Technical Data Sheet

0.39" Dual Digit SMD Displays

ELSD-405SURWA/S530-A3/S290

Features

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

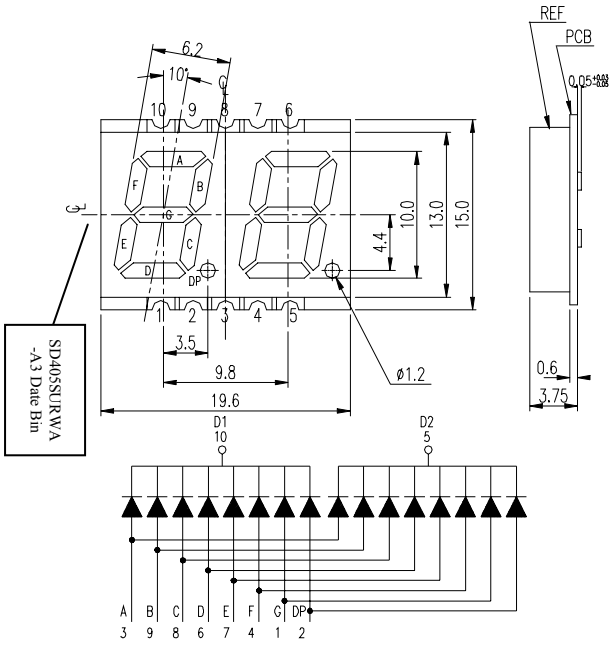
Chip		Face Color
Material	Emitted Color	
A1GaInP	Brilliant Red	Gray

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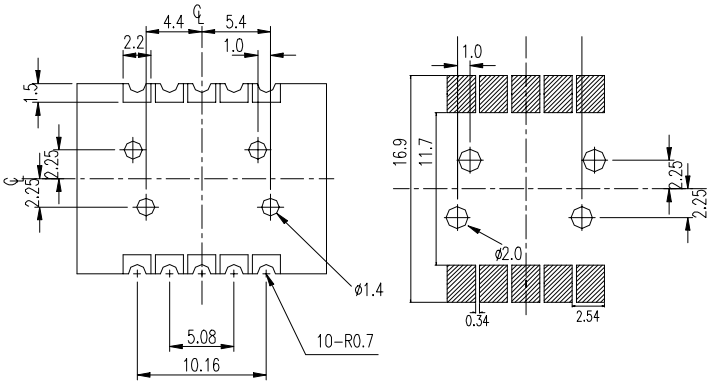
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Package Dimensions



Land Pattern (Recommend)



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

Parameter	Symbol	Rating	Units
Forward Current	I_F	25	mA
Pulse Forward Current*1	I_{FP}	60	mA
Operating Temperature	T_{opr}	-40 ~ +105	℃
Storage Temperature	T_{stg}	-40 ~ +105	℃
Reflow Temperature*2	T_{ref}	260	℃
Electrostatic Discharge	ESD	2000	V
Power Dissipation	P_d	60	mW
Reverse Voltage	V_R	5	V

Notes: *1:I_{FP} Conditions--Pulse Width≦10msec and Duty≦1/10.

*2:Reflow time≦5 seconds.

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Electro-Optical Characteristics (Ta=25℃)

Parameter		Symbol	Min.	Typ.	Max.	Units	Condition
Forward Voltage		V_F	--	2.0	2.4	V	I_F=20mA
Reverse Current		I_R	--	--	10	μA	V_R=5V
Luminous Intensity	Per segment	I_V	7.8	17.10	--	mcd	I_F=10mA
	Per decimal point		--	5.6	--		
Peak Wavelength		λp	--	632	--	nm	I_F=20mA
Dominant Wavelength		λd	--	624	--	nm	I_F=20mA
Spectrum Radiation Bandwidth		△λ	--	20	--	nm	I_F=20mA

Bin Range of Luminous Intensity (Unit: mcd)

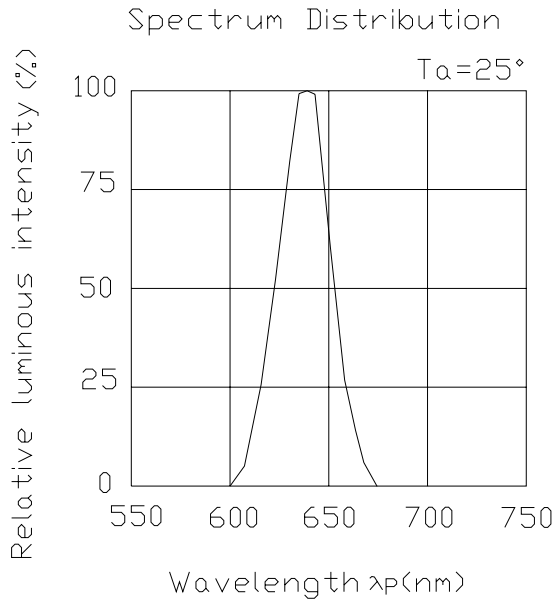
Rank	Min.	Max.	Rank	Min.	Max.
Q	7.8	12.5	T	21.0	34.0
R	11.0	17.6	U	30.0	48.0
S	15.0	24.0	V	42.0	67.0

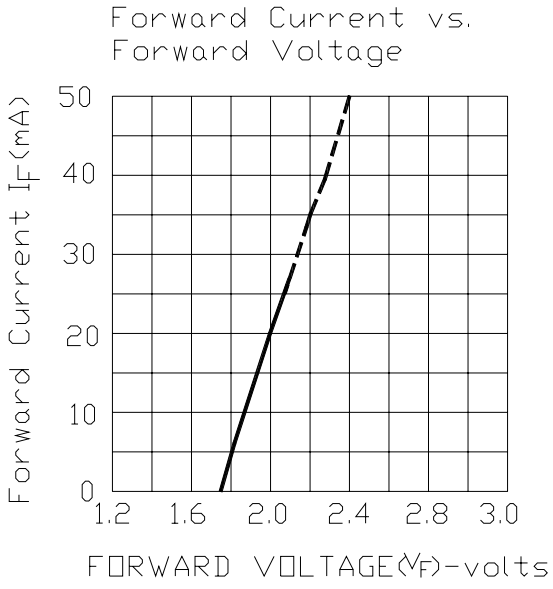
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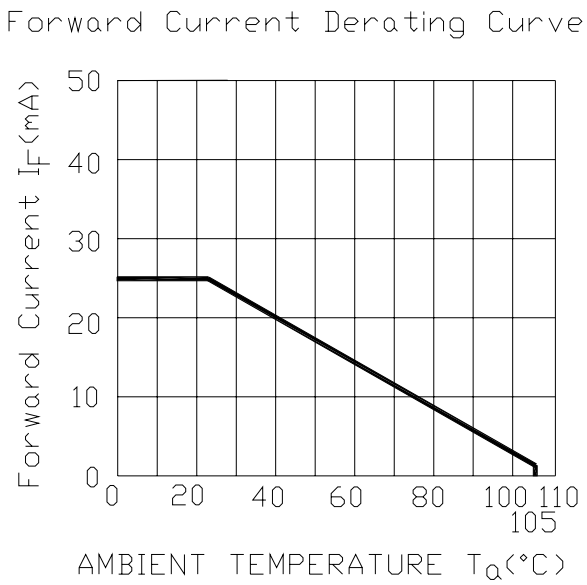
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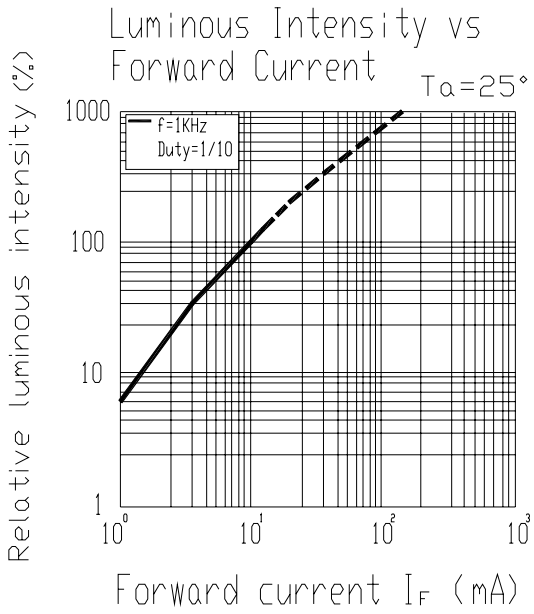
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Typical Electro-Optical Characteristics Curves







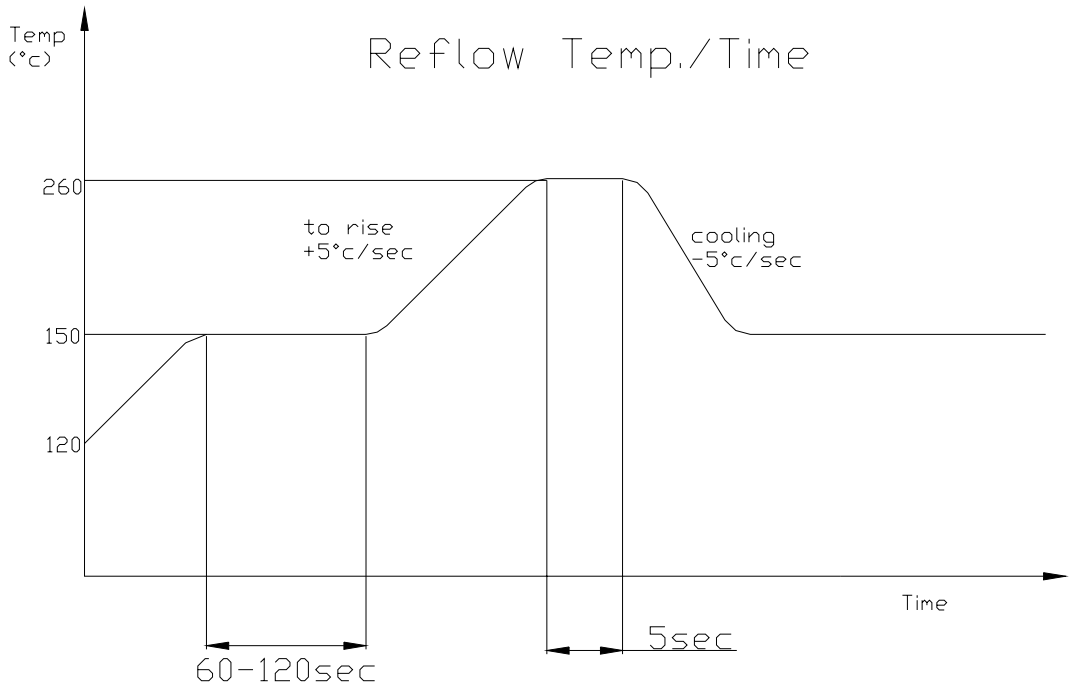


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■ Reflow Temp. / Time :



■ Soldering Iron :

Basic spec is ≦5 sec when 260℃. If temperature is higher, time should be shorter (+10℃ → -1sec). Power dissipation of iron should be smaller than 15 W, and temperature should be controllable. Surface temperature of the device should be under 230 ℃.

■ Rework :

1. Customer must finish rework within 5 sec under 260℃.
2. The head of iron can not touch copper foil.

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■ Reliability test items and conditions:

The reliability of products shall be satisfied with items listed below.
Confidence level：90%
LTPD：10%

NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Failure Judgment Criteria	Ac/Re
1	Reflow Soldering	TEMP:260°C±5°C 5~10 SEC	6 Min	22 PCS	Iv≦Ivt*0.5 or VF≧U or VF≦L	0/1
2	Temperature Cycle	H：+100°C 15min ∫ 5min L：-40°C 15min	300 Cycles	22 PCS		0/1
3	Thermal Shock	H：+100°C 5min ∫ 10 sec L：-10°C 5min	300 Cycles	22 PCS		0/1
4	High Temperature Storage	TEMP:105°C	1000 HRS	22 PCS		0/1
5	Low Temperature Storage	TEMP:-40°C	1000 HRS	22 PCS		0/1
6	DC Operating Life	TEMP:25°C If＝10mA	1000 HRS	22 PCS		0/1
7	High Temperature / High Humidity	85°C / 85% RH	1000 HRS	22 PCS		0/1

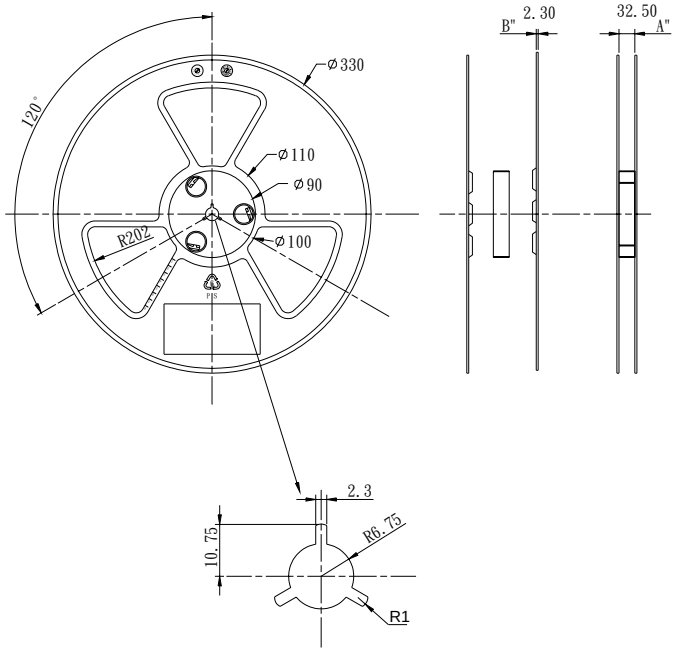
Note：Ivt：The test Iv value of the chip before the reliability test
Iv：The test value of the chip that has completed the reliability test
U：Upper Specification Limit
L：Lower Specification Limit

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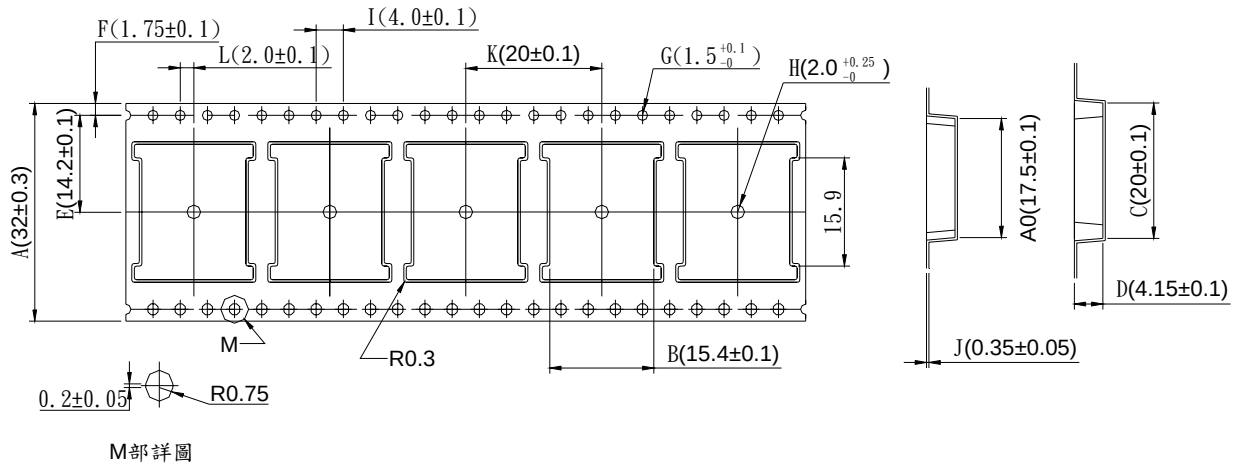
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Package Dimensions



Taping Dimensions



M部詳圖

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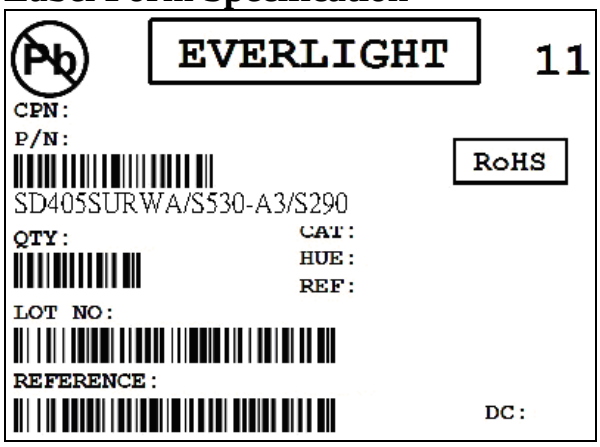
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Packing Quantity Specification

800PCS/Roll，1Roll/Small box, 6 Small boxes/Box

Label Form Specification



CPN: Customer's Production Number
P/N : Production Number
QTY: Packing Quantity
CAT: Ranks
HUE: Peak Wavelength
REF: Reference
LOT No: Lot Number
DC: Year and weekly
REFERENCE: Label identify code

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.
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