



American Opto Plus LED Corp.
0.56" SMD Type LED Display
SMA561LY-ST-1.5 G/W
SMC561LY-ST-1.5 G/W

● **EDIT HISTORY**

Version A: Jul. 15, 2015

Preliminary spec.



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● **FEATURES**

- 0.56 inch (14.22 mm) Digit Height.
- Low current operation.
- Super thin SMD type.
- Gray face, White segment.
- RoHS compliant, Pb Free.

● **DESCRIPTION**

The SMA561LY-ST-1.5 G/W & SMC561LY-ST-1.5 G/W

Are 0.56 inch (14.22mm) height single digit 7-segment display.

This device utilizes Super Bright Yellow LED chip which are made from AlGaInP on a transparent GaAs substrate.

The display has Gray face, White segment.

● **DEVICE**

PART NO	DESCRIPTION
SMA561LY-ST-1.5 G/W	Common Anode
SMC561LY-ST-1.5 G/W	Common Cathode

RoHS Compliance



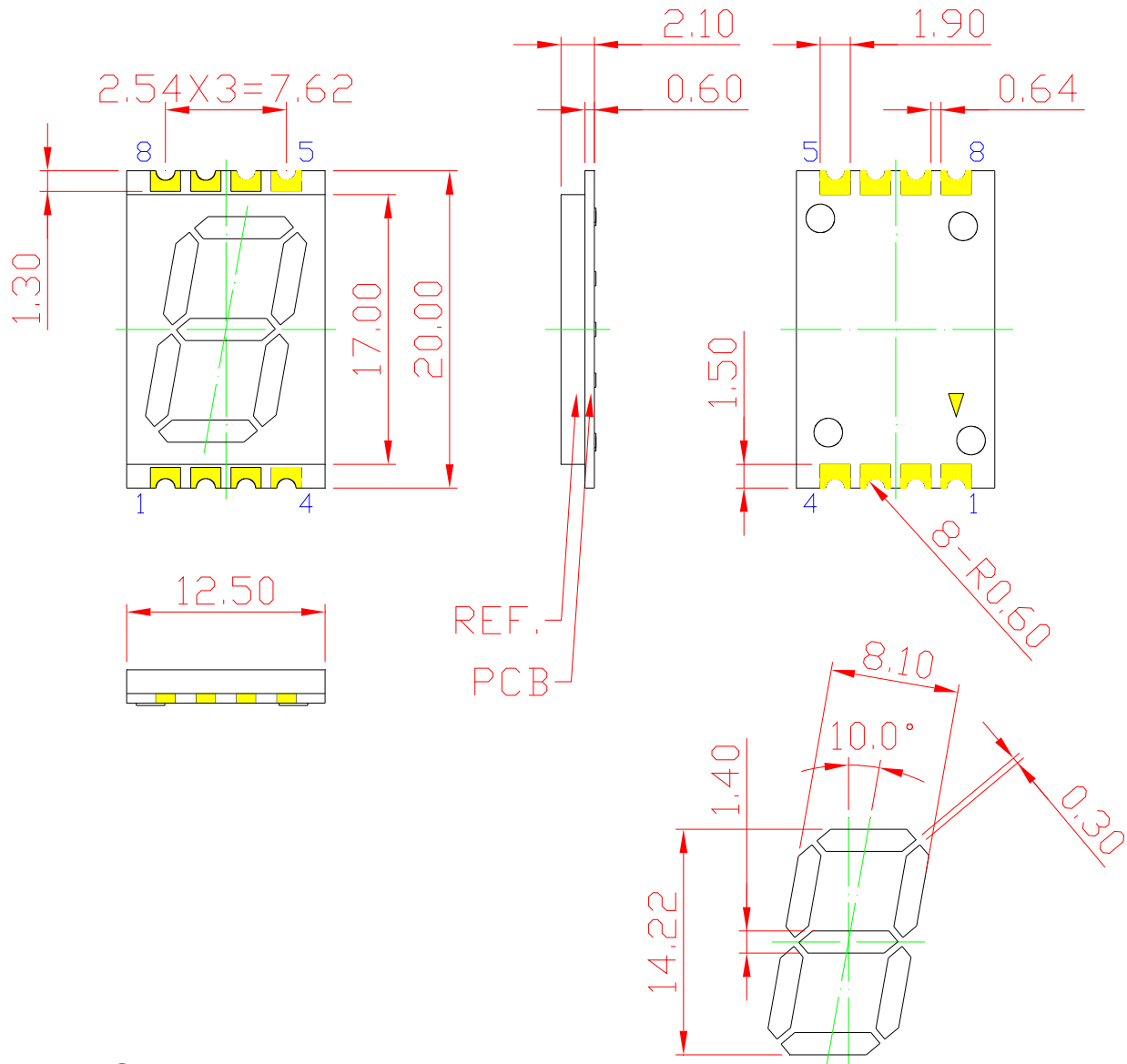
Pb free.





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● **MECHANICAL DIMENSIONS**



NOTE:

Dimension in millimeters (inches),

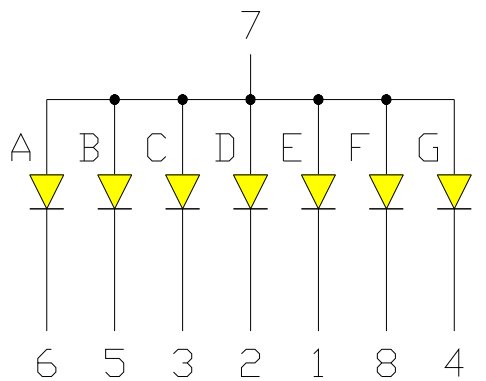
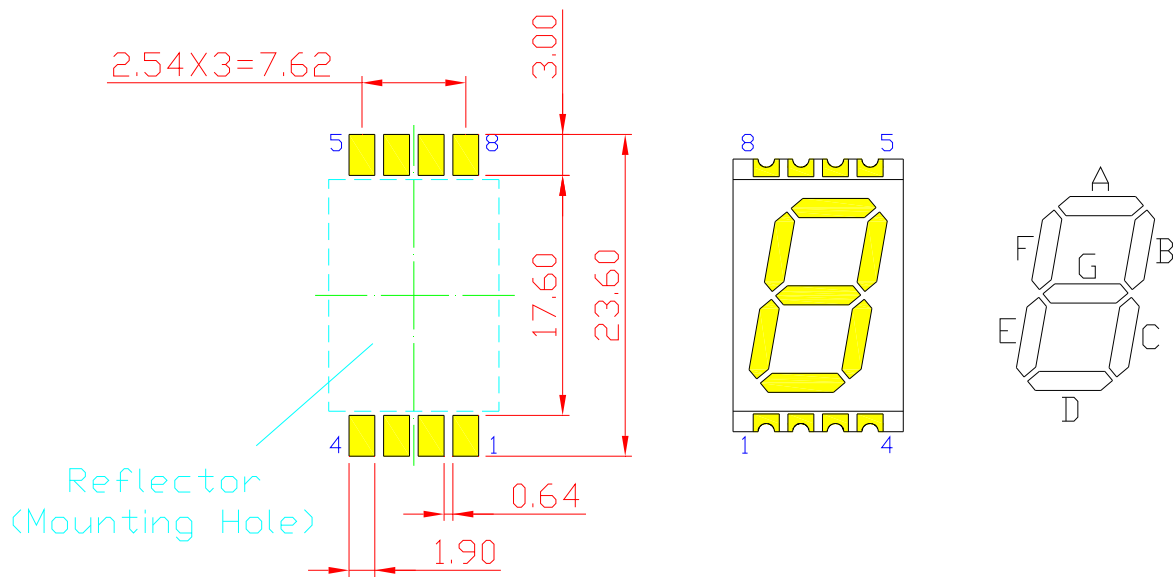
And tolerances are $\pm 0.25\text{mm}$ (.01") specified.



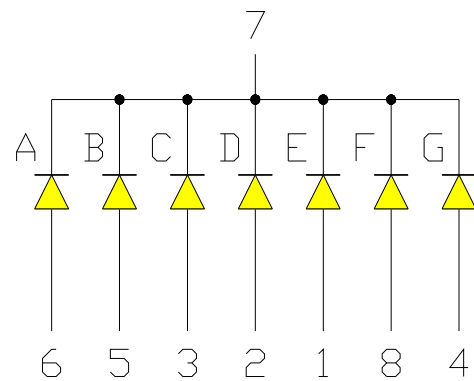
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● **TYPICAL INTERNAL EQUIVALENT CIRCUIT**

Reverse Mount
 Recommended
 Soldering Pattern



SMA561LY-ST-1.5 G/W



SMC561LY-ST-1.5 G/W



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● **LY: SUPER BRIGHT YELLOW (AlGaInP/GaAs)**

ABSOLUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	P _{AD}	70	mW
Derating liner from 25°C	-	0.28	mA / °C
Continuous forward current	I _{AF}	25	mA
Peak current (duty cycle 1/10, 1kHz)	I _{PF}	90	mA
Reverse voltage	V _R	5	V
Operating temperature	T _{OPR}	-40 to +105	°C
Storage temperature	T _{STG}	-40 to +105	°C

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Min.	Type.	Max.	Unit
Forward Voltage, (Per Dice)	V _F	I _F =20mA	-	2.0	2.6	V
Reverse Current, (Per Dice)	I _R	V _R =5V	-	-	10	μA
Peak Wavelength	λ _P	I _F =20mA	-	593	-	nm
Dominant Wavelength	λ _D	I _F =20mA	585	-	595	nm
Luminous Intensity	I _V	I _F =10mA	10	-	40	mcd
Spectral radiation bandwidth	Δλ	I _F =20mA	-	20	-	nm



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● **LY: BIN GRADE (Unit : mcd) Test Condition: 5V / 10mA**

Super Bright Yellow	G	H	I
	10.0 – 20.0	20.1 – 30.0	30.1 – 40.0

● **LY: HUE GRADE (λ_D : nm)**

1	2	3
585 – 588	588.1 – 592	592.1 – 595

● **AVAILABLE BIN / HUE TABLE**

G1	H1	I1
G2	H2	I2
G3	H3	I3



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● LY: SUPER BRIGHT YELLOW (AlGaInP/GaAs) CURVE

Typical Electro-optical Characteristic Curves
(25 °C Free Air Temperature Unless Otherwise Specified)

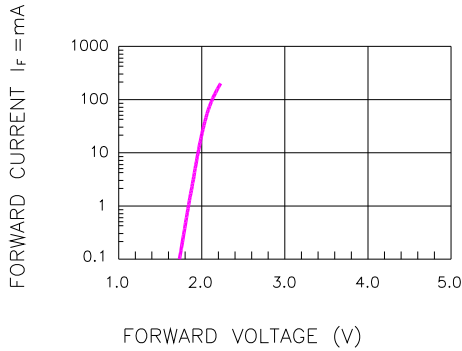


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

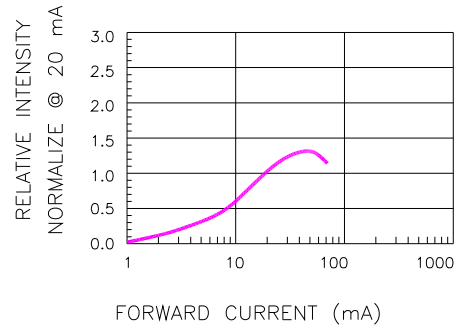


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

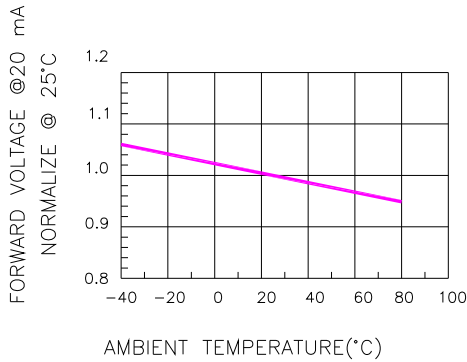


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

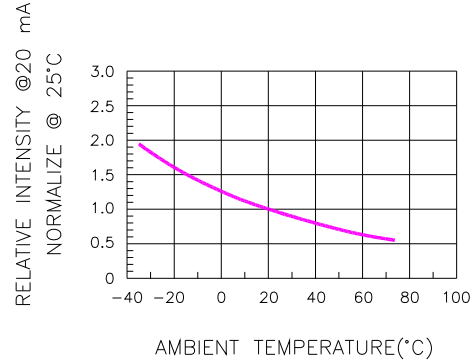


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

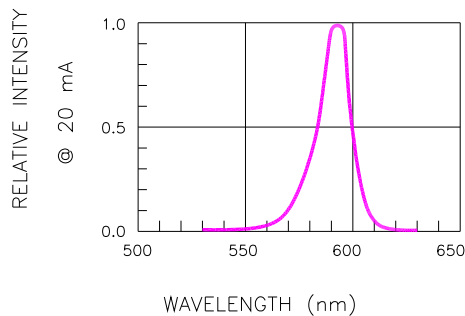


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

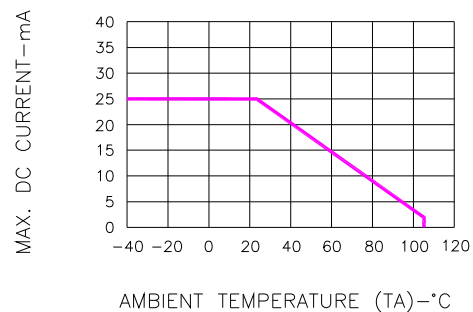


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

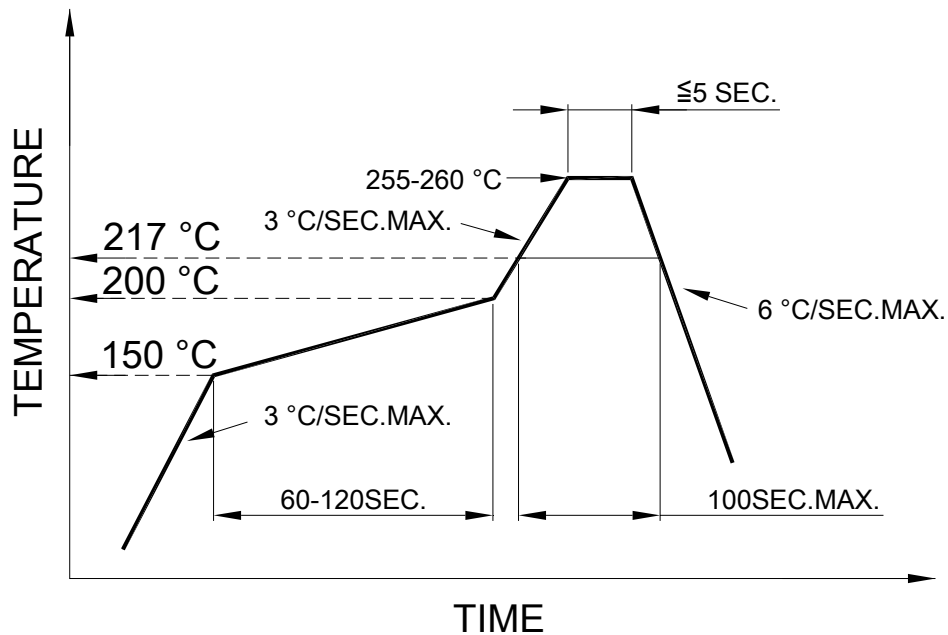


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● **RECOMMEND SOLDERING PROFILE**

SMT Soldering Profile

Pb free reflow soldering Profile



● **SOLDERING IRON**

Basic specification : ≤ 4 seconds when 260°C, If temperature is higher, time should be shorter (+10°C→1 sec). Power dissipation of iron should be smaller than 15W, and temperature should be controllable. Surface temperature of the device should be under 230°C.

● **REWORK**

Customer must finish rework within 3 sec. under 350°C.

The head of soldering iron cannot touch copper foil.