



American Opto Plus LED Corp.
0.40" SMD Type LED Display
SMC/A-402LE G/W

● **EDIT HISTORY**

Version A: Apr. 23, 2009

New color data sheet.



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● FEATURES

- 0.40 inch (10.16 mm) Digit Height.
- Low current operation.
- SMD type.
- Gray face, White segment.
- RoHS compliant, Pb Free.

● DESCRIPTION

The SMC/A-402LE G/W is a 0.40 inch (10.16 mm) height dual digits display. This device utilizes Super Bright Red Orange LED chip which are made from AlGaInP on a transparent GaAs substrate. The display has Gray face, White segment.

● DEVICE

PART NO	DESCRIPTION
Super Bright Red Orange	Common Anode / Cathode
SMC/A-402LE G/W	

RoHS Compliance



Pb free.



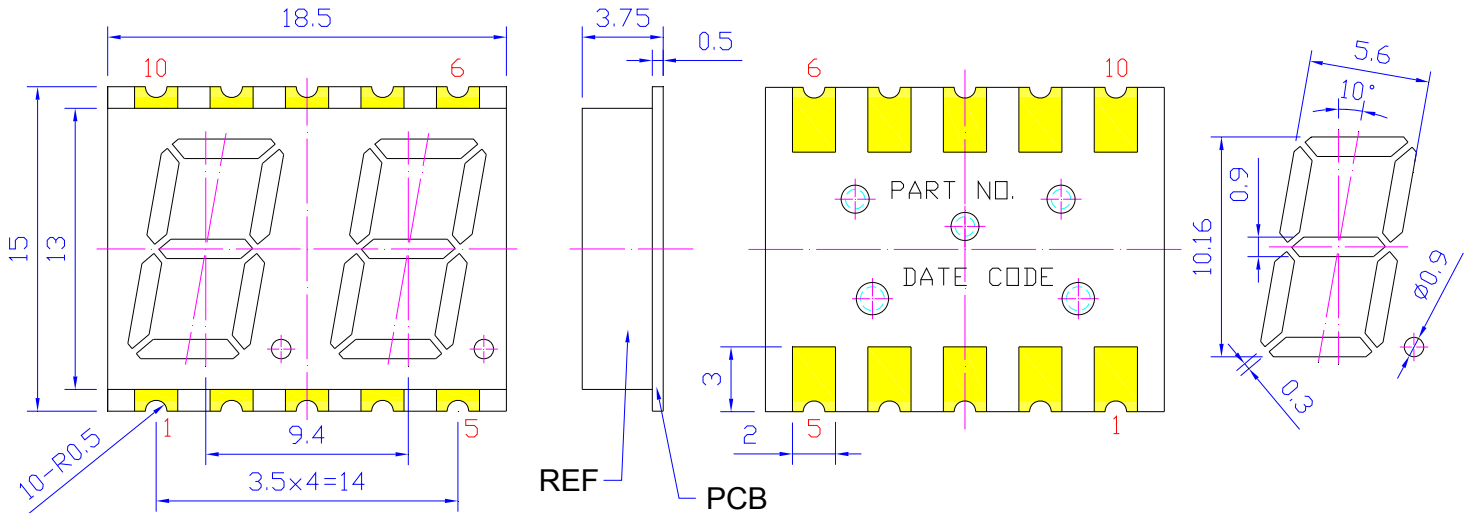


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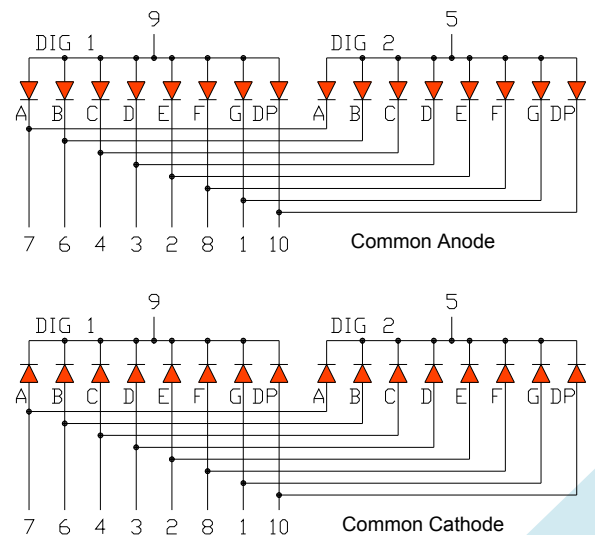
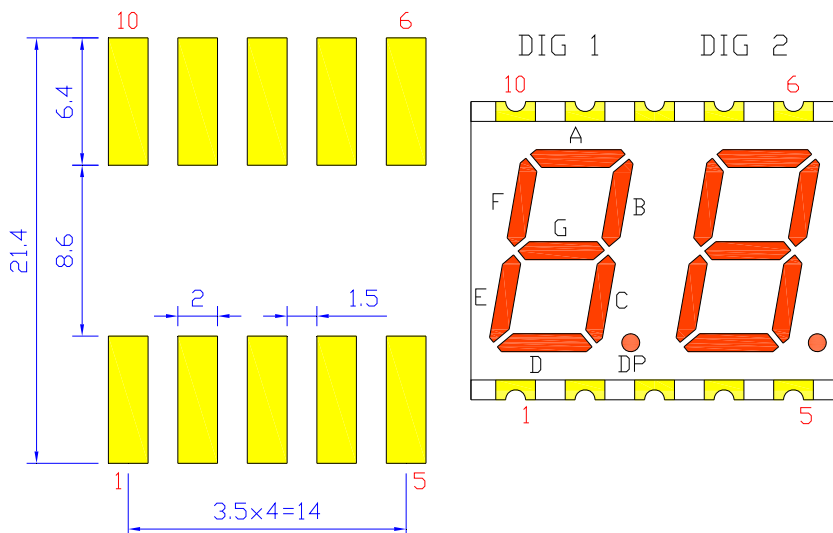
MECHANICAL DIMENSIONS



NOTE:
Dimension in millimeter (inch),
and tolerance is ± 0.25 (.01) specified.

TYPICAL INTERNAL EQUIVALENT CIRCUIT

Recommended Soldering Pattern





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● **LE: SUPER BRIGHT RED ORANGE (AlGaInP/GaAs)**

ABSOLUTE MAXIMUM RATING AT $T_a=25^{\circ}\text{C}$

Parameter	Symbol	Super Bright Red Orange	Unit
Power dissipation per dice	P_{AD}	70	mW
Derating Liner from 25°C per dice	-	0.33	$\text{mA}/^{\circ}\text{C}$
Continuous forward current per dice	I_{AF}	25	mA
Peak current per dice (duty cycle 1/10, 1kHz)	I_{PF}	90	mA
Reverse voltage per dice	V_R	5	V
Operating temperature	T_{OPR}	-40 to +105	$^{\circ}\text{C}$
Storage temperature	T_{STG}	-40 to +105	$^{\circ}\text{C}$

ELECTRICAL - OPTICAL CHARACTERISTICS AT $T_a=25^{\circ}\text{C}$

Characteristic	Symbol	Condition	Min.	Type	Max.	Unit
Forward Voltage	V_F	$I_F = 20\text{mA}$	-	2.0	2.4	V
Reverse Current	I_R	$V_R = 5\text{V}$	-	-	10	μA
Peak Wavelength	λ_P	$I_F = 20\text{mA}$	-	632	-	nm
Domminant Wavelength	λ_d	$I_F = 20\text{mA}$	619	624	629	nm
Average Luminous Intensity	I_V	$I_F = 20\text{mA}$	-	40	-	mcd
Spectrum Radiation Bandwidth	$\Delta\lambda$	$I_F = 20\text{mA}$	-	20	-	nm



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● LE: SUPER BRIGHT RED ORANGE (AlGaInP/GaAs) CURVE

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

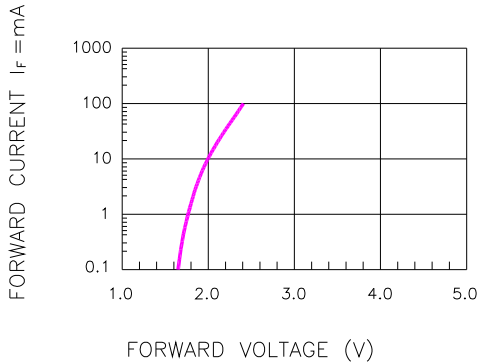


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

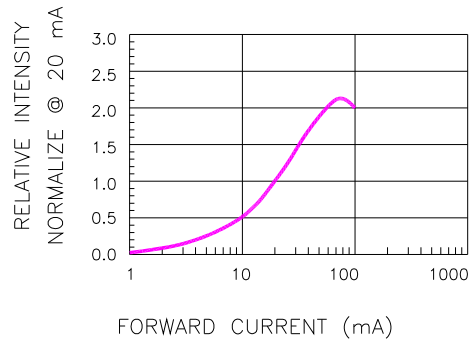


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

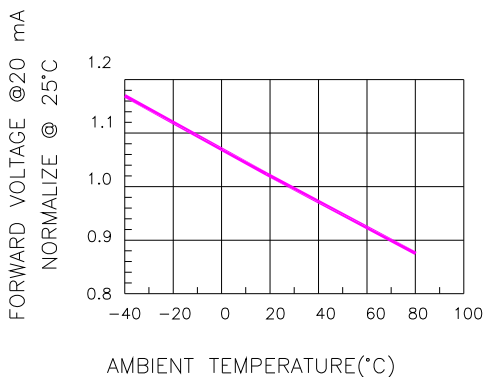


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

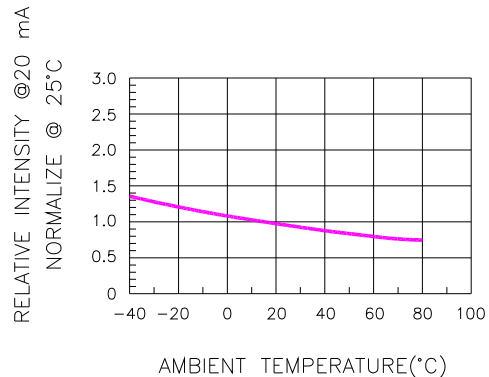


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

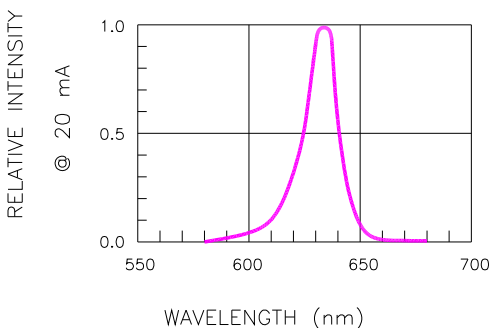


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

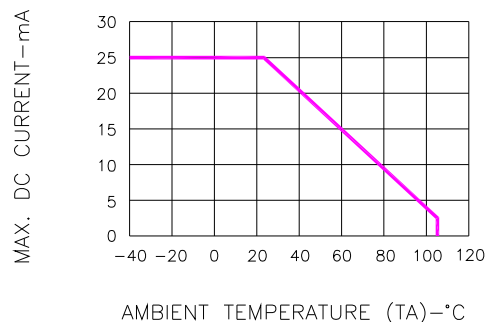


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE



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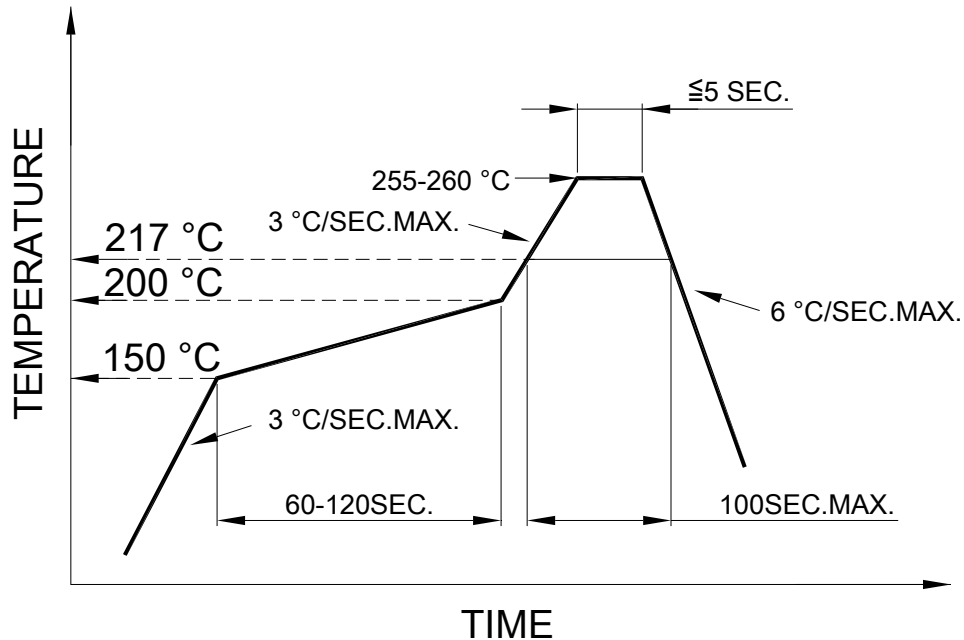
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● SMT REFLOW SOLDERING INSTRUCTIONS

SMT Soldering Profile

Pb free reflow soldering Profile



● SOLDERING IRON

Basic spec is ≤ 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.

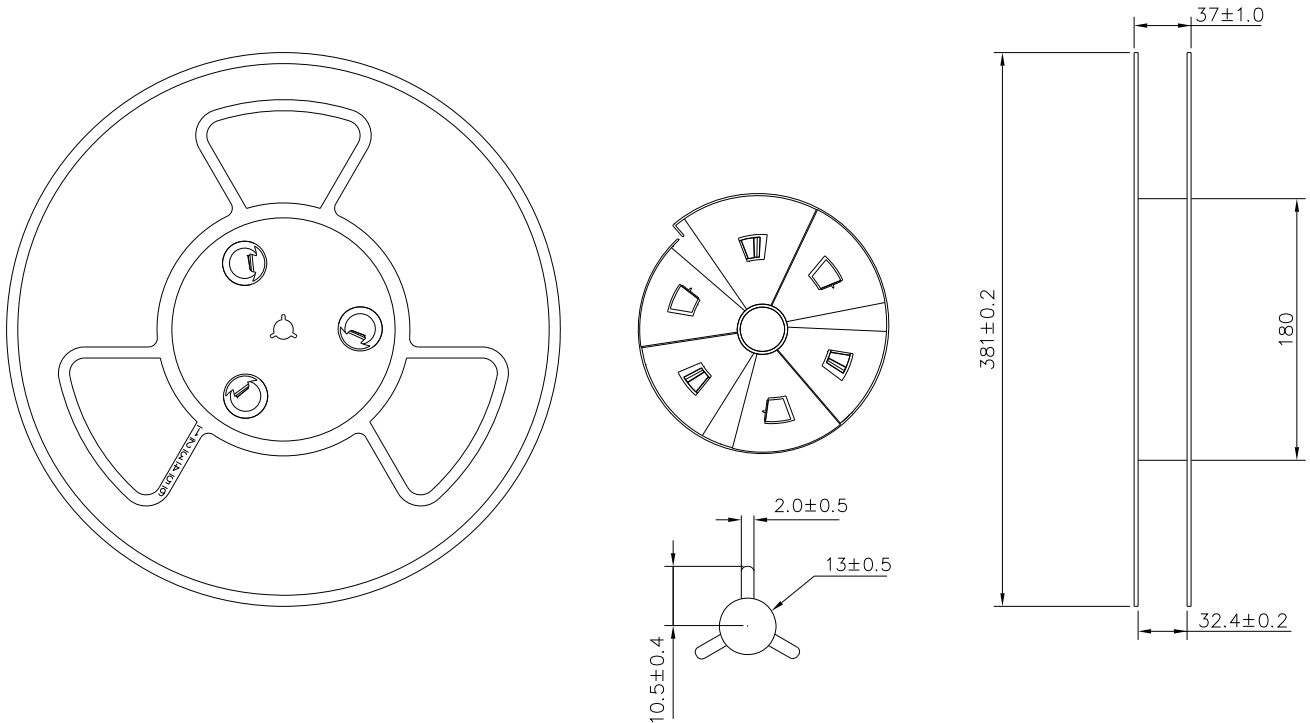


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● REEL DIMENSIONS



● PACKING & LABEL SPECIFICATIONS

