



**American Opto Plus LED Corp.**  
**0.56" SMD Type LED Display**  
**SMC/A561E G/W**

● **EDIT HISTORY**

Version A: Apr. 23, 2009

New color data sheet.

Version B: Mar. 17, 2010

Change mechanical dimensions.



# American Opto Plus LED Corp.

## 0.56" SMD Type LED Display

### SMC/A561E G/W

#### ● FEATURES

- 0.56 inch (14.2 mm) Digit Height.
- Low current operation.
- SMD type.
- Gray face, White segment.
- RoHS compliant, Pb Free.

#### ● DESCRIPTION

The SMC/A561E G/W is a 0.56 inch (14.2 mm) height single 7-segment display. This device utilizes Hi-Eff. Red LED chip which are made from GaAsP on a transparent GaP substrate. The display has Gray face, White segment.

#### ● DEVICE

PART NO	DESCRIPTION
Hi-Eff. Red	Common Cathode / Anode
SMC/A561E G/W	

**RoHS Compliance**



**Pb free.**



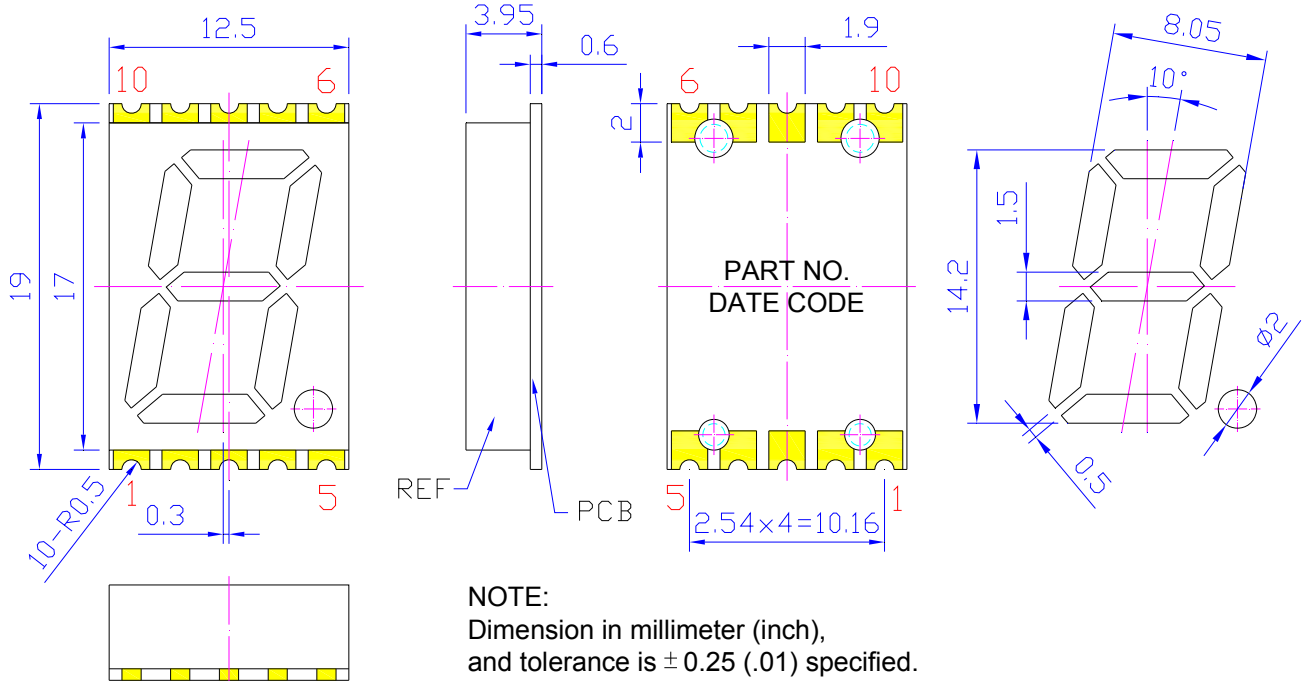


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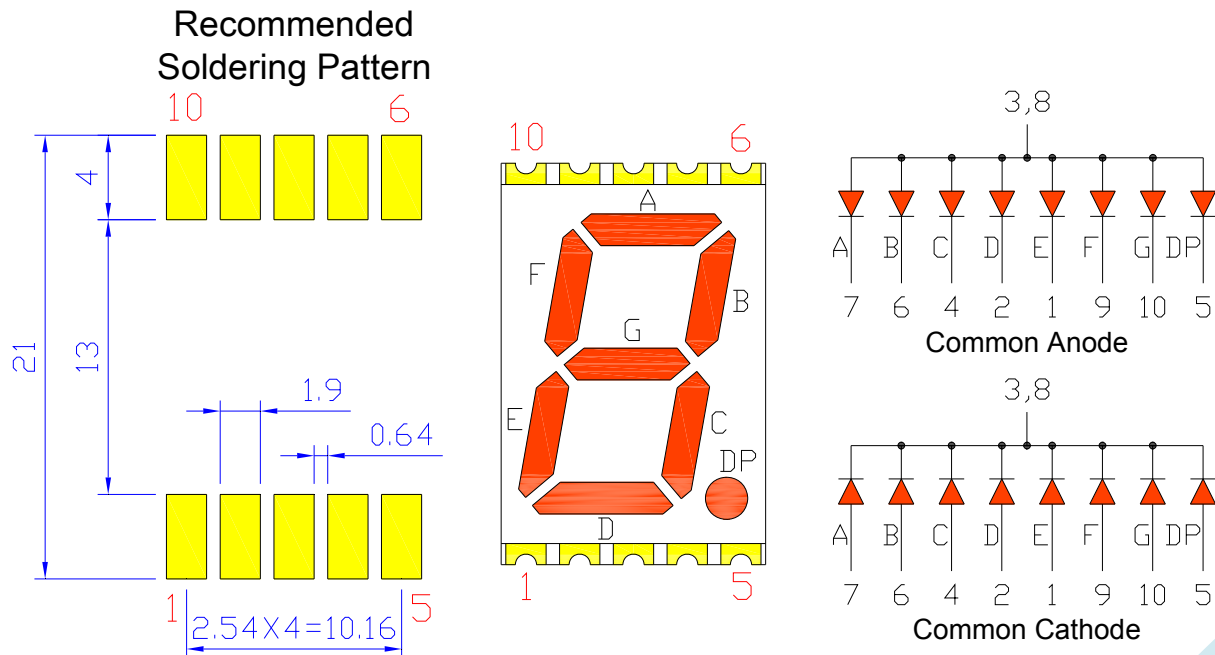
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#### MECHANICAL DIMENSIONS



#### TYPICAL INTERNAL EQUIVALENT CIRCUIT





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● **E: HIGH EFFCENCY RED (GaAsP/GaP)**

ABSOLUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Hi-Eff. Red	Unit
Power dissipation per dice	P <sub>AD</sub>	70	mW
Derating liner from 25°C per dice	-	0.28	mA / °C
Continuous forward current per dice	I <sub>AF</sub>	25	mA
Peak current per dice (duty cycle 1/10, 1kHz)	I <sub>PF</sub>	90	mA
Reverse voltage per dice	V <sub>R</sub>	5	V
Operating temperature	T <sub>OPR</sub>	-40 to +105	°C
Storage temperature	T <sub>STG</sub>	-40 to +105	°C

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Min.	Type.	Max.	Unit
Forward voltage per dice	V <sub>F</sub>	I <sub>F</sub> =20mA	-	2.0	2.6	V
Reverse current per dice	I <sub>R</sub>	V <sub>R</sub> =5V	-	-	10	µA
Peak wavelength per dice	λ <sub>P</sub>	I <sub>F</sub> =20mA	-	632	-	nm
Dominant wavelength per dice	λ <sub>D</sub>	I <sub>F</sub> =20mA	-	620	-	nm
Luminous intensity per dice	I <sub>V</sub>	I <sub>F</sub> =20mA	6	-	-	mcd
Spectral radiation bandwidth per dice	Δλ	I <sub>F</sub> =20mA	-	35	-	nm



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### SMC/A561E G/W

#### ● E: HIGH EFFCENCY RED (GaAsP/GaP) CURVE

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

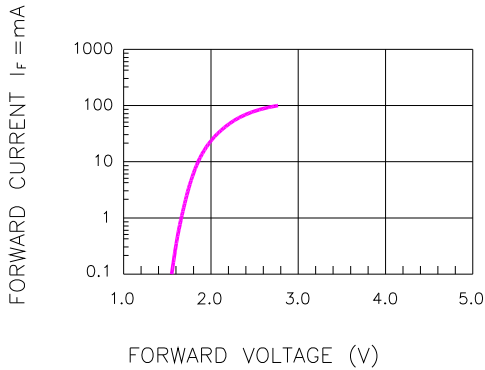


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

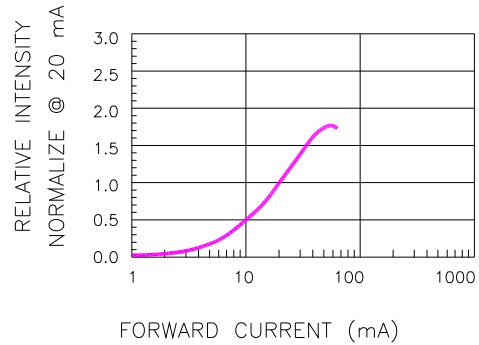


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

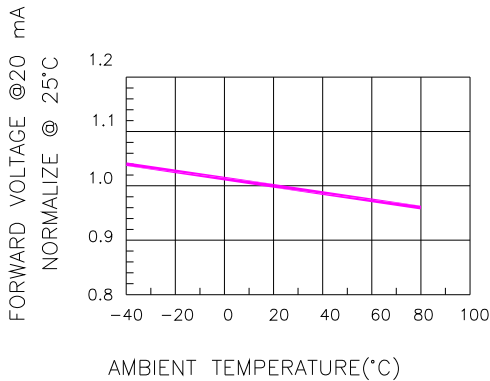


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

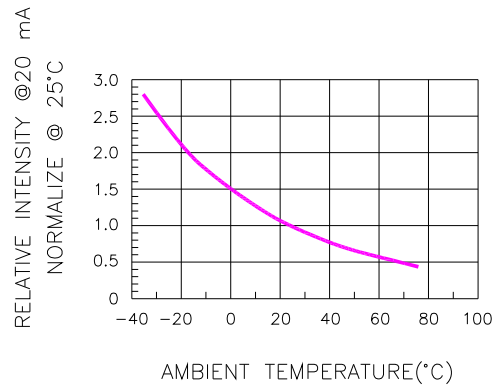


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

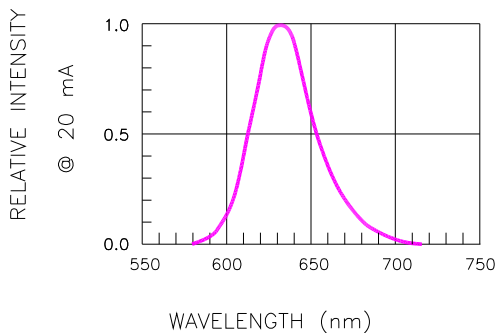


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

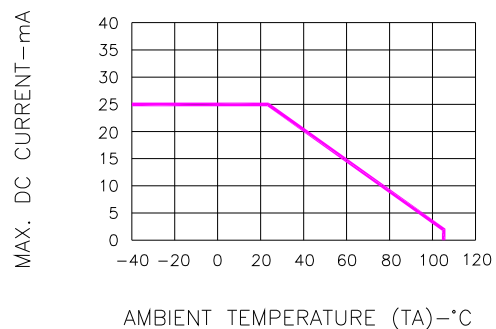


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE



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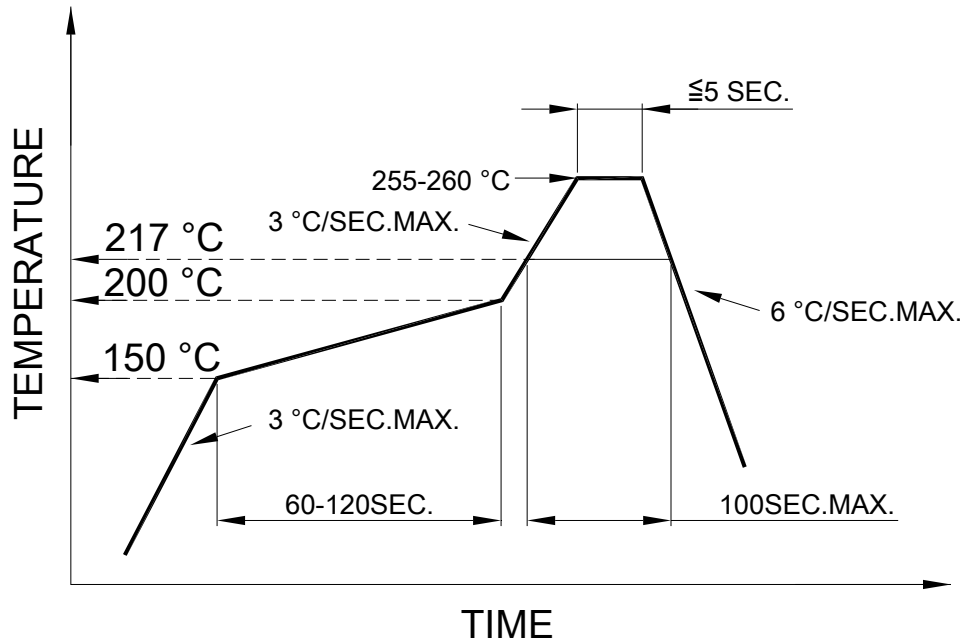
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#### ● SMT REFLOW SOLDERING INSTRUCTIONS

SMT Soldering Profile

Pb free reflow soldering Profile



#### ● SOLDERING IRON

Basic spec is  $\leq 4$  sec 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 5 sec. under 260°C.
- The head of soldering iron cannot touch copper foil.

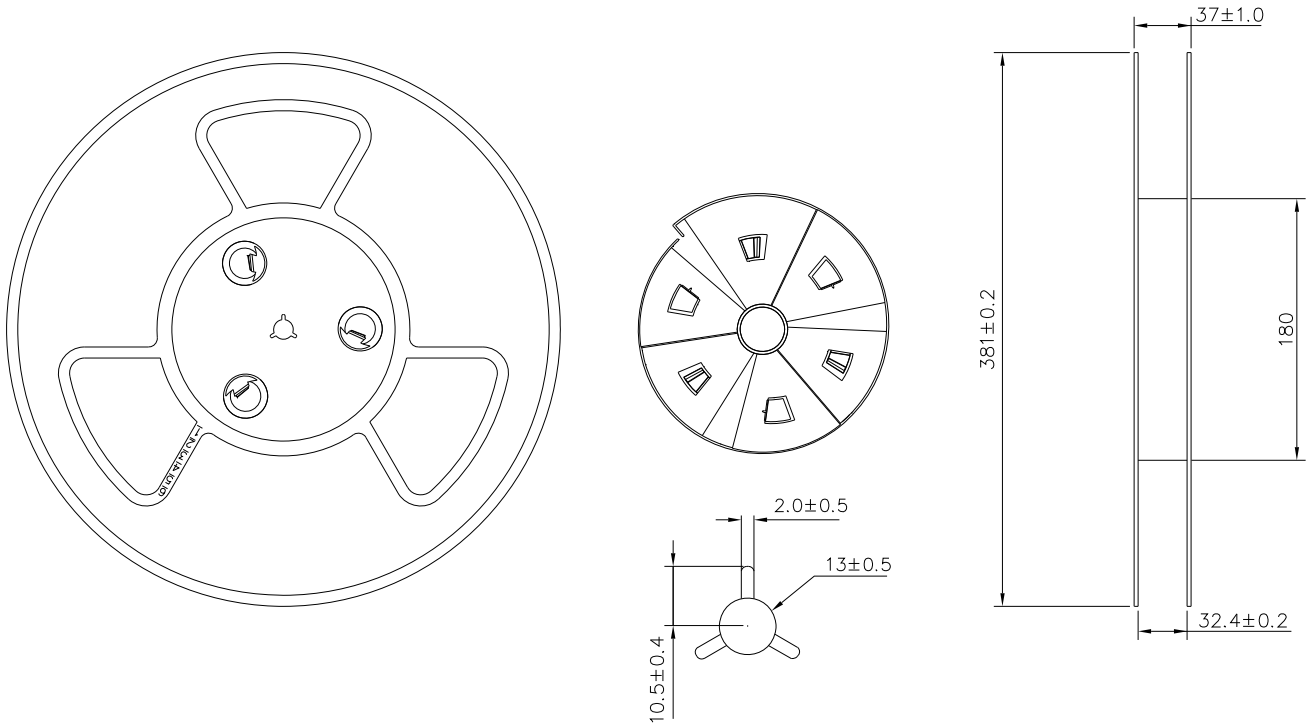


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### SMC/A561E G/W

#### ● REEL DIMENSIONS



#### ● PACKING & LABEL SPECIFICATIONS

