



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

● **EDIT HISTORY**

Version A: Apr. 23, 2009

New color data sheet.



American Opto Plus LED Corp.

0.40" SMD Type LED Display

SMC/A-402SR G/W

● 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-402SR G/W is a 0.40 inch (10.16 mm) height dual digits display.

This device utilizes Super Bright Red LED chip which are made from AlGaAs on a transparent GaAs,SH substrate. The display has Gray face, White segment.

● DEVICE

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

RoHS Compliance



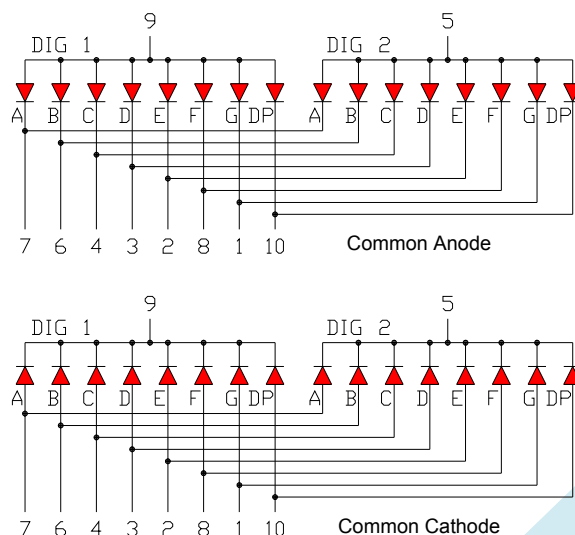
Pb free.





● TYPICAL INTERNAL EQUIVALENT CIRCUIT

Figure 1 illustrates the dimensions and pin connections of the 7-segment display. The left side shows the physical dimensions: the total height is 21.4mm, the top segment height is 6.4mm, the bottom segment height is 8.6mm, the segment width is 3.5mm (4 segments = 14mm), and the segment spacing is 1.5mm. The right side shows the pin connections for DIG 1 and DIG 2, with segments labeled A through F and DP (decimal point).





American Opto Plus LED Corp.

0.40" SMD Type LED Display

SMC/A-402SR G/W

● SR: SUPER BRIGHT RED (AlGaAs/GaAs, SH)

ABSOLUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Super Bright Red	Unit
Power dissipation per dice	P_{AD}	75	mW
Derating Liner from 25°C per dice	-	0.42	mA/°C
Continuous forward current per dice	I_{AF}	30	mA
Peak current per dice (duty cycle 1/10, 1kHz)	I_{PF}	200	mA
Reverse voltage per dice	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	V_F	$I_F = 20\text{mA}$	-	1.8	2.0	V
Reverse Current	I_R	$V_R = 5\text{V}$	-	-	10	μA
Peak Wavelength	λ_P	$I_F = 20\text{mA}$	-	655	-	nm
Dominant Wavelength	λ_d	$I_F = 20\text{mA}$	-	644	-	nm
Average Luminous Intensity	I_V	$I_F = 20\text{mA}$	-	20	-	mcd
Spectrum Radiation Bandwidth	$\Delta\lambda$	$I_F = 20\text{mA}$	-	20	-	nm



American Opto Plus LED Corp.

0.40" SMD Type LED Display

SMC/A-402SR G/W

● SR: SUPER BRIGHT RED (AlGaAs/GaAs, SH)

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

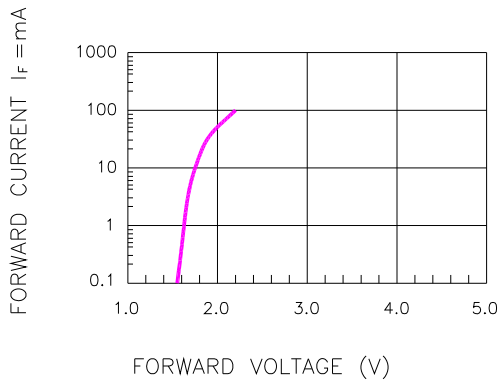


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

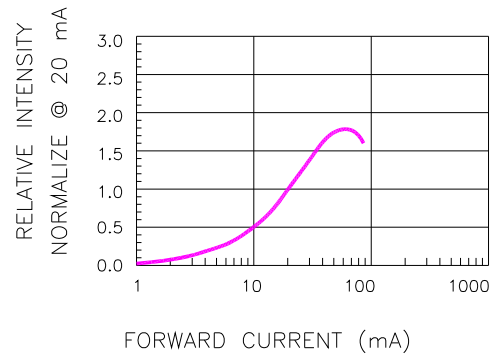


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

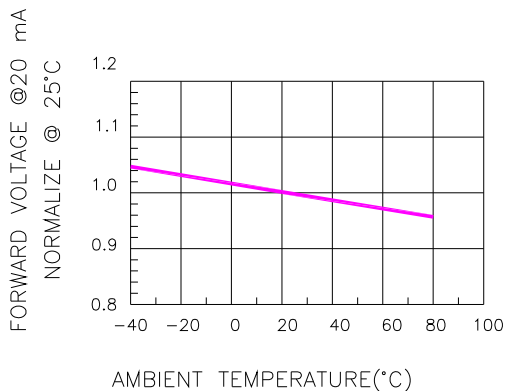


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

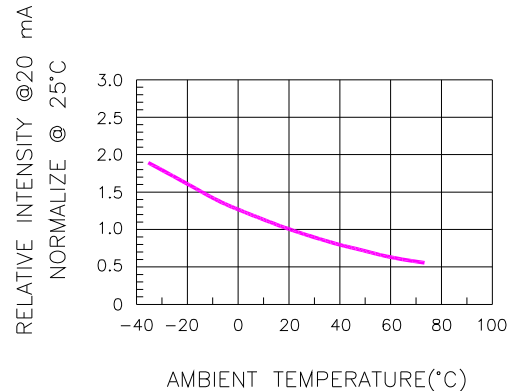


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

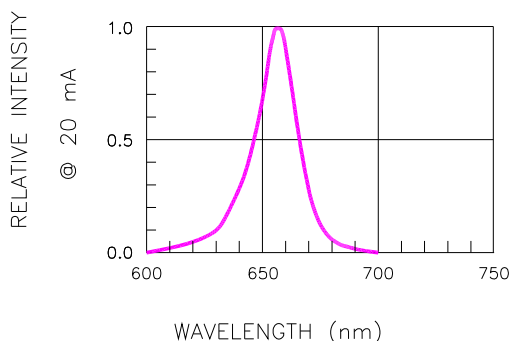


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

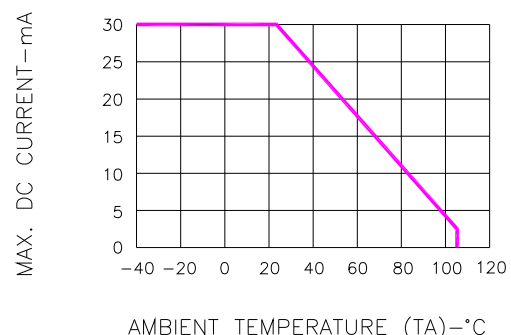


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE



American Opto Plus LED Corp.

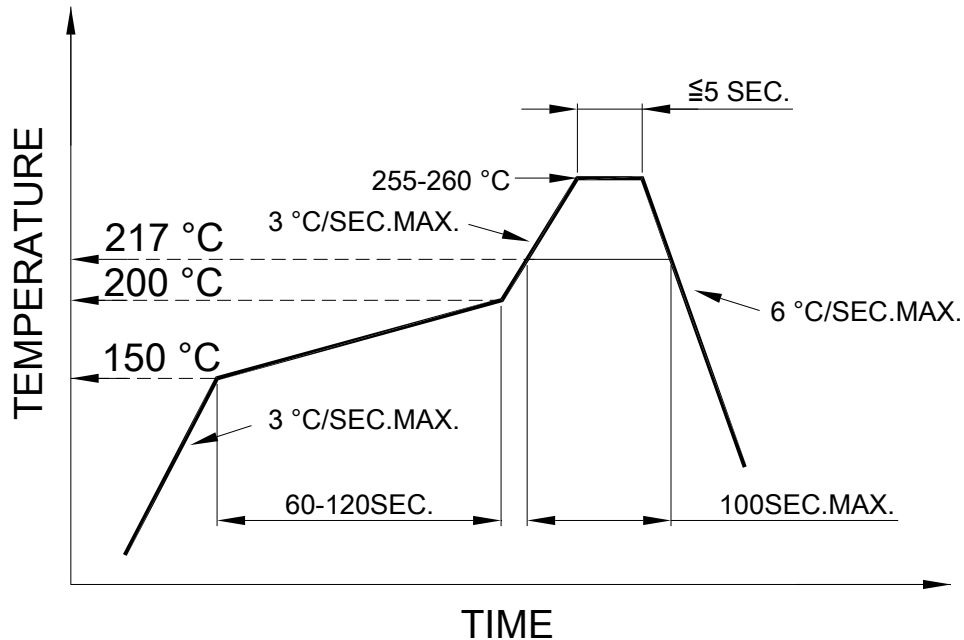
0.40" SMD Type LED Display

SMC/A-402SR G/W

● 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 $\rightarrow$ 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.

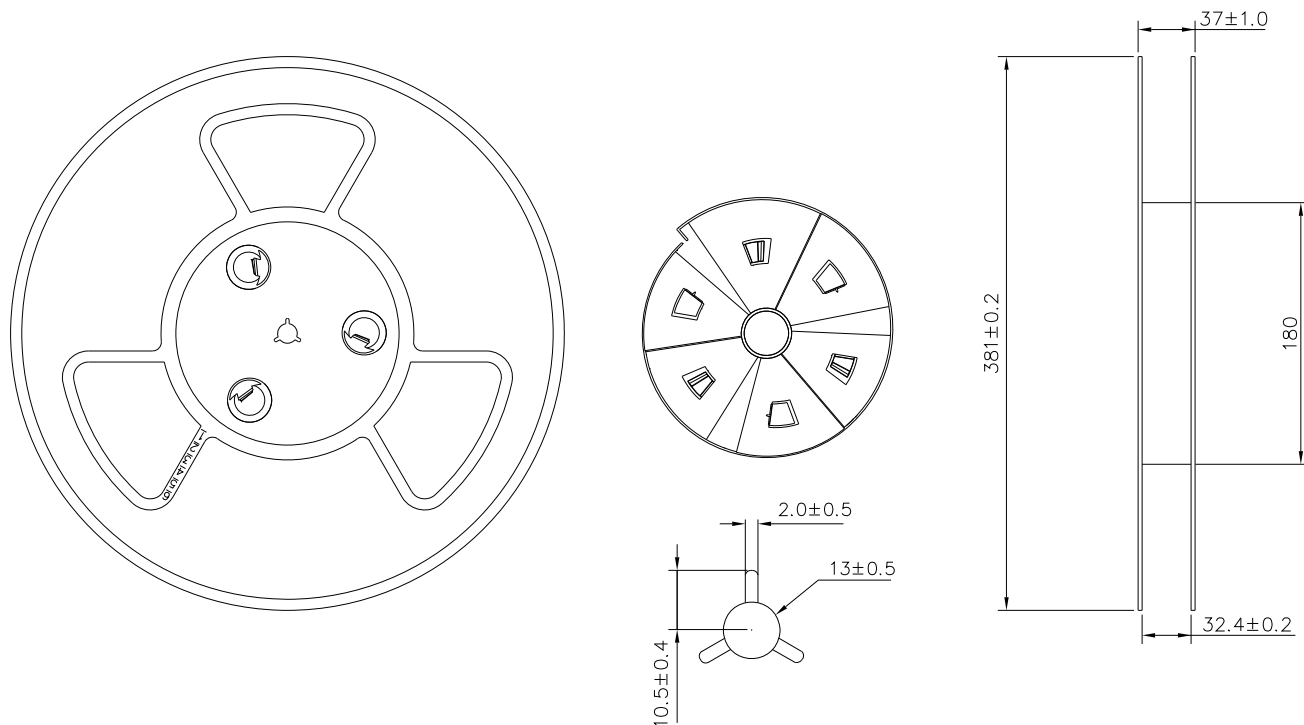


American Opto Plus LED Corp.

0.40"SMD Type LED Display

SMC/A-402SR G/W

● REEL DIMENSIONS



● PACKING & LABEL SPECIFICATIONS

