

Opto Plus LED Corp.
0.56'' SMD Type LED Display
OPS-Q5610LE-GW
OPS-Q5611LE-GW

● **EDIT HISTORY**

Version A: Jun. 03, 2013

Preliminary spec.

Version B: Mar. 26, 2014

1. Add Bin and Hue data.
2. Add package spec.

Version C: Oct. 21, 2015

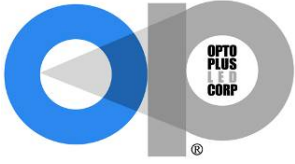
Correct Bin data & add packing spec.

Manufacture	Examination	Approving

Version: C Date: 10/21/2015

Opto Plus LED Corp. 7F-3, No.496, Bannan Road, Jhonghe Dist., New Taipei City 235, Taiwan (R.O.C)

Website: www.opled.com.tw E-mail: sales@opled.com.tw Tel: 886-2-2222-5698 Fax: 886-2-2222-2566



Opto Plus LED Corp.
0.56" SMD Type LED Display
OPS-Q5610LE-GW
OPS-Q5611LE-GW

● **FEATURES**

- 0.56 inch (14.20 mm) Digit Height.
- SMD type.
- Low current operation.
- Gray face, White segment.
- RoHS compliant, Pb Free.

● **DESCRIPTION**

The OPS-Q5610LE-GW & OPS-Q5611LE-GW are 0.56 inch (14.20mm) height Quadruple digit 7-segment displays.

This device utilizes Super Bright Red LED chip which are made from AlGaInP On a transparent GaAs, substrate.

The display has Gray face, White segment.

● **DEVICE**

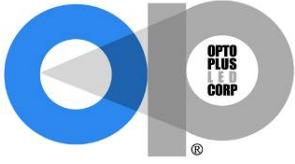
PART NO	DESCRIPTION
OPS-Q5610LE-GW	Common Anode
OPS-Q5611LE-GW	Common Cathode

RoHS Compliance



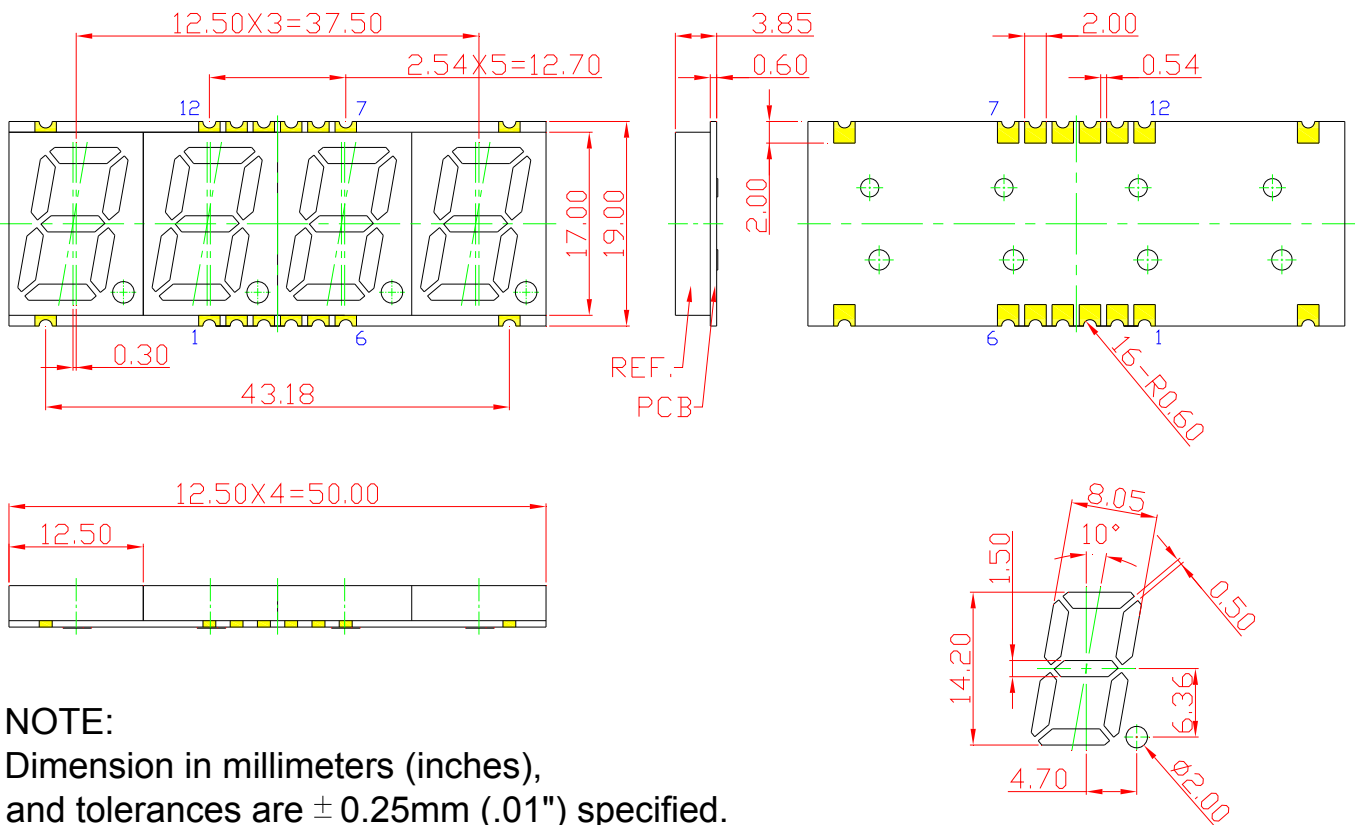
Pb free.



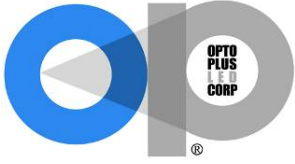


Opto Plus LED Corp.
0.56" SMD Type LED Display
OPS-Q5610LE-GW
OPS-Q5611LE-GW

● **MECHANICAL DIMENSIONS**



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



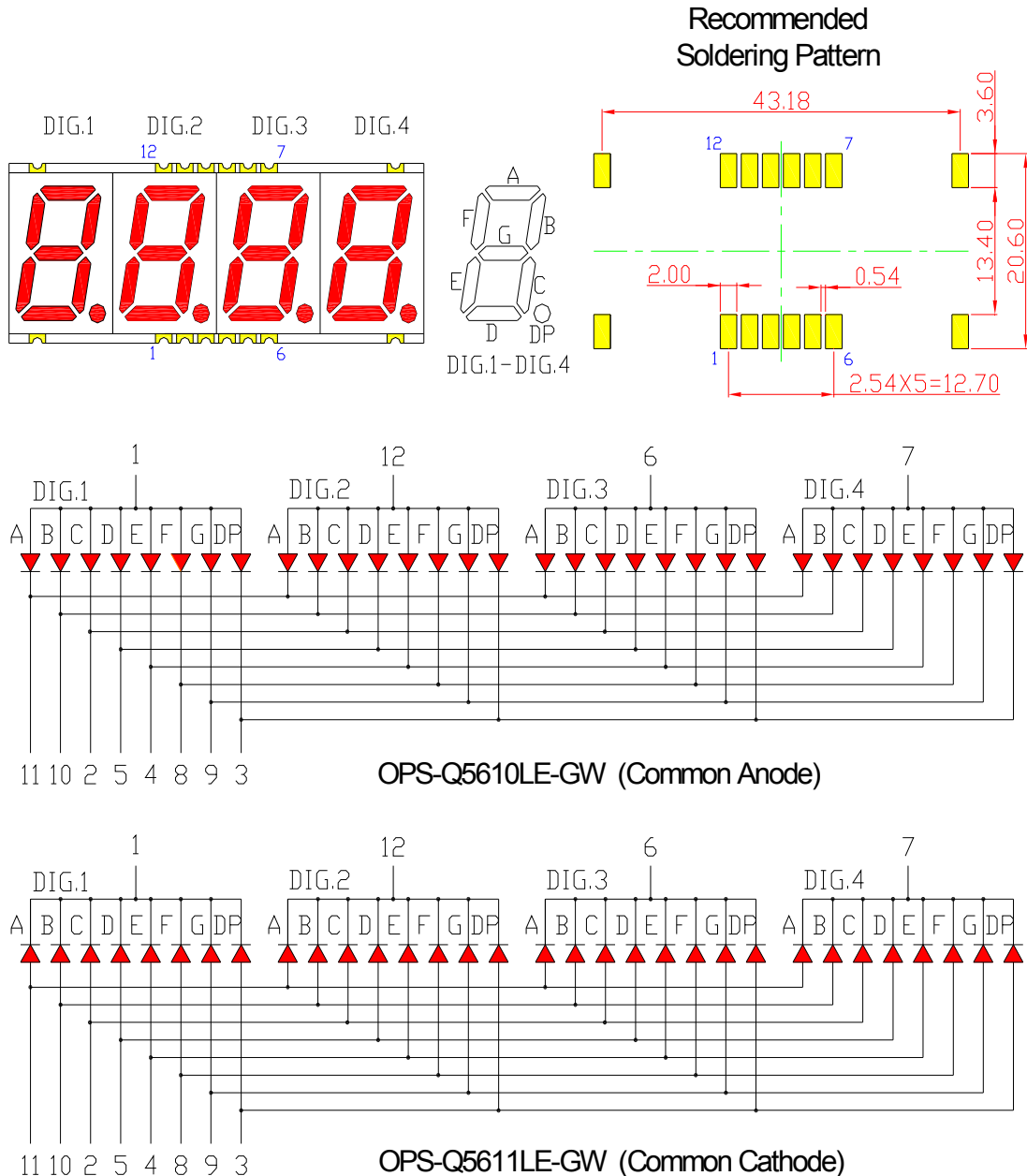
Opto Plus LED Corp.

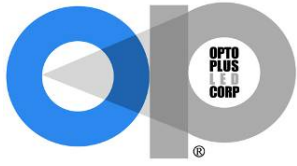
0.56" SMD Type LED Display

OPS-Q5610LE-GW

OPS-Q5611LE-GW

● TYPICAL INTERNAL EQUIVALENT CIRCUIT





Opto Plus LED Corp.
0.56'' SMD Type LED Display
OPS-Q5610LE-GW
OPS-Q5611LE-GW

● **LE: SUPER BRIGHT RED (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

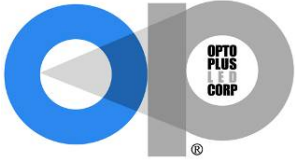
ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C

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	-	632	-	nm
Dominant Wavelength	λ _D	I _F =20mA	619	-	629	nm
Luminous Intensity	I _V	I _F =20mA	20	-	70	mcd
Spectral radiation bandwidth	Δλ	I _F =20mA	-	20	-	nm

Version: C Date: 10/21/2015

Opto Plus LED Corp. 7F-3, No.496, Bannan Road, Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C)

Website: www.opled.com.tw E-mail: sales@opled.com.tw Tel: 886-2-2222-5698 Fax: 886-2-2222-2566



Opto Plus LED Corp.
0.56'' SMD Type LED Display
OPS-Q5610LE-GW
OPS-Q5611LE-GW

- LE: BIN GRADE (Unit : mcd) Test Condition : 5V / 20mA

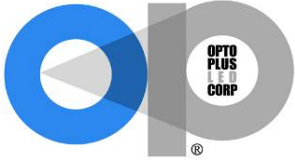
Super Bright Red	L	M	N
	20.1 - 35.0	35.1 - 50.0	50.1 - 70.0

- LE: HUE GRADE (λ_D : nm)

1	2	3
619 - 622	622.1 - 626	626.1 - 629

- AVAILABLE BIN / HUE TABLE

L1	M1	N1
L2	M2	N2
L3	M3	N3



Opto Plus LED Corp.

0.56" SMD Type LED Display

OPS-Q5610LE-GW

OPS-Q5611LE-GW

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

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

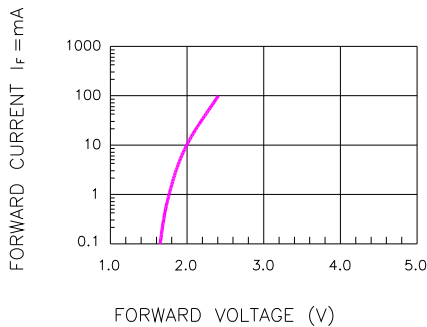


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

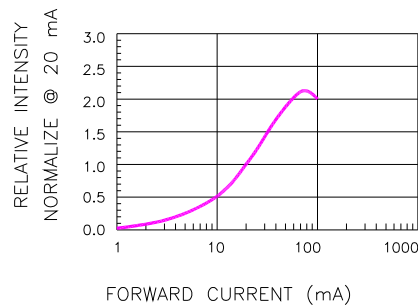


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

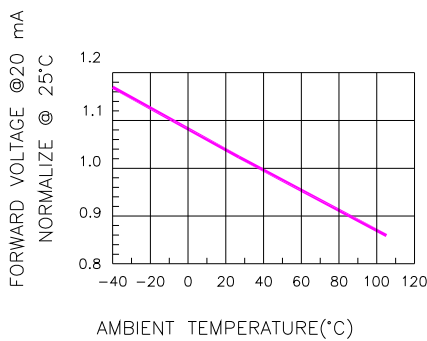


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

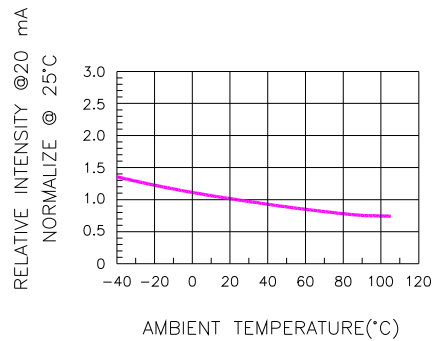


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

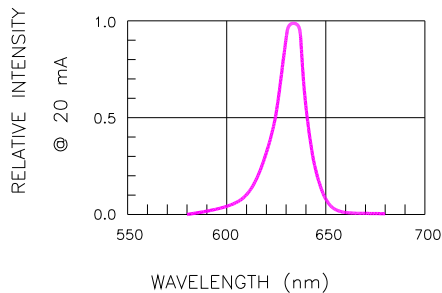


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

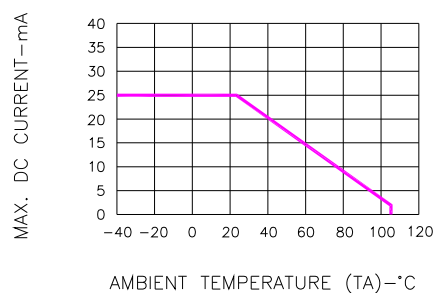
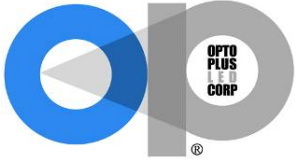


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

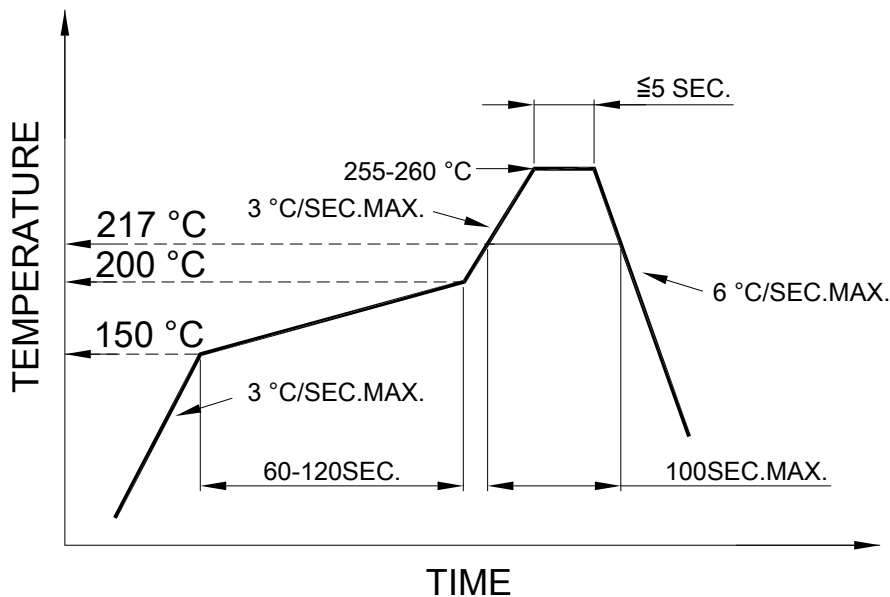


Opto Plus LED Corp.
0.56'' SMD Type LED Display
OPS-Q5610LE-GW
OPS-Q5611LE-GW

● **RECOMMEND SOLDERING PROFILE**

SMT Soldering Profile

Pb free reflow soldering Profile



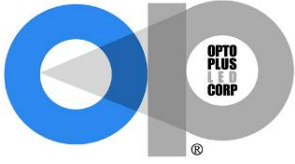
- We recommend the reflow temperature 245°C (+/- 5°C).
The maximum soldering temperature should be limited to 260°C.
- Number of reflow process shall be 2 times or less.

● **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.



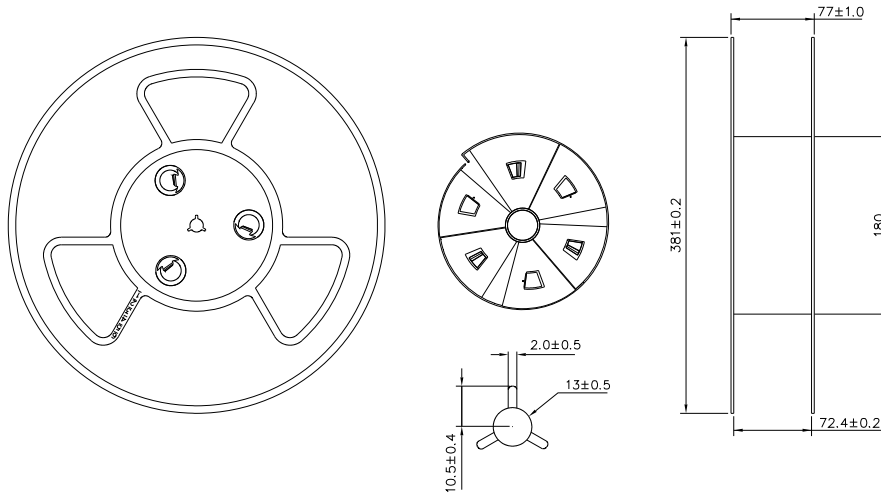
Opto Plus LED Corp.

0.56" SMD Type LED Display

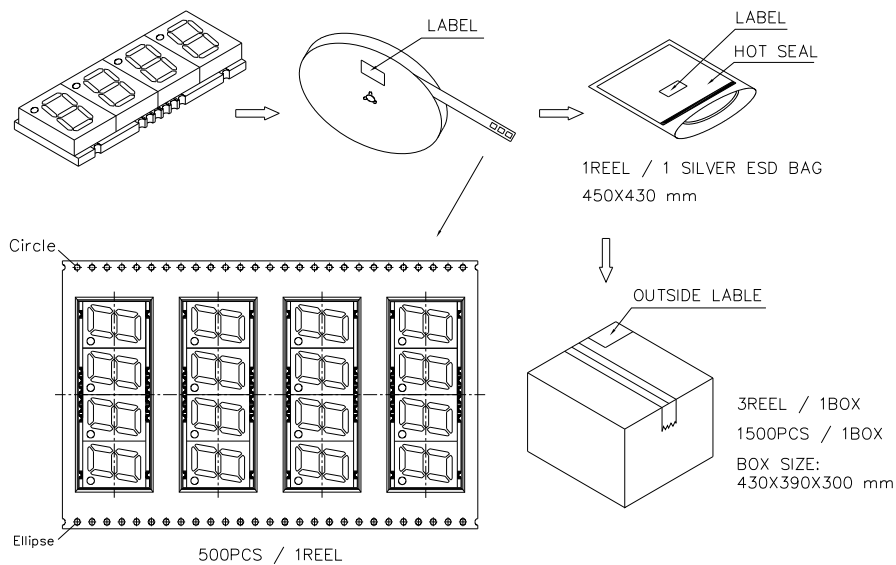
OPS-Q5610LE-GW

OPS-Q5611LE-GW

● REEL DIMENSIONS



● PACKING & LABEL SPECIFICATIONS



● STORAGE CONDITION

In factory original sealed bag package

TEMPERATURE CONDITION	HUMIDITY CONDITION
5°C ~ 30°C	Below 60%RH

After opened and not in factory original sealed bag package

TEMPERATURE CONDITION	HUMIDITY CONDITION	STORAGE TIME
5°C ~ 30°C	Below 60%RH	Within 4 weeks (MSL as level 2a)