

PU88S31

Product Specification

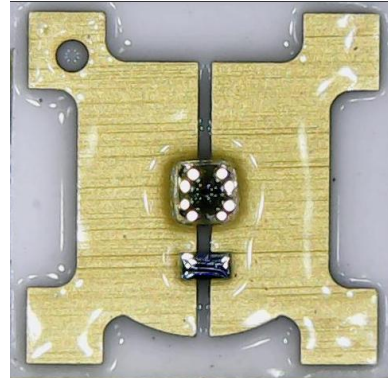
Updated on 2019/01/21

Approval Sheet

PU88S31 UV LED Package
 Product Specification

RoHS

Product	UVC 3535 Ceramic
Part Number	PU88S31
Customer	
Issue Date	2019/01/21



Feature

- ✓ Dice Technology : AlGaN
- ✓ Environmental friendly ; RoHS compliance

Applications

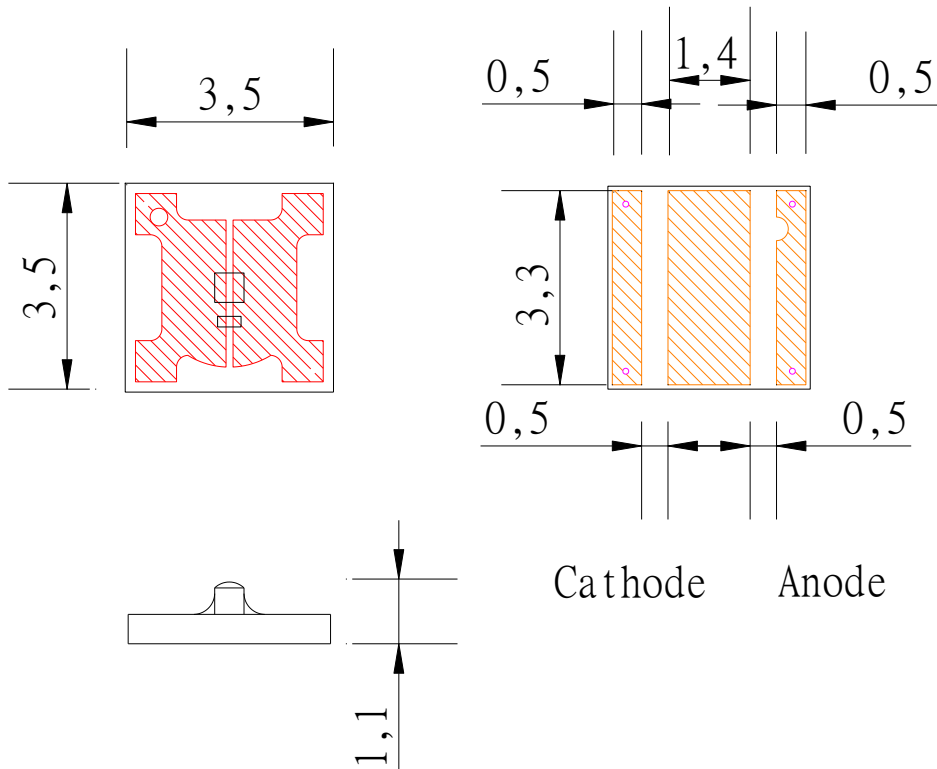
- ✓ Sterilization
- ✓ Water purification
- ✓ Air purification

MAKER			CUSTOMER
Prepared	Checked	Approved	Approver
Alu Lin	Howard.ch.lin	KH Shen	

Outline Dimension

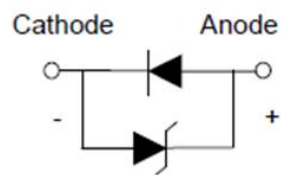
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Outline Dimension



Cathode Anode

Internal Circuit



*. Tolerance: $\pm 0.15\text{mm}$

Performance

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■ Opto-Electrical Characteristics

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage*	V_F	$I_F = 20\text{mA}$	4.0	5.2	7.0	V
Wavelength**	W_P	$I_F = 20\text{mA}$	270	280	290	nm
Junction Temperature***	deg.C	$I_F = 20\text{mA}$	--	--		°C
View Angle	θ	$I_F = 20\text{mA}$	--	140	--	deg
Radiant Power	P_o	$I_F = 20\text{mA}$	1.5	3.5	6.0	

- (1).The Forward Voltage tolerance is $\pm 0.1\text{V}$
- (2).Peak Wavelength tolerance is $\pm 5\text{nm}$
- (3).Thermal resistance is calculated from junction to solder
- (4).The Radiant Power tolerance $\pm 10\%$

■ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
DC Forward Current	I_F	30	mA
ESD	V_{ESD}	8000	V
Soldering Temperature*(2)	T_S	260	°C
Junction Temperature	T_J	65	°C
Storage Temperature	T_{Stg}	-40~100C	°C
Operation Temperature	T_{Op}	-10~60	°C

- (1) JEDEC STD-020 latest version compliant.
- (2) Proper current rating must be observed to maintain junction temperature below T_J max.

Binning

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Wavelength Rank (Ta=25°C)

W _P Rank	Min.	Max.	Unit	Condition
U0270	270	280	nm	I _F =20mA
U0280	280	290	nm	I _F =20mA

Radiant Power Rank (Ta=25°C)

P _O Rank	Min.	Max.	Unit	Condition
00	1.5	2.0	mW	I _F =20mA
01	2.0	3.0	mW	I _F =20mA
02	3.0	4.0	mW	I _F =20mA
03	4.0	5.0	mW	I _F =20mA
04	5.0	6.0	mW	I _F =20mA

Forward Voltage Rank (Ta=25°C)

V _F Rank	Min.	Max.	Unit	Condition
01	4.0	4.5	V	I _F =20mA
02	4.5	5.0	V	I _F =20mA
03	5.0	5.5	V	I _F =20mA
04	5.5	6.0	V	I _F =20mA
05	6.0	6.5	V	I _F =20mA
06	6.5	7.0	V	I _F =20mA

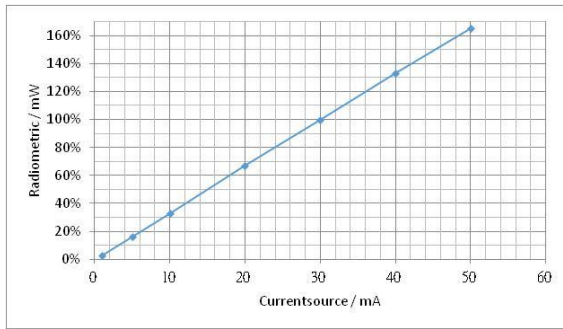
Bin code definition (for example)

W _P Rank	P _O Rank	V _F Rank
U0270	03	00

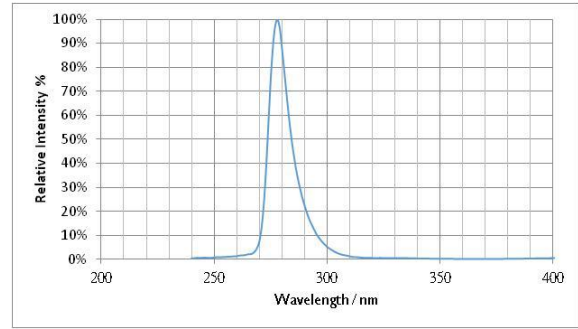
Characteristics

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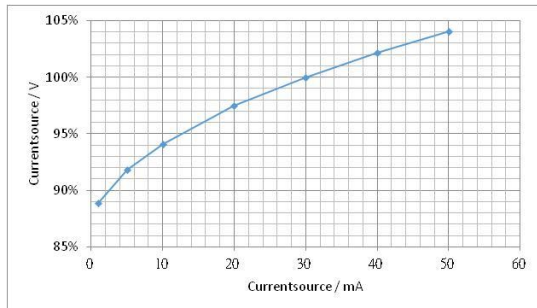
Relative Radiant Flux vs. Forward Current



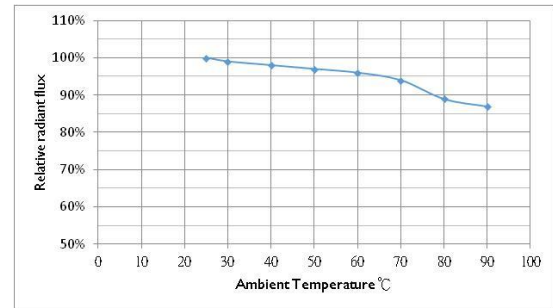
Relative Spectral Distribution vs. Wavelength at 25°C, I_F=30mA



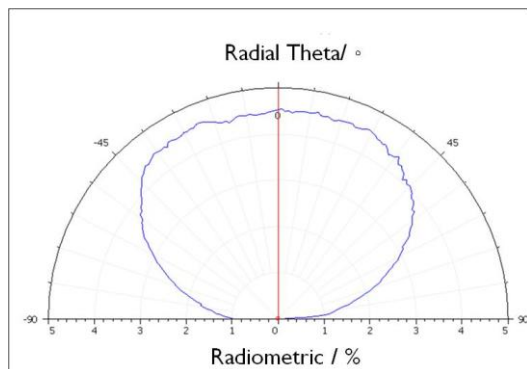
Forward Current vs. Forward Voltage at 25°C



Relative radiant flux vs. Ambient Temperature



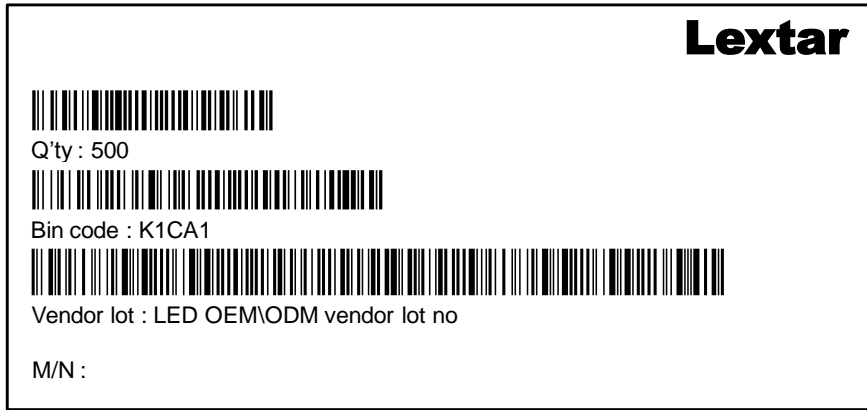
Directivity



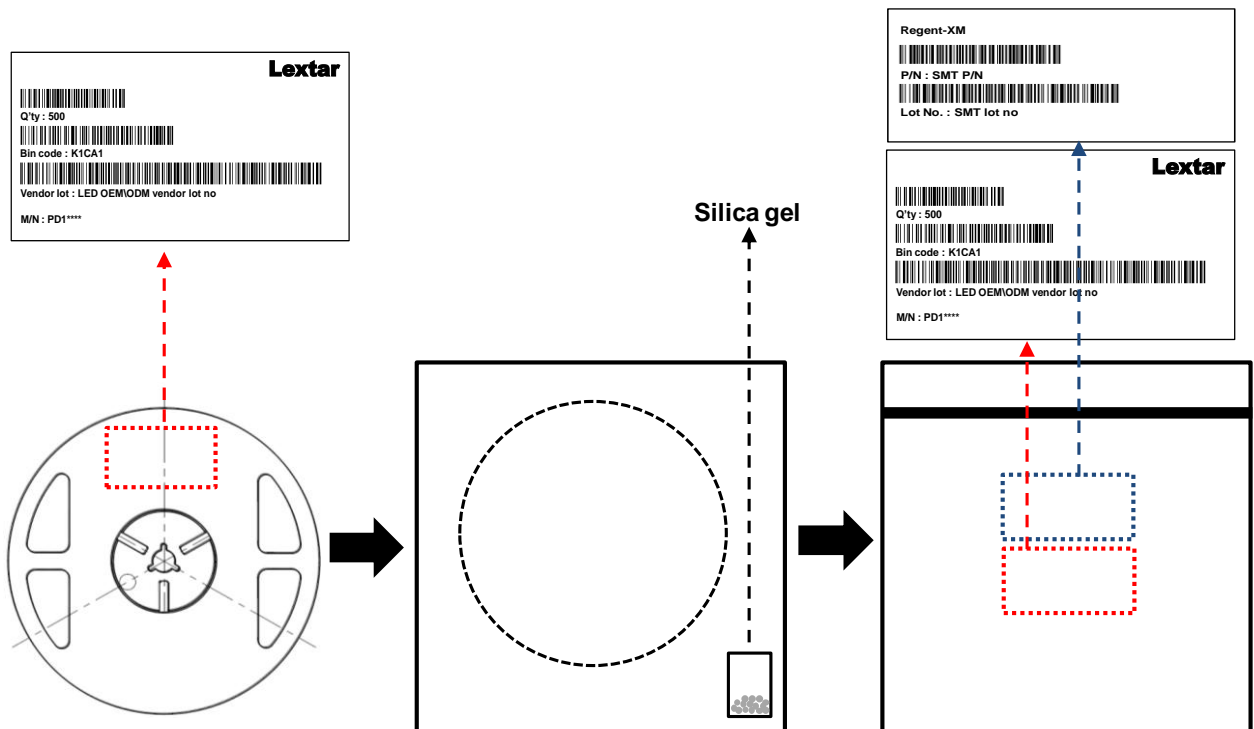
Packing

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Label



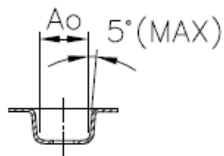
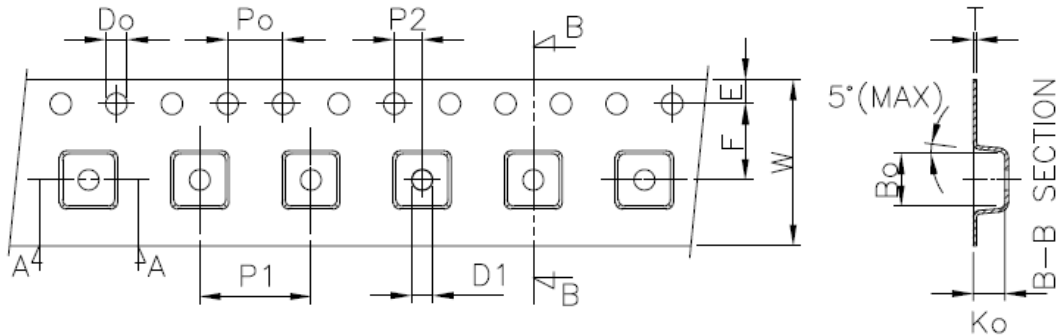
Packing process



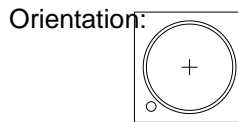
Packing

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Carrier dimensions(TBD)



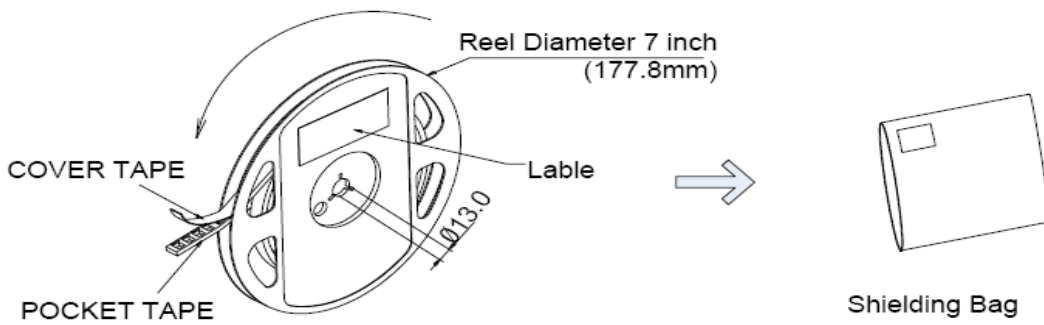
A-A SECTION



UNIT:mm

Symbol	Ao	Bo	Ko	Po	P1	P2	T
Spec	3.72±0.10	3.72±0.10	TBD	4.00±0.10	8.00±0.10	2.00±0.10	0.25±0.10
Symbol	E	F	Do	D1	W	10Po	--
Spec	1.75±0.10	5.5±0.05	1.55±0.05	1.50±0.10	12.0±0.30	40.0±0.20	--

USER REEL DIRECTION



7 inch Anti-Static Reel

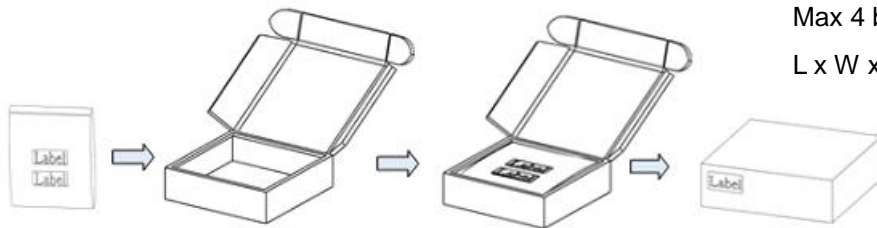
Max 500pcs/reel

Min 250pcs/reel

Packing

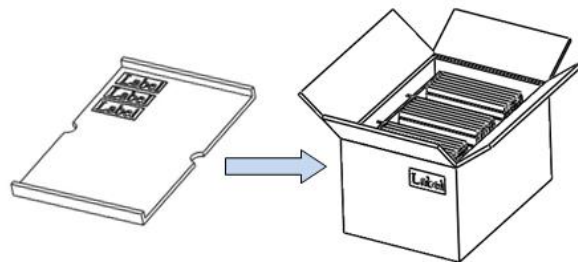
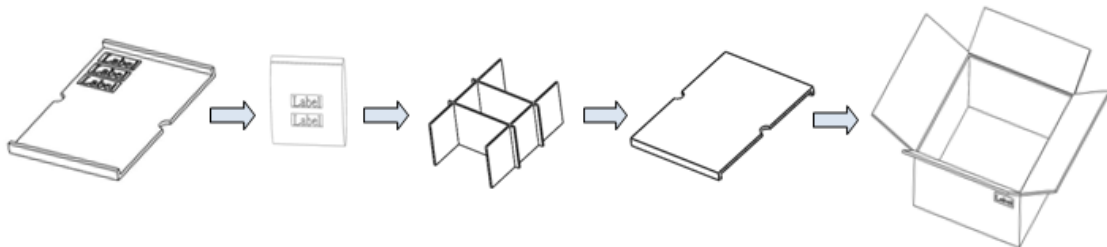
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■ Small Box



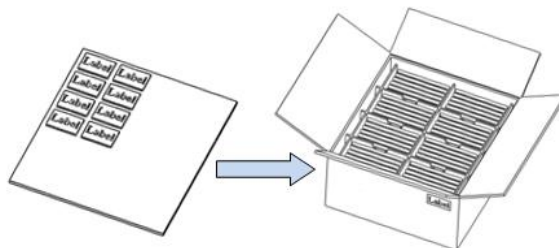
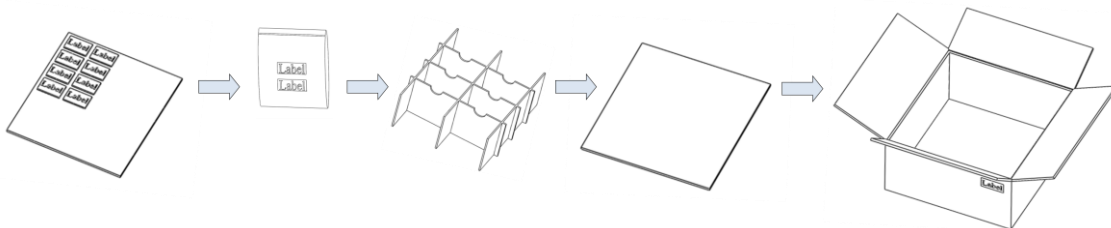
Max 4 bags in 1 inner box
L x W x H =290x240x70mm

■ Medium Box



5 inner boxes in one carton
L x W x H =390x310x260mm

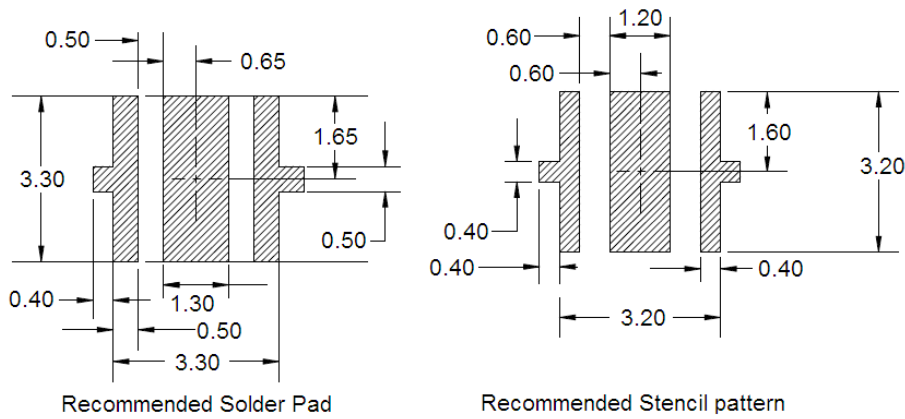
■ Large Box



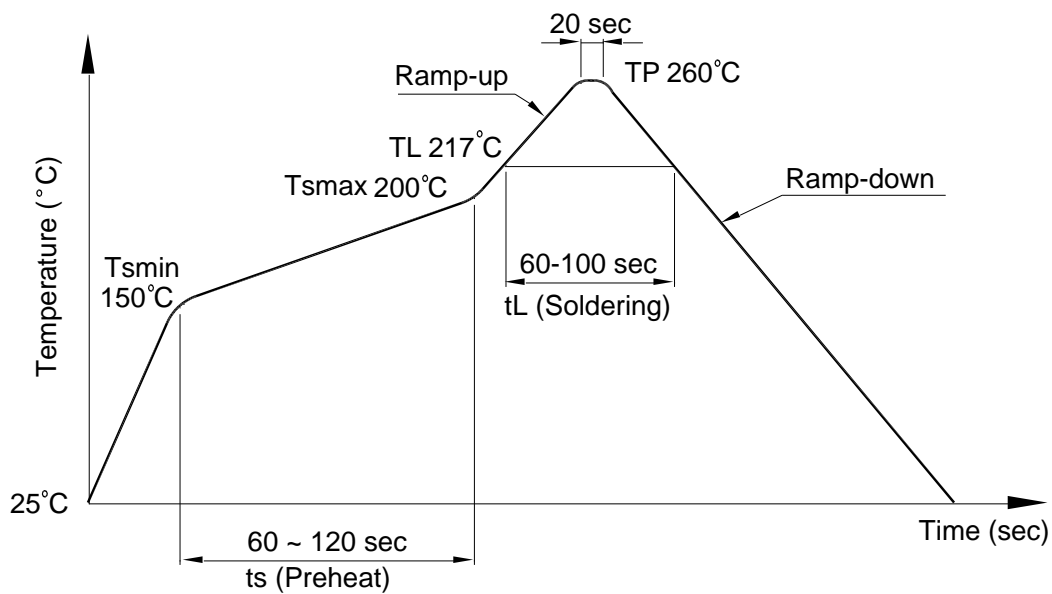
Application Notes

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Soldering PAD Design



Recommended Reflow Soldering Profile (JEDEC-STD-020 latest version compliant)



Packing

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Profile Items	Conditions
Preheat	
-Temperature Min.(T_{Smin})	150°C
-Temperature Max.(T_{Smax})	200°C
-Time(Min. to Max.)(t_S)	90±30 sec
Soldering Zone	
-Temperature(T_L)	217°C
-Time	60~100 sec
Peak Temperature(T_P)	260°C
Ramp-up rate	3°C / sec max.
Ramp-down rate	3~6°C / sec

Note:

1. One time soldering is recommended; do not exceed 3 times reflow process.
2. The recommended peak temperature is 245°C. The maximum soldering temperature should be controlled under 260°C.

Precautions

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■ Use Applications

- The products are not intended to any application which is not specified in this document. For other application, please be noted that a different product may be required. If you have any concerns, please contact us before using the products in your desired application. This specification guarantees the quality and performance of the products as an individual component. Do not use the products beyond the use case and use environment that the specification has described in this document. We assume no responsibility and liability for any lost and damage resulting from the use or operation of the products which do not comply with any absolute maximum ratings, warnings, restrictions and instructions recited in these specification sheets or other forms of notices from us or resulting from the use or operation of the products under non-standard environment or operations.

■ Cautions

- All measurement data is taken from standard laboratory procedures on each discrete product. The procedure does not work on any product integrating components and materials not provided by us. The measurement is provided for your reference and evaluation on your integrated products only. Therefore the products should always be cautiously used with other parts on your own. It is your or your customer's responsibility to perform sufficient tests under your expected environment prior to use the products with other parts to ensure that the lifetime and other quality characteristics required for the actual use in real life are met. During your tests, it is recommended to actively consult with us instantly while there is any concern or inconsistency about the discrete LED. Caution: While using under non-standard environment, application or non-approval operations, be aware of malfunctions or damages leads to risks of life or health.
- You will not reverse engineer, disassemble or otherwise attempt to extract knowledge/design information from the products. In the case of any incident or quality concern that appears to be in breach of these specifications, the products in question must be reported to our local

sales representatives for further instructions. Please ensure that the products in question are not disassembled or removed from the PCBs (if any). The determination of whether the products in question are defective and are required for any corrective action thereafter shall be made by us in accordance with our cause analysis procedure. If you do not agree with our cause analysis result, you may request us to send the products in question to a mutually agreed third party for inspection. The cost of such third party inspection shall be borne by you unless it is determined by such third party that said quality issue is solely attributable to us. In the above case, our sole and exclusive obligation shall be, either to repair, replace or refund the products in question.

- All previous negotiation and agreements not specifically incorporated herein are superseded and rendered null and void. We assume no liability with respect to defects and/or issues of the products caused by:
 - (a.) alternation, modification, change, repair and attempt to repair of the products by a party other than us;
 - (b.) not caused by our negligent, gross negligent, reckless, or other improper use of the LEDs;
 - (c.) installation, operation, or maintenance of the products by a party other than us and not in a manner described in the instruction manual, if applicable; and
 - (d.) Combination of a product not supplied by us.

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