

**SPECIFICATION FOR YOLDAL CHIP LED**

**PART. NO: UBSM0603WG**

**YOLDAL**

■ **Features:**

- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Uniform Golden White color.

■ **Descriptions:**

- Much smaller than lead frame type components, enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
- Lightweight for miniature applications.

■ **Applications:**

- **Model Railroad and Auto Headlights**
- Backlighting
- Indicators
- Switch and symbol
- General use

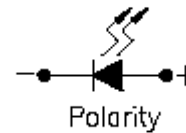
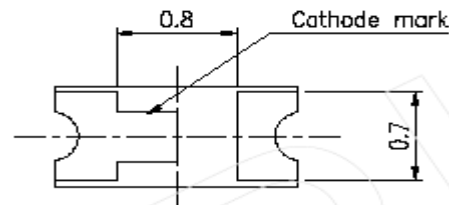
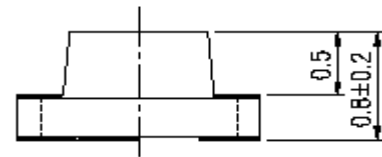
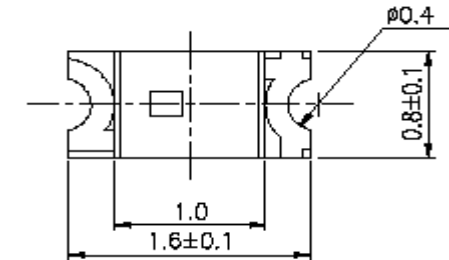
■ **Benefits:**

- Low Energy Consumptions
- Low Maintenance Costs
- High Application Design Flexibility
- High Reliability
- Very Competitive prices

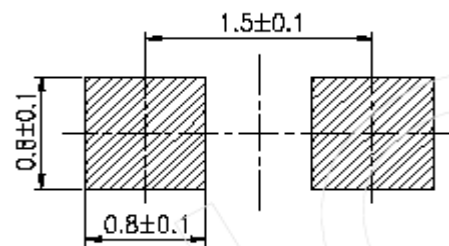
■ **Device material descriptions:**

Part ID	Chip		Lens Color
	UBSM0603WG	Material	Emitted Color
GaN		Golden White	Diffused

■ **Package Outline Dimensions:**



For reflow soldering (propose)



Notes: Tolerances Unless Dimensions, 0.1mm, Angles ± 0.5°, Unit: mm

■ **Absolute maximum ratings:**

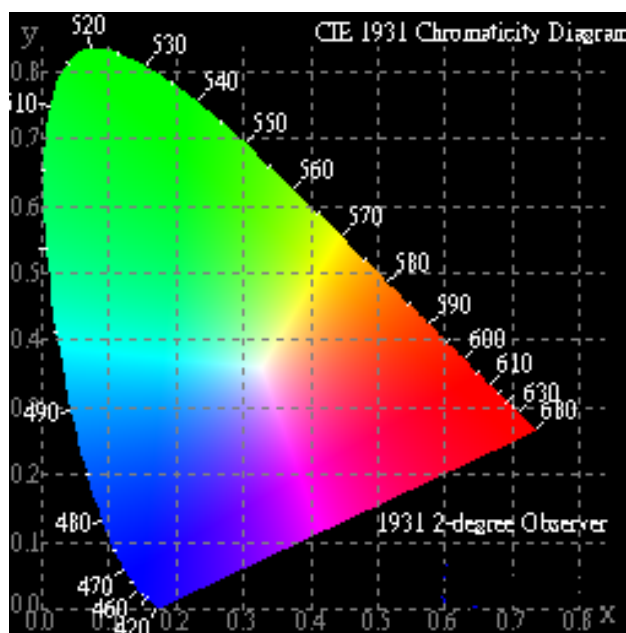
Parameter	Symbol	Rating	Unit
Reverse Voltage	$V_R$	5	V
Forward Current	$I_F$	20	mA
Operating temperature	$T_{opr}$	-25 ~ +80	°C
Storage Temperature	$T_{stg}$	-30 ~ +85	°C
Soldering temperature	$T_{sol}$	260 (for 5 Second)	°C
Power Dissipation	$P_d$	80	mW
Electrostatic Discharge*	ESD	150	V
Peak Forward Current (Duty 1/10 @1KHz)	$I_{PF}$	100	mA

\*Static Electricity Sensitive, care must be fully taken when handling this product.

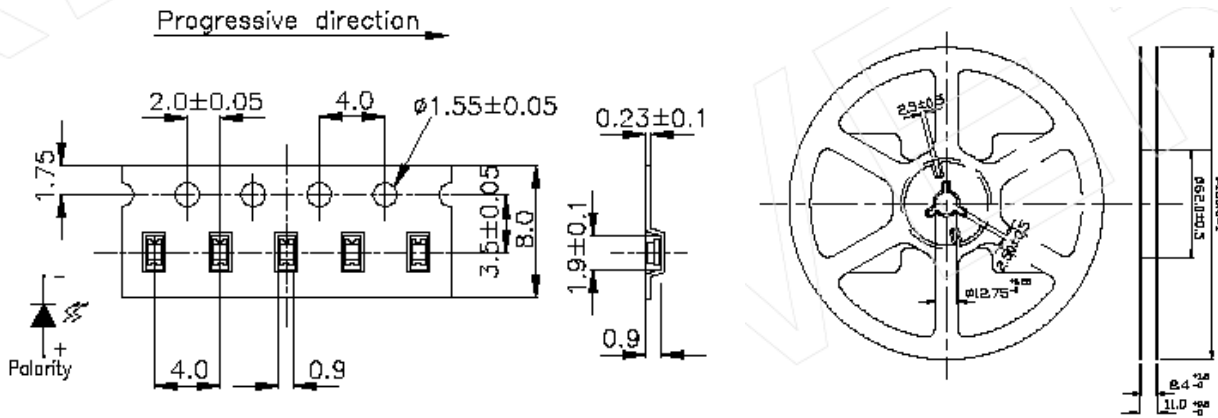
■ **Electro-Optical characteristics:**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	$I_V$	-----	300	-----	mcd	$I_F=20$ mA
Viewing angle	$2\theta$ 1/2	-----	120	-----	Deg.	$I_F=20$ mA
Forward Voltage	$V_F$	-----	3.2	3.5	V	$I_F=20$ mA
Reverse Current	$I_R$	-----	-----	50	uA	$V_R=5V$
Chromaticity*	X	-----	0.460	-----	-----	$I_F=20$ mA
Coordinate	Y	-----	0.420	-----	-----	

\*C.I.E. 1931 Chromaticity Diagram.



■ **Taping Dimensions: 4000 pieces per reel.**



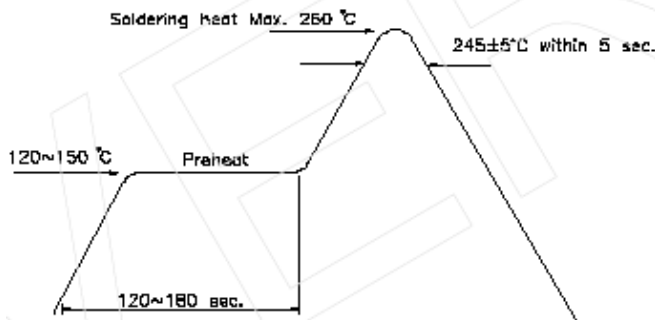
■ **Reliability Test and Condition:**

Item	Test Condition	Test Hour/Cycle	Sampling pcs.	Failure Judgment	Ac/Rc
Reflow	Temp.: 240 °C±5°C Min. 5 Second	6 min.	30	I <sub>R</sub> ≥ U x 1.0 I <sub>V</sub> ≥ L x 0.5 V <sub>F</sub> ≥ U x 1.2  U: Upper specification limited  L: Lower specification limited	0/1
Temperature Cycle	H: +85 °C, 30 min. ∫ 5 min. L: -55 °C, 30 Min.	50 cycles	30		0/1
Thermal Shock	H: +100 °C, 5 min. ∫ 10 Sec. L: -10 °C, 5 Min.	50 cycles	30		0/1
High Temperature Storage	+100 °C	1000 hrs.	30		0/1
Low Temperature Storage	-55 °C	1000 hrs.	30		0/1
DC Operating Life	I <sub>F</sub> =20mA	1000 hrs.	30		0/1
High Temperature/Humidity	+85 °C / R.H. 85%	1000 hrs.	30		0/1

■ **Precautions For Use**

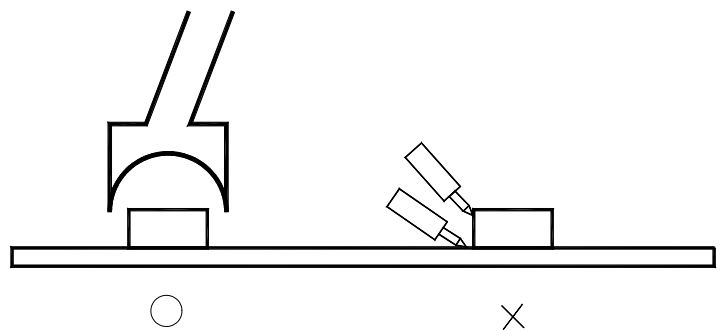
1. Over Current Proof  
Resistors must properly applied for protection, slightly voltage shift will cause big current change, BURN OUT will happen.
2. Storage Time
  - 2.1. The operating temperature and RH: 5 °C ~ 35 °C, RH60%.
  - 2.2. Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp proof box with desiccating agent. Taping life considering, strongly suggest using this products within one year from date of production.
  - 2.3. Package opened more than one week in an normal atmosphere environment, before soldering, they should be treated at 60 °C ± 5 °C for 15 hrs.
  - 2.4. When the desiccant agent changed to pink, the device should be treated as condition 2.3.

■ **Soldering Heat Reliability**

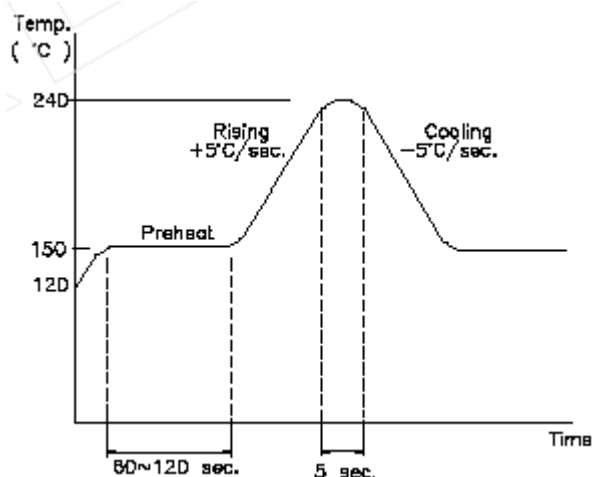


■ **Rework**

1. Rework must be finished within 5 sec. under 245 °C.
2. The head of Iron must not touch the copper foil.
3. Twin-head type is preferred.



■ **Reflow Temp. / Time**



■ **Soldering Iron**

Basic spec is  $\leq 5$  sec. / 260 °C. If temperature is higher, time should be shorted (+10 °C → -1 sec.). Power dissipation of Iron should be smaller than 15 W, and temperature should be controllable. Surface temperature of the device should be under than 230 °C.