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0.5W High Efficiency Power LED

MODEL NO：W018E

Applications：

Dice material	Emitted color	Lens Color
GaN	White	Water Clear

Electrical/Optical Characteristics(Ta=25℃)

Parameter	Symbol	Condition	Min	Typ.	Max	Unit
Luminous Flux	Φv	IF=60mA	15	25		mcd
Luminous Intensity	Iv	IF=60mA	4200	7000		mcd
Light conversion efficiency		IF=60mA		70		lm/W
Viewing Angle	2Θ1/2	IF=60mA		120		Deg
Forward Voltage	V_F	IF=60mA		6.6	8	V
Reverse Current	I_R	VR=4V			10	μA

Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Maximum	Unit
Power Dissipation	Pd	480	mW
Peak Forward Current(1/10 Duty Cycle 0.1ms Pulse Width)	IF(Peak)		mA
Continuous Forward Current	I_F	60	mA
Reverse Voltage	V_R	4	V
Derivation Linear From 25℃			mA/℃
Operating Temperature Range	Topr	-40 to +85	℃
Storage Temperature Range	Tstg	-40 to +100	℃

Luminous Flux Measurement allowance is ±15%

Luminous Intensity Measurement allowance is ±15%

Forward voltage Measurement allowance is ±0.05V

Emission wavelength Measurement allowance is ±1nm

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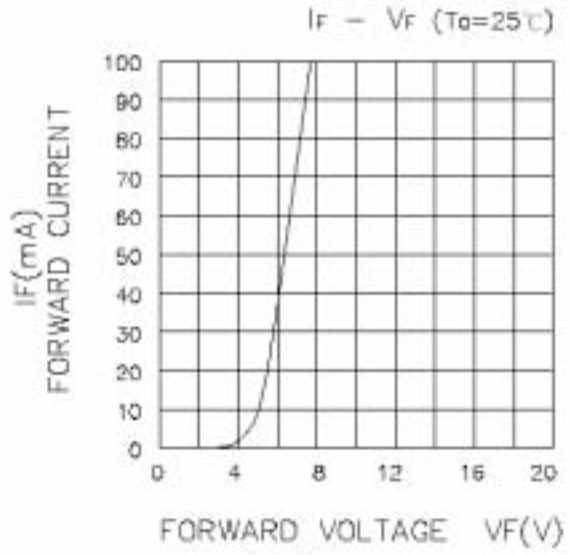
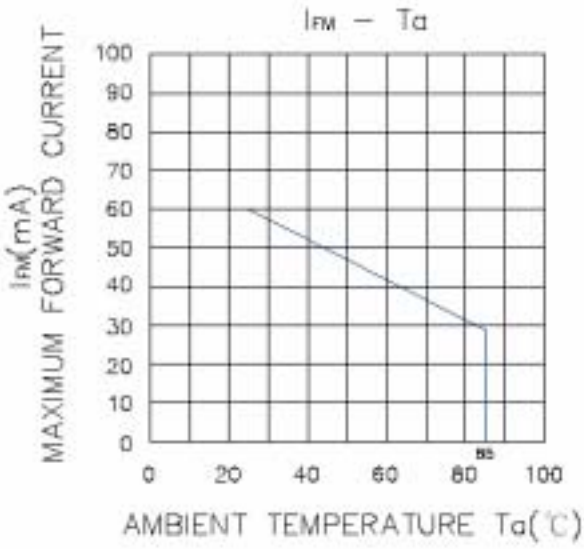
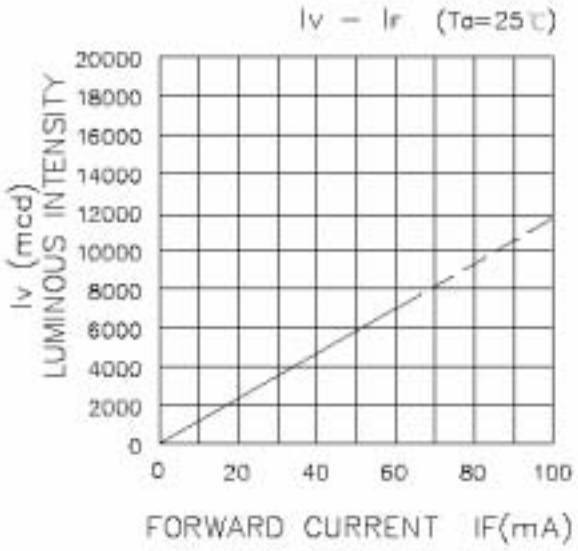
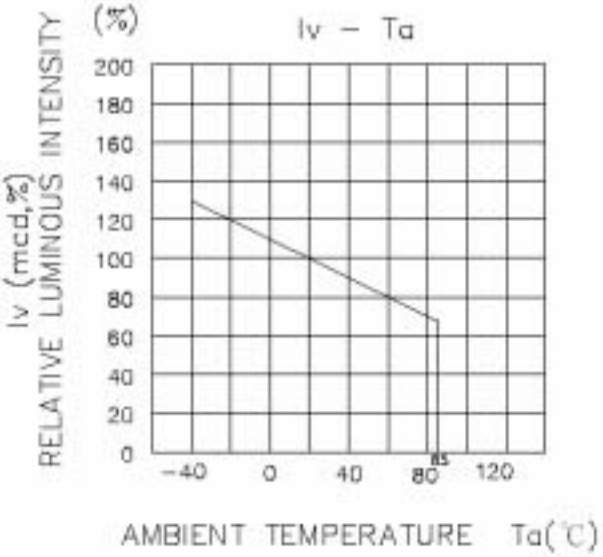
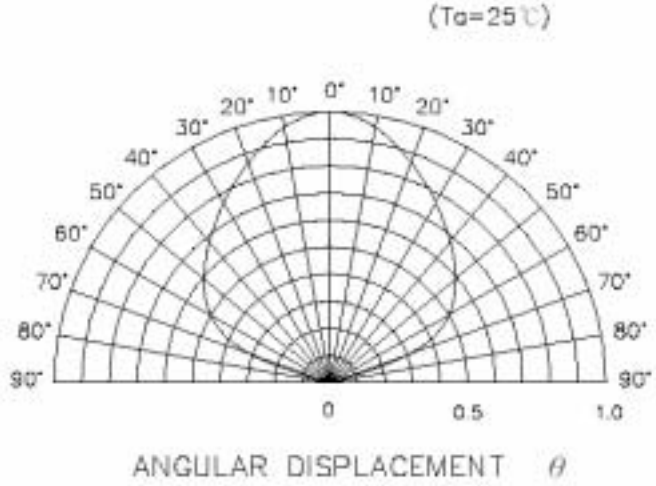
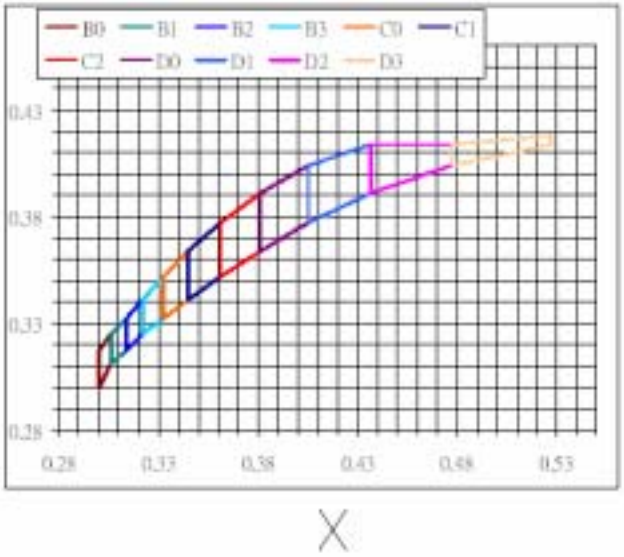




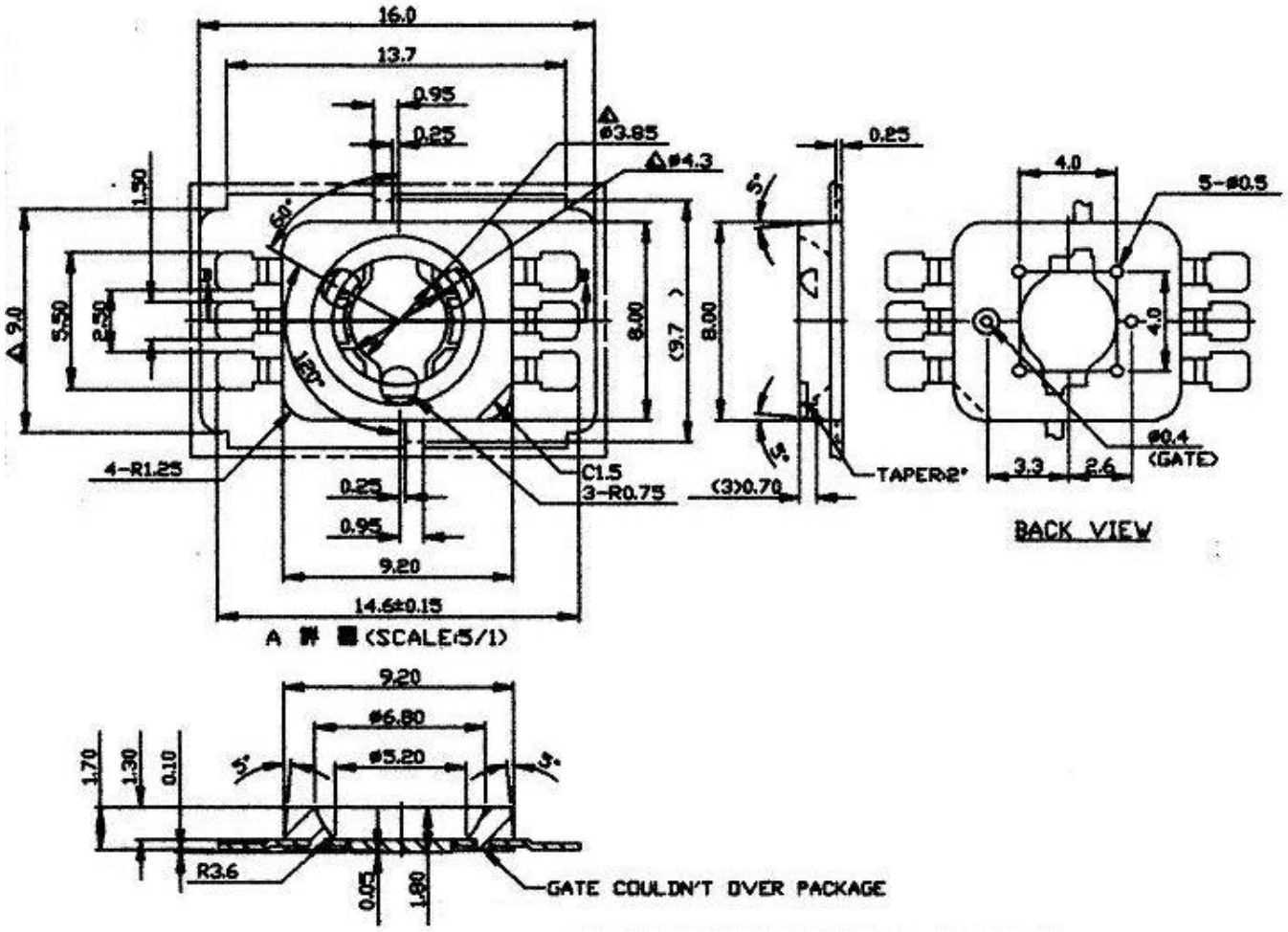


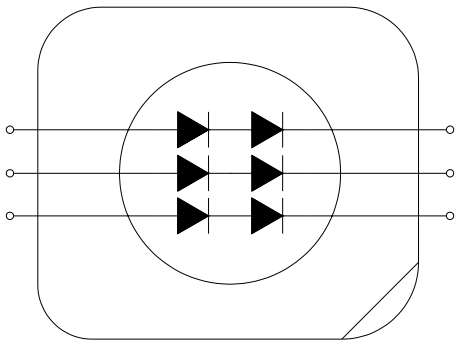






Package Dimensions



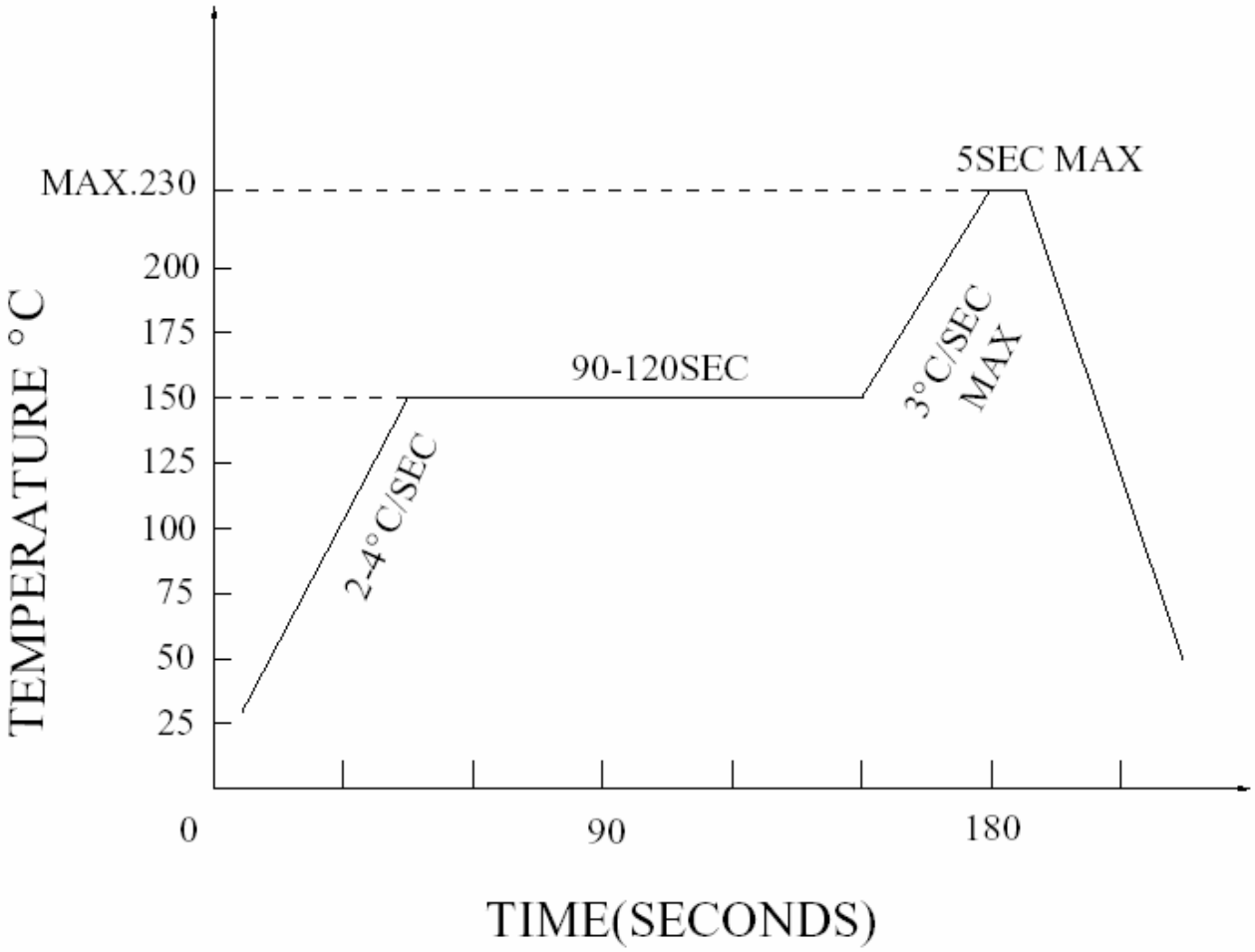


Surface Mounting Condition

In the automatic mounting of SMD LED to the PCB, any bending,expanding,and pulling forces against the SMD LED should be minimized to prevent the electrical failures or mechanical damaged.

Reflow Soldering and Temperature Profile

The SMD LED is designed for the reflow soldering process. Too high temperature or too large temperature gradient may cause the electrical and optical failures.



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Reliability Test Items

CONDITIONS :

The reliability of products shall be satisfied with items listed below.

NO.	Item	Condition	Time/Cycle	Number of Damaged
1	Soldering Heat Test	260℃	5 sec	0/60
2	Thermal Shock	0℃(5min) ~100℃(5min)	20 cycle	0/60
3	High Temp. Storage	100℃	1000 Hrs	0/60
4	Low Temp. Storage	-40℃	1000 Hrs	0/60
5	Operation Temperature Cycle Test	-40℃~80℃	100 Cycles , 200Hrs	0/60
6	High Temp. High Humidity Test	85℃, 85% RH	1000Hrs	0/60
7	DC Operation Life Test	IF=60mA	1000Hrs	0/60

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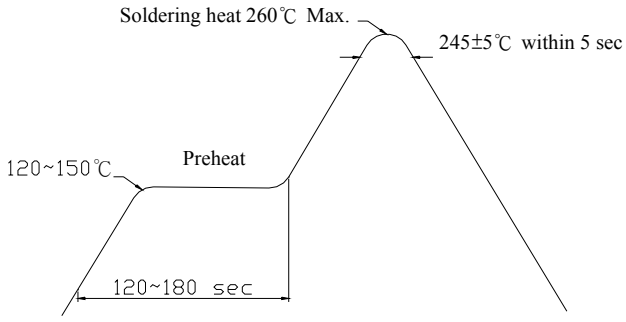
● Descriptions：

- The Chip-LED Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
- Besides, lightweight makes them ideal for miniature application, etc.

● Soldering heat reliability（DIP）：

Please refer to the following figure：



● Precautions For Use：

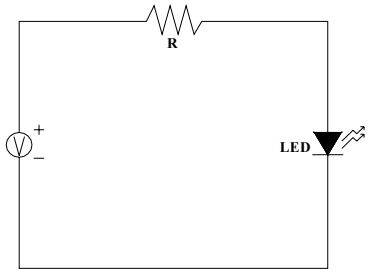
- Over－current－proof

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change （Burn out will happen）

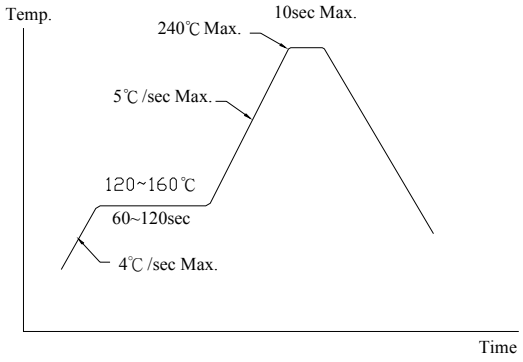
- Storage

1. The operation of temperature and R.H. are：5℃～30℃, 60％R.H. Max..
2. Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a dampproof box with desiccating regent. Considering the tape life, we suggest our customers to use our products within 1.5 year（from production date）.
3. It’s recommended to bake before soldering when the package is unsealed after 72 hrs. The condition is：60℃±5℃ for 15hrs.

● Test Circuit



● Reflow Temp. / Time：



● Reliability Test Items And Conditions

The reliability of products shall be satisfied with items listed below.

No.	Items	Test Condition	Test Hours/Cycles	Sample Size
1	Solder Heat	TEMP：260℃±5℃	5 sec	48 pcs
2	Temperature Cycle	90℃～25℃～-30℃ ～25℃ 30m 5m 30m 5m	300Cycles	48 pcs
3	Thermal Shock	100℃～-55℃ 10m 10m	100Cycles	48 pcs
4	Operation Life	If=20mA	1000 Hrs	48 pcs
5	High Temperature Storage	Temp:90℃	1000Hrs	48 pcs
6	Low Temperature Storage	Temp:-30℃	1000Hrs	48 pcs
7	High Temperature/High Humidity	80℃ / R.H80%	1000Hrs	48 pcs