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DATA SHEET

PART NO.: SZT2835WDT-0.5W

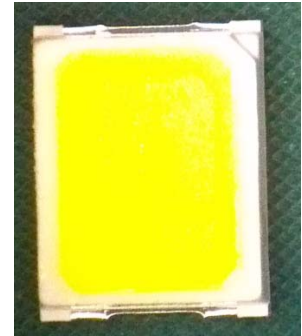
REV: A / 0

CUSTOMER'S APPROVAL : \_\_\_\_\_

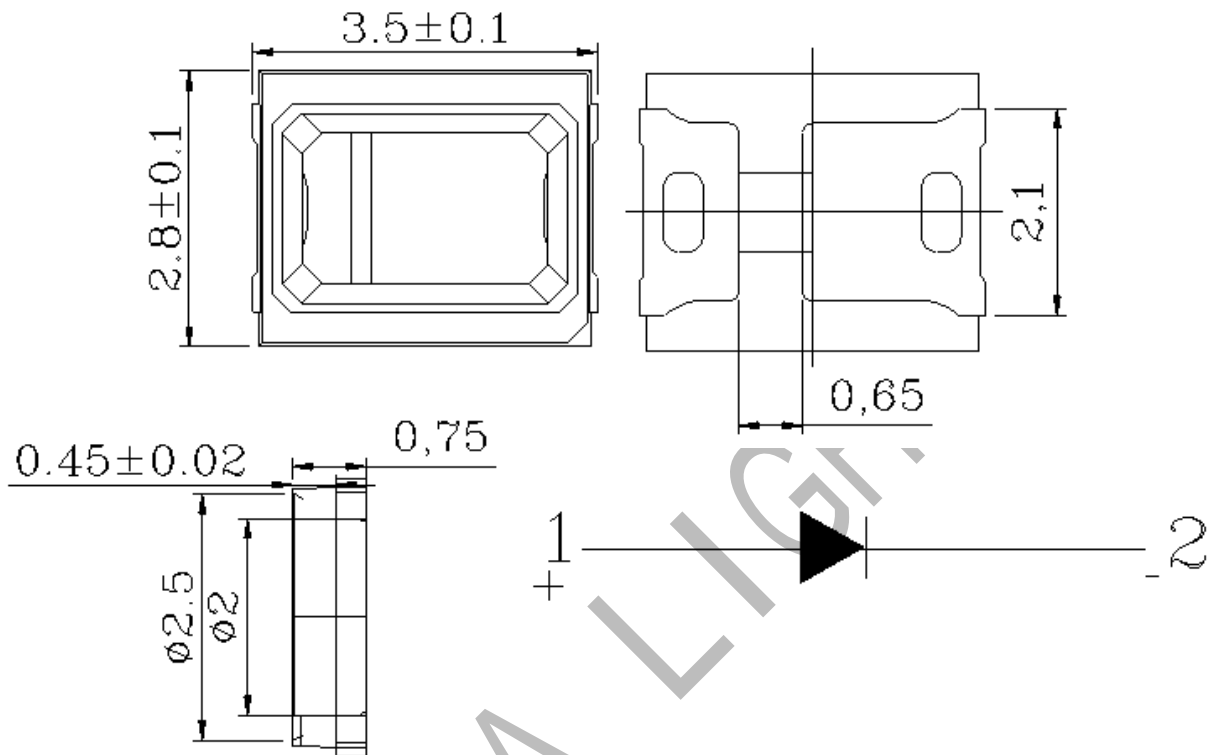
DCC : \_\_\_\_\_

**◆ Benefits :**

- Low power consumption
- Available in various colors.
- Long life span (up to 30000hours)
- soldering methods: IR reflow soldering and Hand soldering
- high brightness surface mount technology, for safe touch
- Emitting viewing angle 120°
- ROHS standard.

**◆ Applications:**

- Automotive
- Backlighting
- Decorative light
- Appliance light
- Sign and Channel Letter
- indicators · Consumer · industrial · electronics.

**Mechanical dimension****Notes:**

1. All dimensions are in millimeters.
2. Tolerance is  $\pm 0.1$  mm unless otherwise noted.
3. Specifications are subject to change without notice.



# SURFACE MOUNT DEVICE LED

Part No. : SZT2835WDT-0.5W REV: A /0

## Maximum Ratings(Ta=25°C)

Parameter	Symbol	Rating	Unit
Forward current	IF	150	mA
Reverse Voltage	VR	5	V
Power Dissipation	Pd	450	mW
Operating Temperature	Topr	-30~+80	°C
Storage Temperature	Tstg	-40~+100	°C
Welding temperature	Tsol	Reflow soldering : 260±5 °C for 5sec.	

\*1 Proper current derating must be followed to keep LED junction temperature (T<sub>j</sub>) below the maximum.

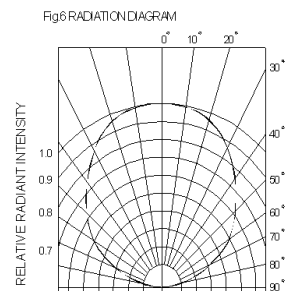
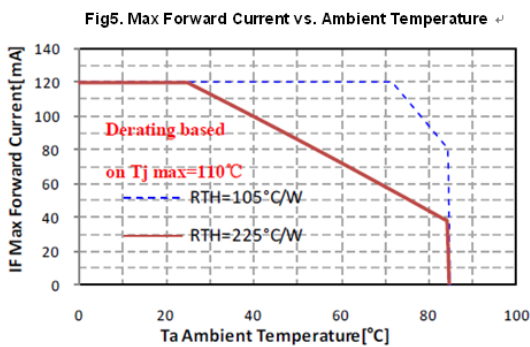
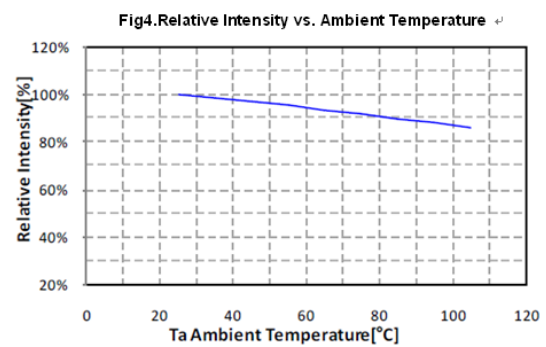
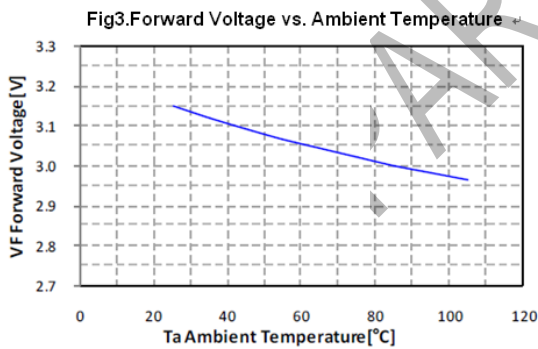
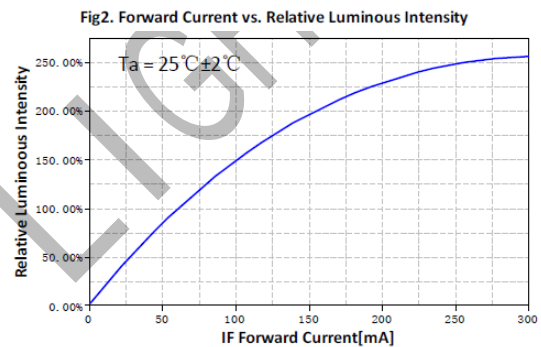
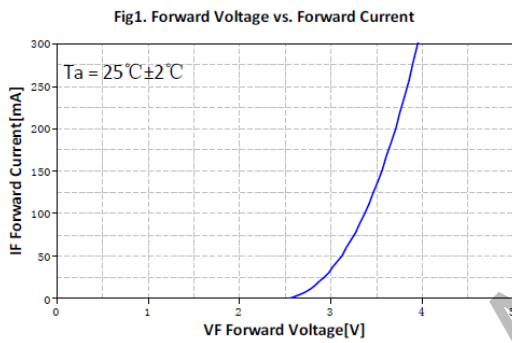
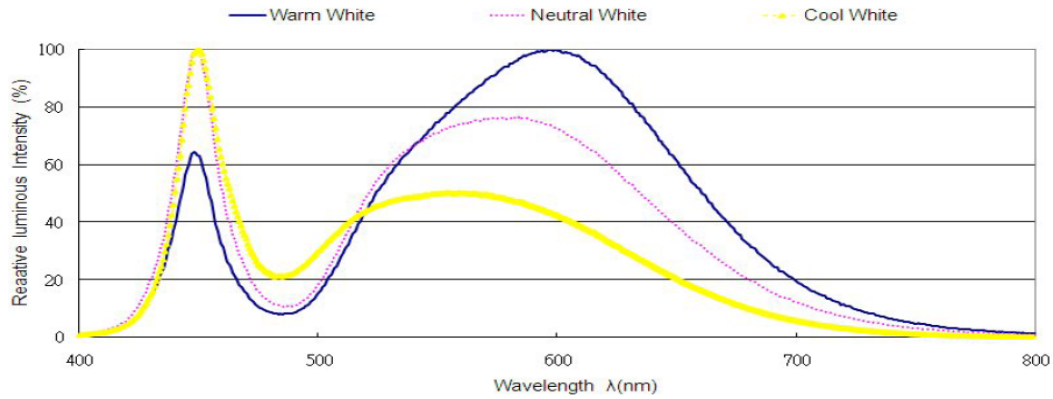
\*2 Condition for I<sub>FP</sub> is pulse of 1/10 duty and 3 msec width.

## Electrical - Optical Characteristics (Ta =25°C)

Product model	Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
LT2835WDT-0.5W -6080-HX	Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	0		10	μA
	Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =150mA		3.0		V
	Total Flux for white	CCT	I <sub>F</sub> =150mA	6000		6500	K
	Total Flux for white	Φ	I <sub>F</sub> =150mA	60		75	LM
	CIR	RA	I <sub>F</sub> =150mA	80			%
	Viewing Angle	2θ1/2				120	Deg

Typical Electro-Optical Curves :( at T<sub>Ambient</sub> Temperature=25°C)

### Spectrum Distribution





# SURFACE MOUNT DEVICE LED

Part No. : SZT2835WDT-0.5W REV: A / 0

## ◆ Bin Intensity Bin Limits (At 150mA)

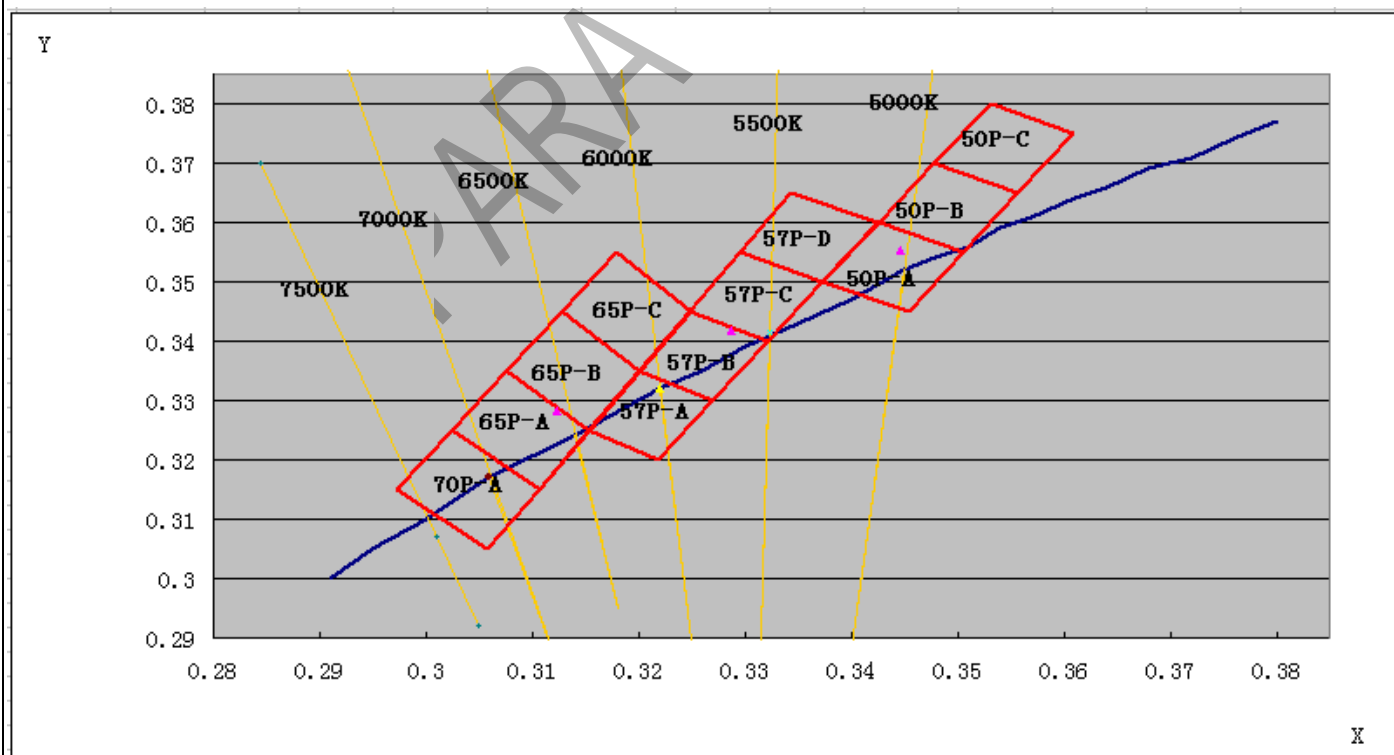
BIN CODE	Min(lm)	Max(lm)
ZC	60	65
ZD	65	70
ZE	70	75

## ◆ VF Bin Limits (At 150mA)

BIN CODE	Min(v)	Max(v)
F2	2.7	2.8
G1	2.8	2.9
G2	2.9	3.0
H1	3.0	3.1
H2	3.1	3.2

## ◆ Bin Color Bin Limits (At 150mA)

CIE-X/Y Natural white Binning Information

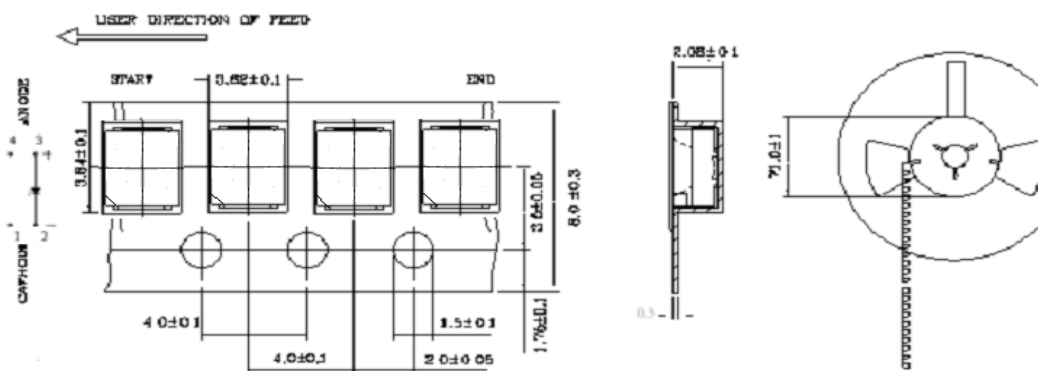


BIN	CCT(K)	Chromaticity Coordinates					
		x	y	z	u		
57P-A	5700K	x	0.327	0.32	0.3153	0.3219	
		y	0.33	0.335	0.325	0.32	
57P-B		x	0.3322	0.3248	0.32	0.327	
		y	0.34	0.345	0.335	0.33	
57P-C		x	0.3373	0.3295	0.3248	0.3322	
		y	0.35	0.355	0.345	0.34	
57P-D		x	0.3425	0.3343	0.3295	0.3373	
		y	0.36	0.365	0.355	0.35	
65P-A		6500K	x	0.3153	0.3076	0.3025	0.3106
			y	0.325	0.335	0.325	0.315
65P-B	x		0.3201	0.3128	0.3076	0.3153	
	y		0.335	0.345	0.335	0.325	
65P-C	x		0.3249	0.3179	0.3128	0.3201	
	y		0.345	0.355	0.345	0.335	

**Notes:**

- \*1. Iv : Tolerance for each Bin limit is  $\pm 5\%$
- \*2. X/Y : Tolerance for each Bin limit is  $\pm 0.005$
- \*3. VF: Tolerance for each Bin limit is  $\pm 0.05V$

**Tapping and packaging specifications(Units: mm)**

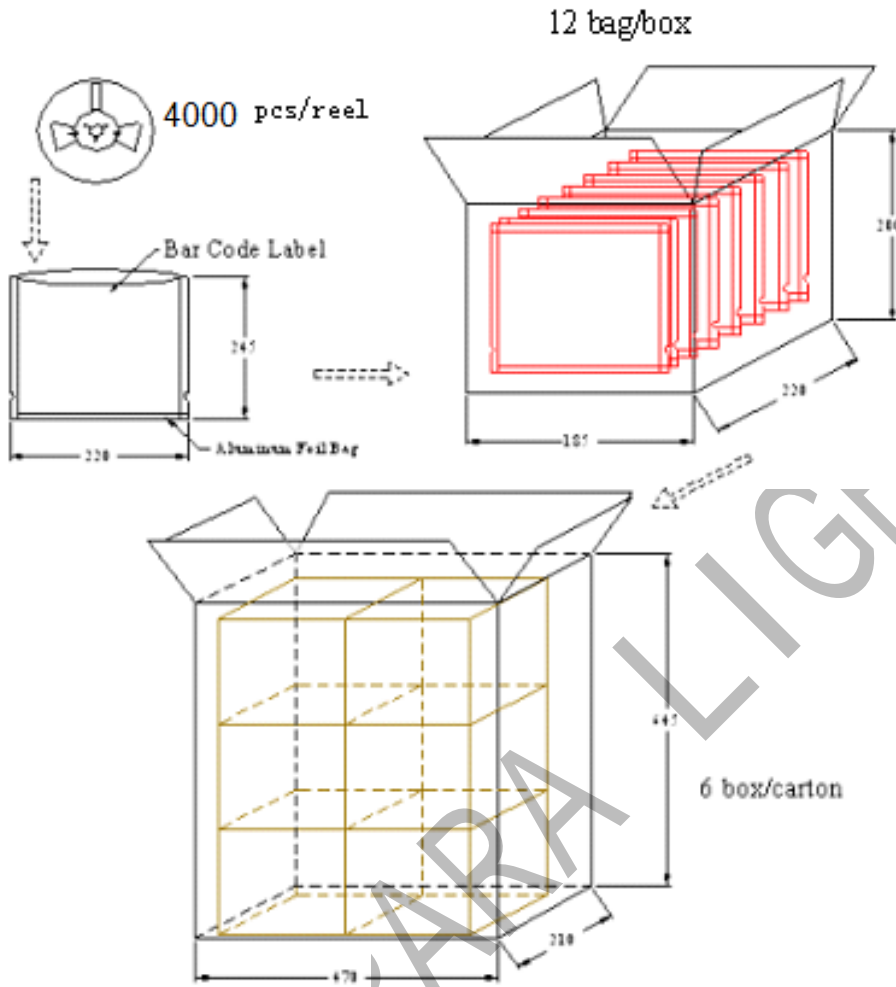




# SURFACE MOUNT DEVICE LED

Part No. : SZT2835WDT-0.5W REV: A / 0

Package Method : (unit:mm)



Package: Products are packed in one bag of 4000 pcs (one taping reel) and a label is attached to each bag.

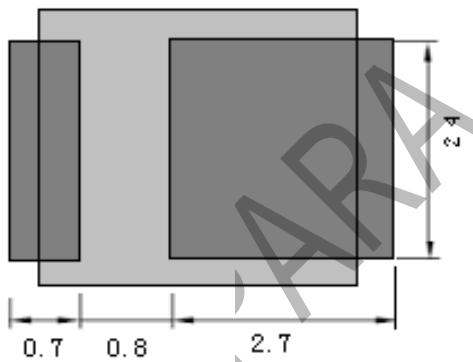
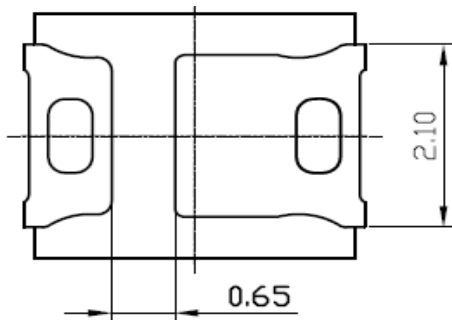
Label:

		光鼎电子股份有限公司 PARALIGHT ELECTRONICS CO., LTD	
CUS.PART NO:			
CUSTOMER:			
PART NO:			
LOT NO:			
		WD:	
		VF:	
		IE:	
DATE CODE:			
		QC:	RoHS



Recommended Soldering Pattern(unit:mm)

Front View



- Solder resist
  - Solder paste stencil
- Pad design for improved heat dissipation(Cu-area)



# SURFACE MOUNT DEVICE LED

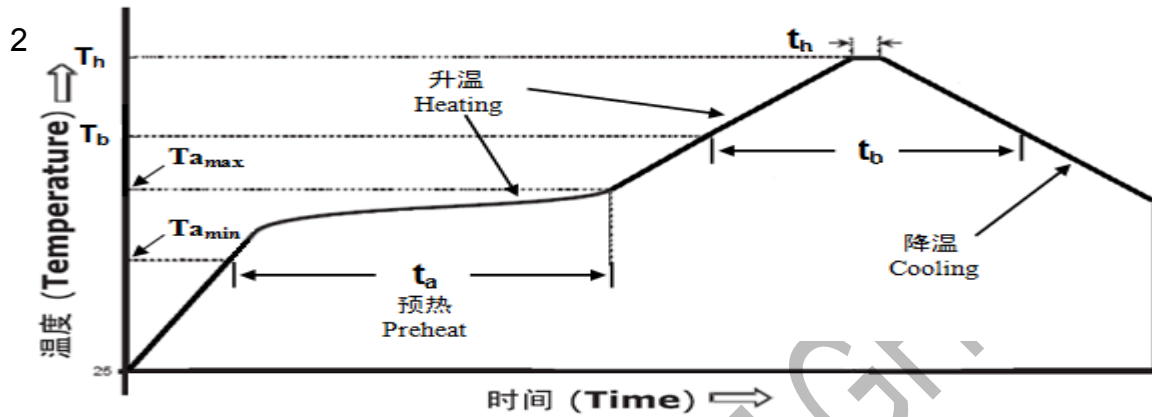
Part No. : SZT2835WDT-0.5W      REV: A /0

## Reliability Test

Classification	Test Item	Reference Standard	Test Conditions	Result
Endurance Test	Operation Life	MIL-STD-750:1026 MIL-STD-883:1005 JIS-C-7021 :B-1	I <sub>F</sub> =60mA T <sub>a</sub> =Under room temperature Test time=1,000hrs	0/20
	High Temperature High Humidity Storage	MIL-STD-202:103B JIS-C-7021 :B-11	T <sub>a</sub> =+65°C±5°C RH=90%-95% Test time=168hrs	0/20
	High Temperature Storage	MIL-STD-883:1008 JIS-C-7021 :B-10	High T <sub>a</sub> =+85°C±5°C Test time=1,000hrs	0/20
	Low Temperature Storage	JIS-C-7021 :B-12	Low T <sub>a</sub> =-35°C±5°C Test time=1,000hrs	0/20
Environmental Test	Temperature Cycling	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS-C-7021 :A-4	-35°C ~ +25°C ~ +85°C ~ +25°C 60min 20min 60min 20min Test Time=5cycle	0/20
	Thermal Shock	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1011	-35°C±5°C ~+85°C±5°C 20min 20min Test Time=10cycle	0/20
	Solder Resistance	MIL-STD-202:201A MIL-STD-750:2031 JIS-C-7021 :A-1	Preheating : 预热 140°C-160°C, within 2 minutes. Operation heating : 两分钟内 260°C(Max.), within 10seconds. (Max.)	0/20

◆ **Soldering :**

1. The temperature of the iron tip should not be higher than 350°C and Soldering time to be within 3 seconds per solder-pad.



Temperature curve Parameters	Lead solder paste	Lead -free solder paste
The rate of temperature	4°C/SEC.MAX	4°C/SEC.MAX
Preheat: Min temperature (Tamin)	100°C	120°C
Preheat: Max temperature (Tamax)	150°C	180°C
Preheat time (tamin to tamax )	60~100 SEC	60~120 SEC
Soldering temperature (Tb)	180°C	217°C
Soldering time (tb)	60~120 SEC	60~120 SEC
Peak temperature	215°C	260°C
Peak temperature time	10 ~15 SEC	5~10 SEC
Cooling speed	6°C/SEC.MAX	6°C/SEC.MAX

**◆ Judgment criteria of failure for the reliability**

Measuring items	Symbol	Measuring conditions	Judgement criteria for failure
Forward voltage	$V_F$ ( V )	$I_F=150\text{mA}$	Over $U^1 \times 1.2$
Reverse current	$I_R(\mu\text{A})$	$V_R=5\text{V}$	Over $U^1 \times 2$
Luminous intensity	$I_v$ ( mcd )	$I_F=150\text{mA}$	Below $S^1 \times 0.5$

Note: 1. U means the upper limit of specified characteristics. S means initial value.

2. After each test, remove test pieces, wait for 2 hours and test pieces have returned to ambient temperature, then take next measurement.

**◆ Storage:**

1. recommended storage condition: At  $5^\circ\text{C}-30^\circ\text{C}$  and relative humidity 60% RH Max.

2. After this bag is opened, devices that will be applied to infrared reflow, vapor-phase reflow, or equivalent oldering process must be:

- a. completed within 24 hours
- b. Stored at less than 30% RH.

3. Devices require baking before mounting, if:

2a or 2b is not met

4. If baking is required, devices must be baked under below conditions:

12 hours at  $60^\circ\text{C} \pm 3^\circ\text{C}$

**◆ Note:**

(1) Care must be taken not to damage LED's silicone resin while exposing to high temperature or contact LED's silicone resin with hard or sharp objects, such as metal hook, tweezer or sand blasting..

(2) Current limiting resistor must be used in the circuit to drive Grand LEDs within the rated figures and not to overload Grand LEDs with instantaneous voltage at the turning ON and OFF cycles. When using pulse driving, the average current must be within the rated figures. And the circuit should be designed to avoid reverse voltage when turning off the Grand LEDs.

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