



American Opto Plus LED Corp.
0.2" SMD Type LED Display
SMA201YG G/W
SMC201YG G/W

● **EDIT HISTORY**

Version A: Nov. 12, 2012

New color data sheet.



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SMC201YG G/W

● **FEATURES**

- 0.2 inch (5.08 mm) Digit Height.
- Low current operation.
- SMD type.
- Gray face, White segment.
- RoHS compliant, Pb Free.

● **DESCRIPTION**

The SMA201YG G/W and SMC201YG G/W are 0.2 inch (5.08 mm) height Single digits display.

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

The display has Gray face, White segment.

● **DEVICE**

| PART NO | DESCRIPTION |
|--------------|----------------|
| SMA201YG G/W | Common Anode |
| SMC201YG G/W | Common Cathode |

RoHS Compliance



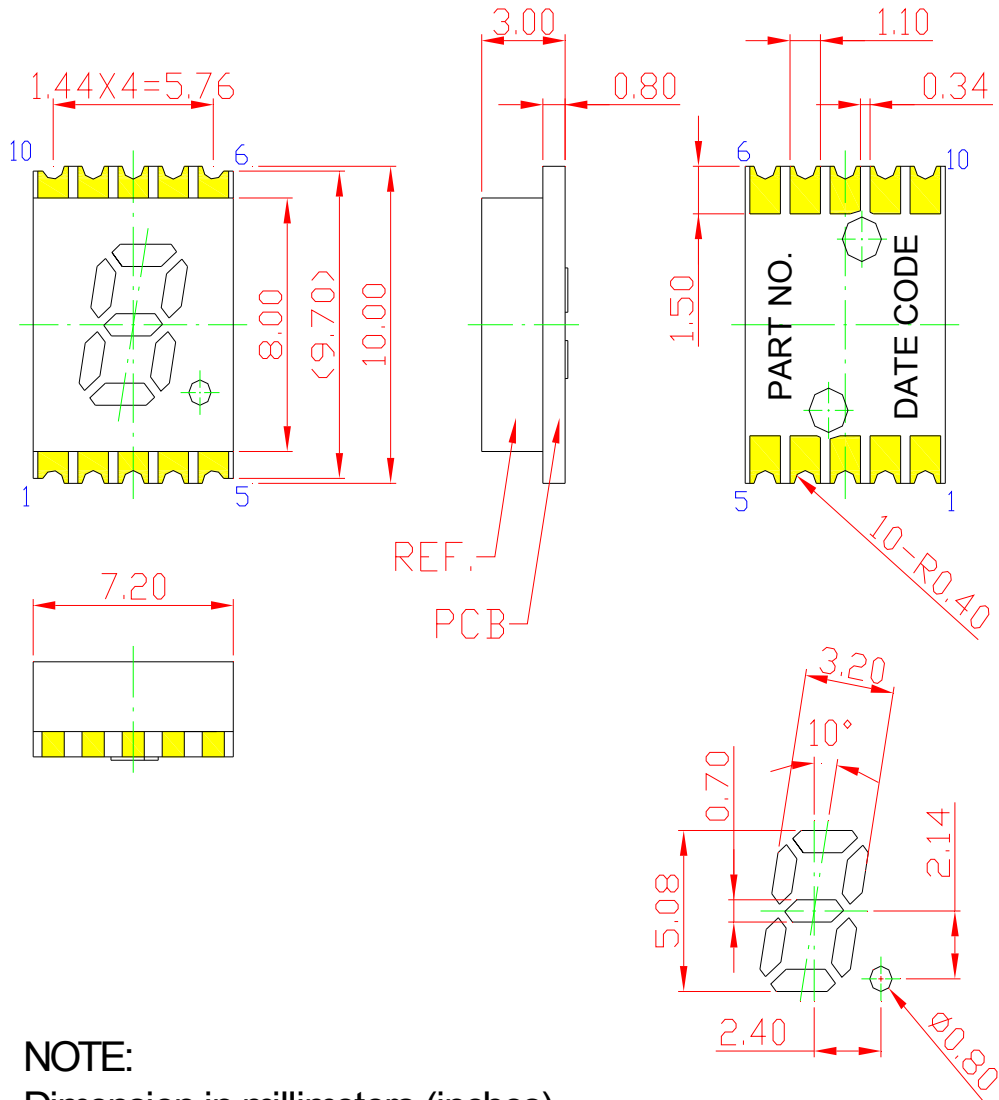
Pb free.





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● **MECHANICAL DIMENSIONS**



NOTE:

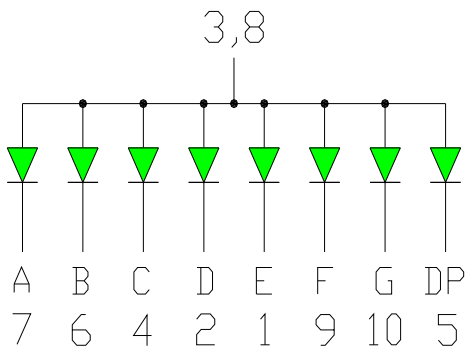
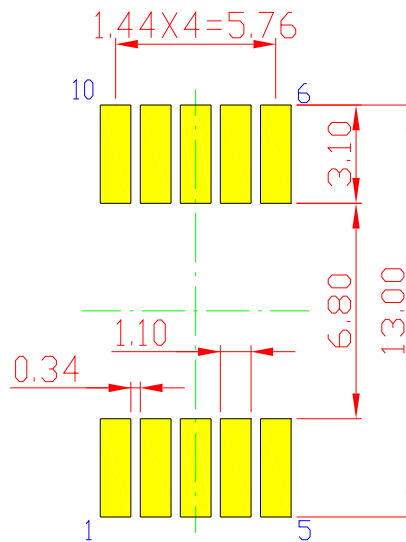
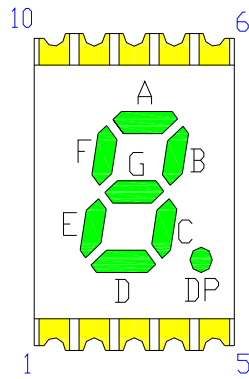
Dimension in millimeters (inches),
and tolerances are $\pm 0.25\text{mm}$ (.01") specified.



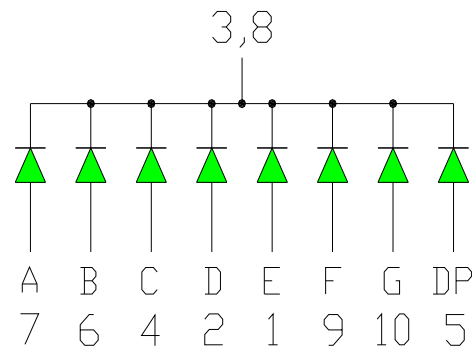
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● **TYPICAL INTERNAL EQUIVALENT CIRCUIT**

Recommended
Soldering Pattern



SMA201YG G/W
(Common Anode)



SMC201YG G/W
(Common Cathode)



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● **YG: SUPER BRIGHT YELLOW GREEN (AlGaInP/GaAs)**

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

| Parameter | Symbol | Maximum Rating | Unit |
|--|-----------|----------------|--------------------------------|
| Power dissipation | P_{AD} | 70 | mW |
| Derating liner from 25°C | - | 0.28 | $\text{mA} / ^{\circ}\text{C}$ |
| 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 | $^{\circ}\text{C}$ |
| 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, (Per Dice) | V_F | $I_F = 20\text{mA}$ | - | 2.1 | 2.6 | V |
| Reverse Current, (Per Dice) | I_R | $V_R = 5\text{V}$ | - | - | 10 | μA |
| Peak Wavelength | λ_P | $I_F = 20\text{mA}$ | - | 573 | - | nm |
| Dominant Wavelength | λ_D | $I_F = 20\text{mA}$ | - | 570 | - | nm |
| Luminous Intensity | I_V | $I_F = 20\text{mA}$ | - | 6 | - | mcd |
| Spectral radiation bandwidth | $\Delta\lambda$ | $I_F = 20\text{mA}$ | - | 20 | - | nm |



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● YG: SUPER BRIGHT YELLOW GREEN (AlGaInP/GaAs) CURVE

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

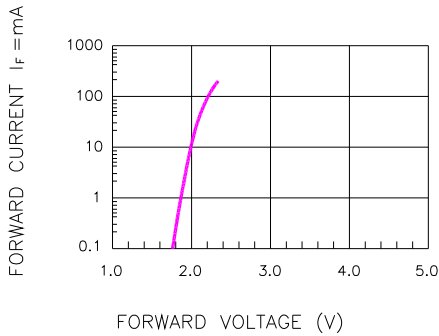


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

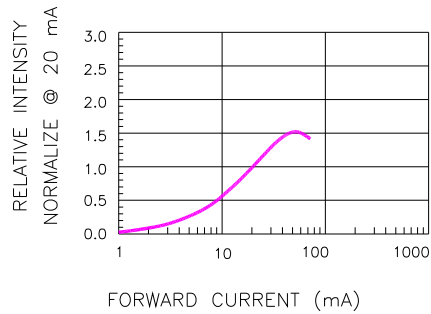


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

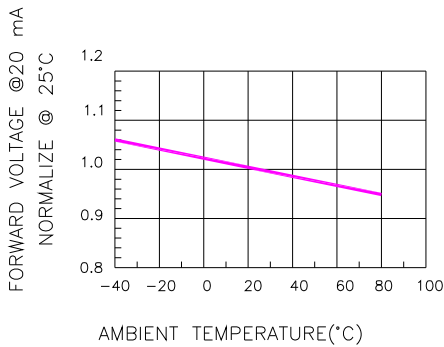


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

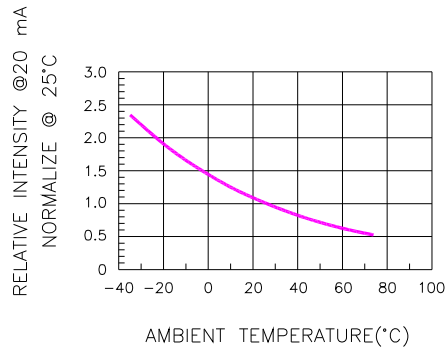


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

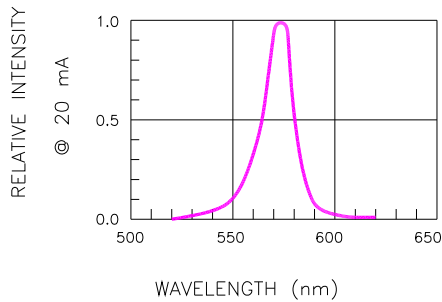


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

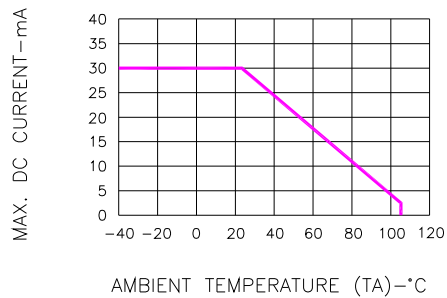


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

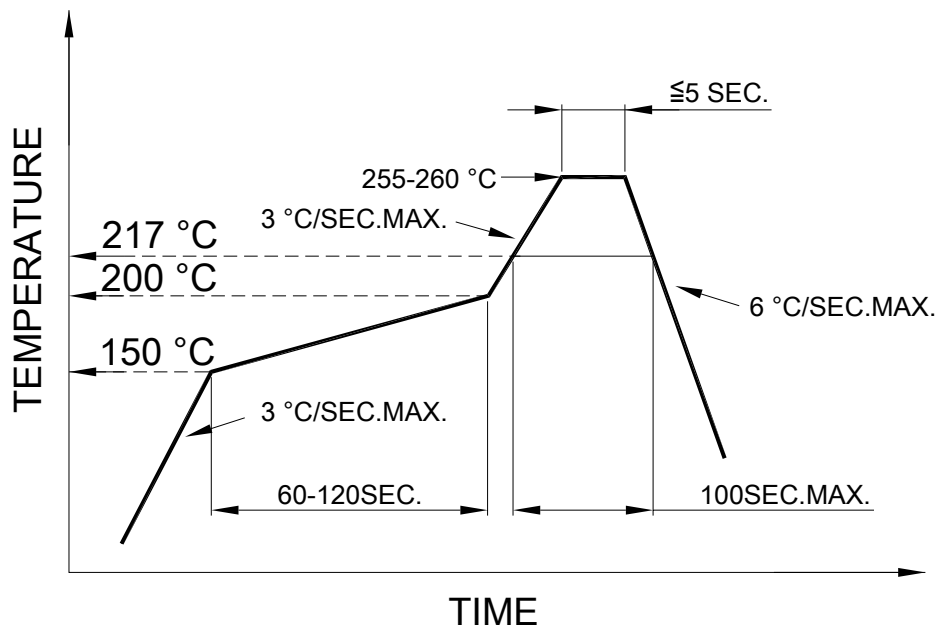


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● **SMT REFLOW SOLDERING INSTRUCTIONS**

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 3 sec. under 350°C.
- The head of soldering iron cannot touch copper foil.