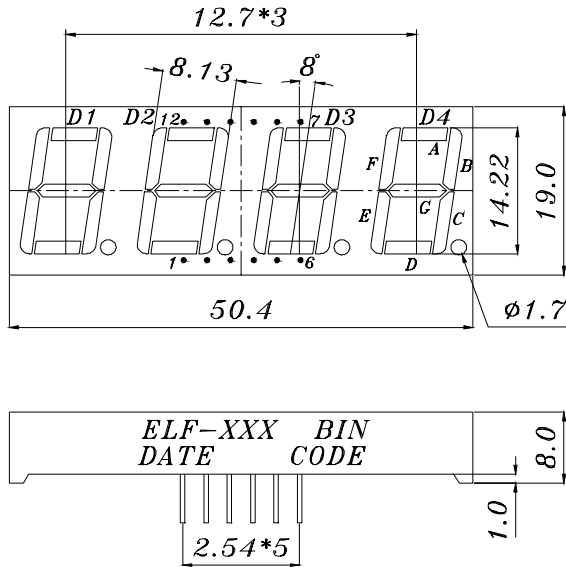
| PART NO. | Chip | |
|----------------------|----------|---------------|
| | Material | Emitted Color |
| ELF-512SURWA/S530-A3 | AlGaInP | Hyper Red |



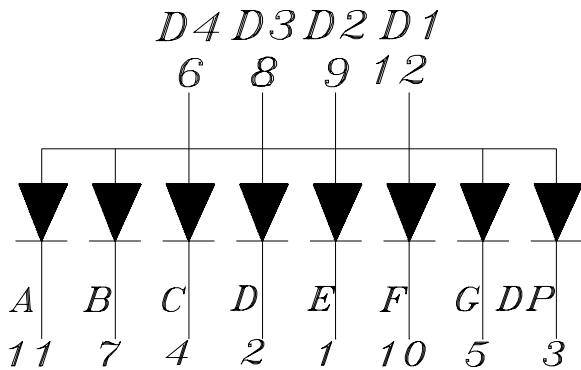
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0.56" Quadruple Digit Displays

ELF-512SURWA/S530-A3

Package Dimensions



- COMMON ANODE*
1. CATHODE E
 2. CATHODE D
 3. CATHODE DP
 4. CATHODE C
 5. CATHODE G
 6. COMMON ANODE D4
 7. CATHODE B
 8. COMMON ANODE D3
 9. COMMON ANODE D2
 10. CATHODE F
 11. CATHODE A
 12. COMMON ANODE D1



- 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.



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■ Absolute maximum ratings at Ta = 25°C :

| Parameter | Symbol | Rating | Unit |
|-------------------------|--------|-------------|------|
| Reverse Voltage | VR | 5 | V |
| Forward Current | IF | 25 | mA |
| Operating Temperature | Topr | -40 to +85 | °C |
| Storage Temperature | Tstg | -40 to +100 | °C |
| Soldering Temperature * | Tsol | 260 ± 5 | °C |
| Electrostatic Discharge | ESD | 2000 | V |
| Power Dissipation | Pd | 60 | mW |

Note: *Soldering time ≤ 5 seconds.

■ Electronic optical characteristics :

| Parameter | | Symbol | Min. | Typ. | Max. | Unit | Condition |
|------------------------------|-------------------|--------|------|------|------|------|-----------|
| Luminous Intensity | Per segment | Iv | ---- | 3.0 | ---- | mcd | IF=2mA |
| | | | 7.8 | 15.0 | ---- | mcd | IF=10mA |
| | Per decimal point | | ---- | 0.7 | ---- | mcd | IF=2mA |
| | | | 2.5 | 3.5 | ---- | mcd | IF=10mA |
| Peak Wavelength | | λ p | ---- | 632 | ---- | nm | IF=20mA |
| Dominant Wavelength | | λ d | ---- | 624 | ---- | nm | IF=20mA |
| Spectrum Radiation Bandwidth | | △ λ | ---- | 20 | ---- | nm | IF=20mA |
| Forward Voltage | | VF | ---- | 2.0 | 2.4 | V | IF=20mA |
| Reverse Current | | IR | ---- | ---- | 100 | μ A | VR=5V |

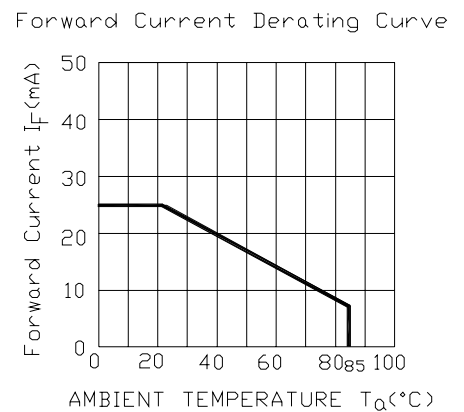
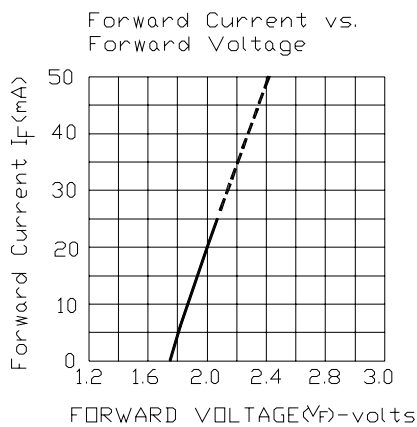
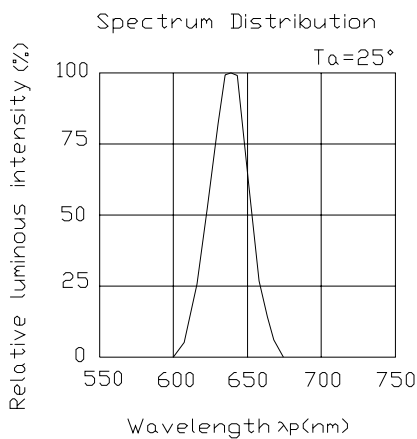


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0.56" Quadruple Digit Displays

ELF-512SURWA/S530-A3

■ Typical Electro-Optical Characteristic Curves:

(SUR)





Technical Data Sheet

0.56" Quadruple Digit Displays

ELF-512SURWA/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 § 5 min L : -55°C 30min | 50 CYCLE | 76 PCS | | 0/1 |
| 3 | Thermal Shock | H : +100°C 5min § 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



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■ Packing Quantity Specification

1.10PCS/tube, 54 tubes/box
2.4Boxes/Carton

Label Form Specification

EVERLIGHT

CPN: RoHS
P/N:

F512SURWA/S530-A3

QTY: CAT:
 HUE:
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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