

SMD LED Datasheet

WR-3030G10-80XX-C-S



Features

- High Luminous Flux Output
- Pb-Free
- RoHScompliant

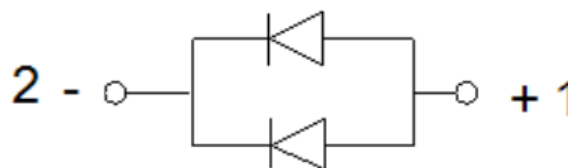
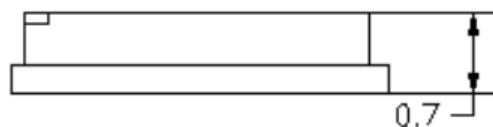
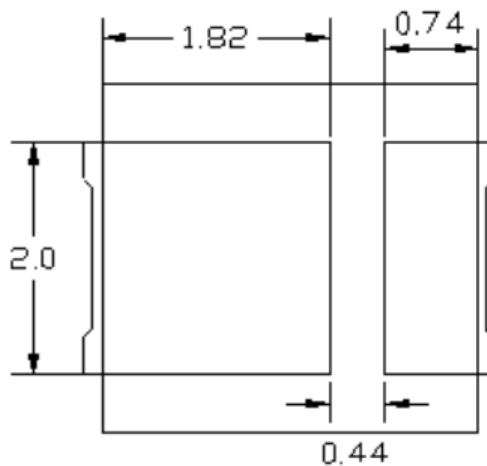
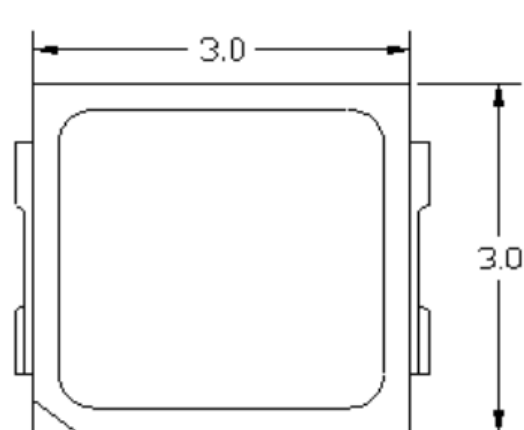
Description

The 3030 package has high efficacy , low power consumption, wide viewing angle and a compact form factor. These features make this package an ideal LED for all lighting applications.

Applications

- General lighting
- Decorative and Entertainment lighting
- Indicators
- Illumination
- Switch lights

Package outline



Notes:

- 1.All dimensions are in millimeters.
- 2.Tolerances are
 - X.X ± 0.1 ;
 - X.XX ± 0.05 .

Absolute maximum ratings at Ta=25°C

Parameter	Symbol	Absolute Maximum Rating	Unit
Continuous Forward current	I _f	200	mA
Pulse Forward Current[1]	I _{fp}	400	mA
Operating temperature range	T _a	-40 ~+100	°C
Storage temperature range	T _{stg}	-40 ~+100	°C
Junction Temperature	T _j	125	°C
Electrostatic Discharge(HBM)	ESD	2000	V

Notes:

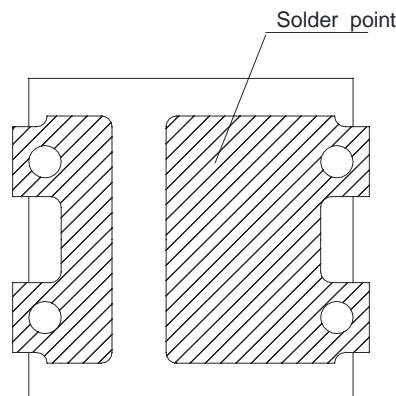
[1]1/10 Duty cycle,0.1ms pulse width.

Electro-optical characteristics at Ta=25°C

Parameter	Symbol	MIN.	TYP.	MAX.	Unit	Test Condition
Forward Voltage	V _F	5.8	---	6.4	V	I _F =150mA
Luminous Flux	Φ _v	120	---	150	lm	I _F =150mA
Color Temperature	CCT	2700	---	7000	K	I _F =150mA
Color Rendering Index	R _a	80	---	90	/	I _F =150mA
View Angle	2θ _{1/2}	---	120	---	°	I _F =150mA
ReverseCurrent	I _R	---	---	10	μA	V _R =10

Notes:

1. Tolerance of Luminous flux: ± 7 % .
2. Tolerance of Forward Voltage: ± 0.1 V.
3. Tolerance of Color Rendering Index: ± 3



Mass Production List

Product	CRI Min	CCT(K)	Φ(lm) Min.	Φ(lm)Max.
WR-3030G10-80W2-C-S	80	2700K	120	130
WR-3030G10-80W1-C-S	80	3000K	130	140
WR-3030G10-80N3-C-S	80	4000K	140	150
WR-3030G10-80C5-C-S	80	5000K	140	150
WR-3030G10-80C3-C-S	80	5700K	140	150
WR-3030G10-80C1-C-S	80	6500K	140	150

Bin Range of LuminousFlux

Bin Code	Min.	Max.	Unit	Condition
LAA	120	130	LM	IF=150mA
LBA	130	140		
LCA	140	150		

Note:

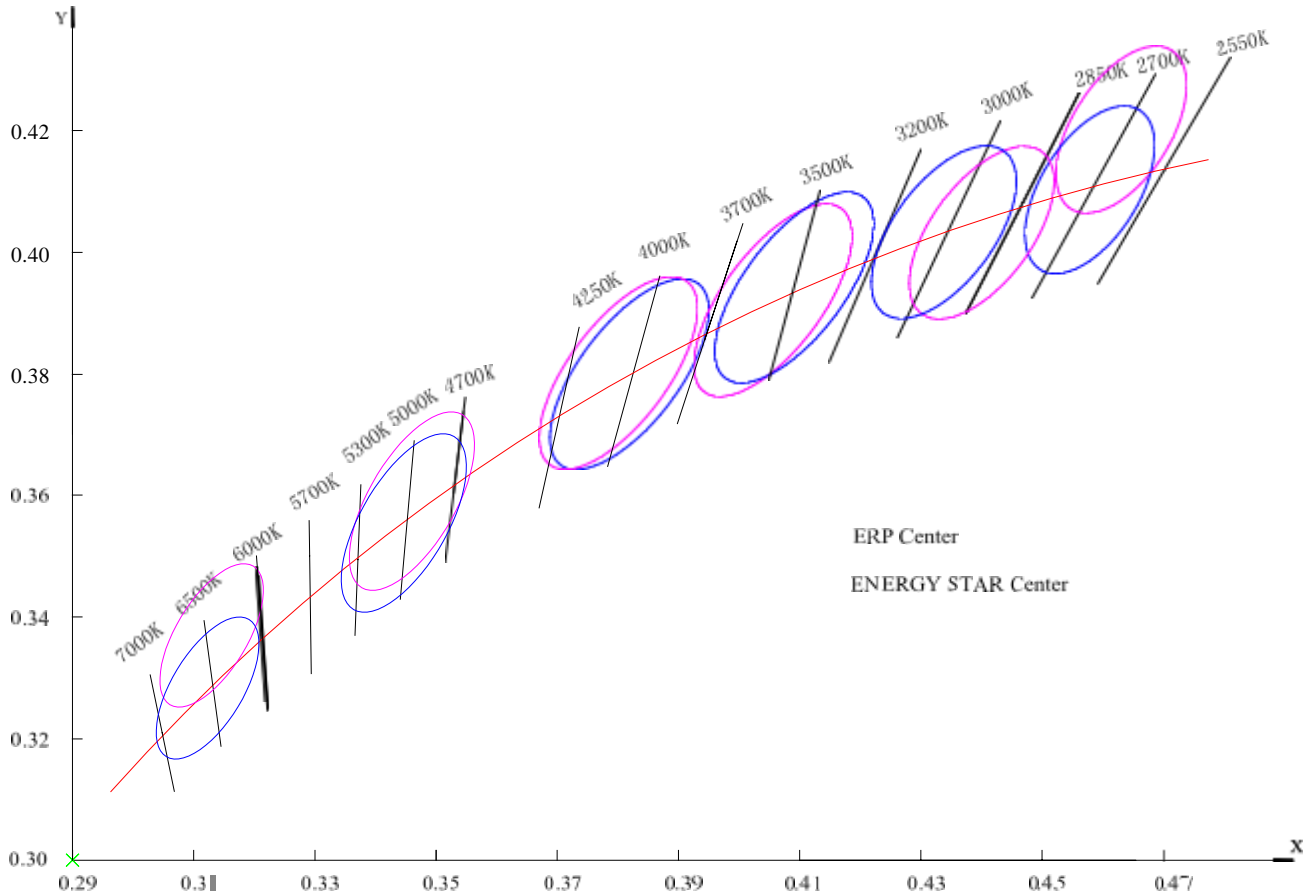
Tolerance of Luminous flux: $\pm 7\%$.**Bin Range of ForwardVoltage**

Bin Code	Min.	Max	Unit	Condition
AM2	5.8	6.0	V	IF=150mA
AN1	6.0	6.2		
AN2	6.2	6.4		

Note:

Tolerance of Forward Voltage: $\pm 0.1V$.

CIE chromaticity



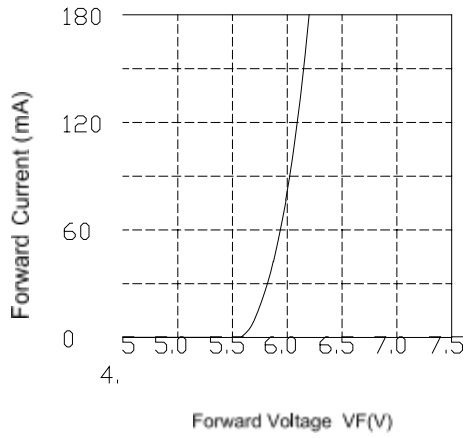
Bin data

ERP or Energy Star BIN (SDCM=5)

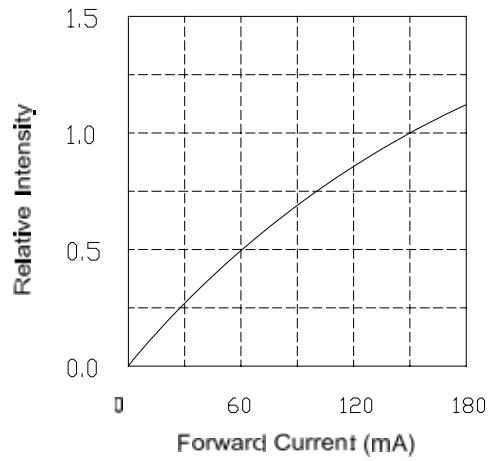
CCT Range: 2850K~3200K						CCT Range: 3200~3700K					
ERP	X	0.440	ENERGY STAR	X	0.4338	ERP	X	0.409	ENERGY STAR	X	0.4073
	Y	0.403		Y	0.4030		Y	0.394		Y	0.3917
CCT Range: 3700~4250K						CCT Range: 4700K~5300K					
ERP	X	0.38	ENERGY STAR	X	0.3818	ERP	X	0.346	ENERGY STAR	X	0.3447
	Y	0.38		Y	0.3797		Y	0.359		Y	0.3553
CCT Range: 5300K~6000K						CCT Range: 6000K~7000K					
ERP	X	---	ENERGY STAR	X	0.3287	ERP	X	0.313	ENERGY STAR	X	0.3123
	Y	---		Y	0.3417		Y	0.337		Y	0.3282

Spectrum Distribution

Forward Current vs. Forward Voltage(Ta=25°C)



Relative Intensity vs. Forward Current (Ta=25°C)



Derating
Maximum Forward Current vs. Ambient Temperature

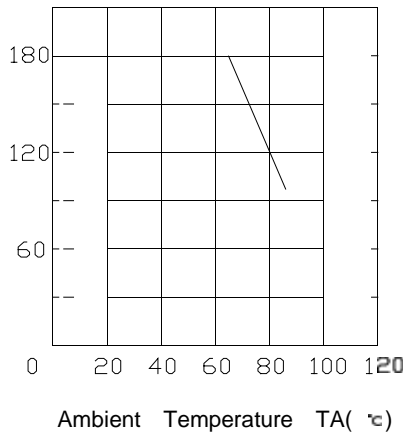
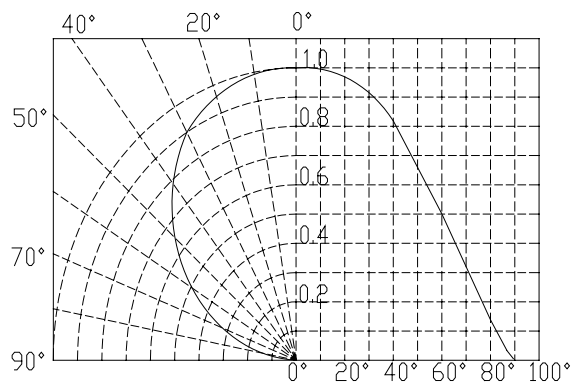
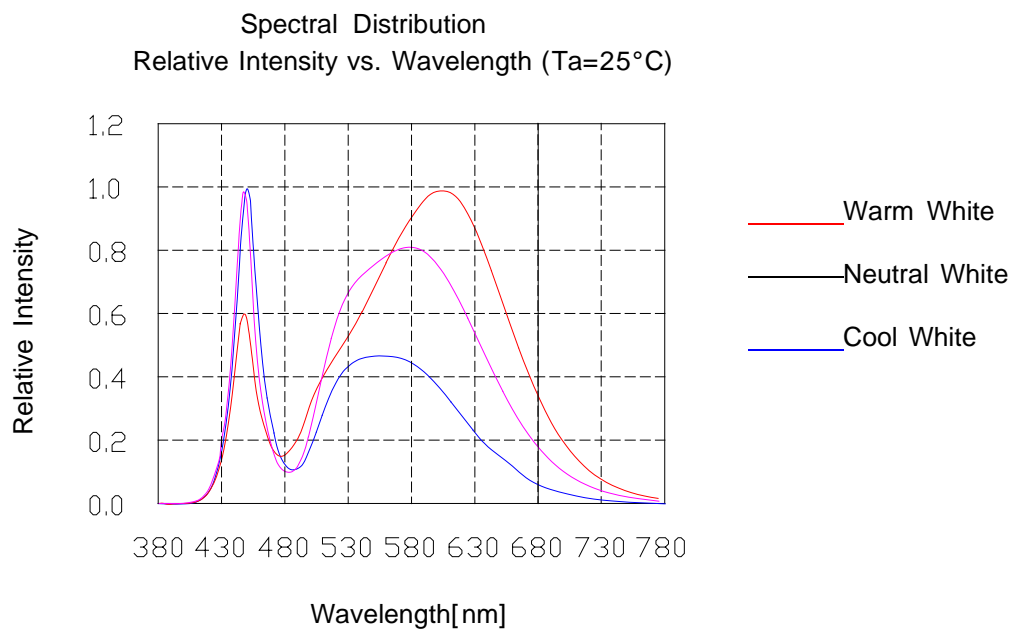


Diagram characteristics of radiation





Reflow profile

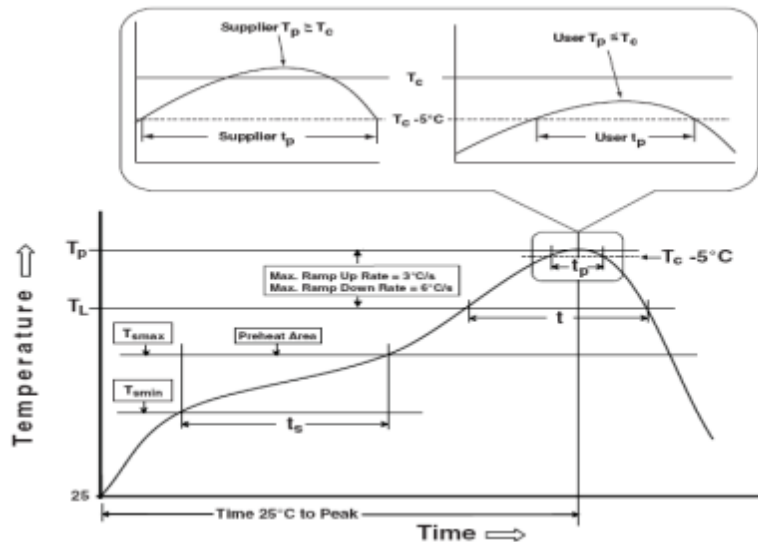
■Soldering condition(JEDEC-020D)

Suggestion IR Reflow Profile ForPb Free Process

Profile Feature	Pb- Free Assembly
Preheat & Soak	
Temperature min (T _{min})	150 °C
Temperature max(T _{max})	200 °C
Time (T _{min} to T _{max})(t _s)	60- 120seconds
Average ramp – up rate (T _{max} to T _p)	3 °C/second m ax
Liquidous temperature (T _L)	217 °C
Time at liquidous (T _L)	60- 150 seconds
Peak package boby temperature (T _p) *	See classification temp in the table below
Time (t _p)** within 5 °C of the Classification temperature (T _c)	30** seconds
Average ramp- down rate (T _p to T _{max})	6 °C/second m ax
Time 25 °C to peak te	8 minutes max
* Tolerance for peak profile temperature (T _p) is defined as a supplier minimum and a user maximum .	
** Tolerance for time at peak profile temperature (t _p) is defined as a supplier minimum and a user maximum .	

Pb-Free Process-Classifcatlon Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6mm	260 °C	260 °C	260 °C
1.6mm-2.5mm	260 °C	250 °C	245 °C
>2.5mm	250 °C	245 °C	245 °C



1. Reflow soldering should not be done more than two times.
2. When soldering ,do not put stress on the LEDs during heating.

Reliability

Test items and results

Type	Test Item	Ref. Standard	Test Conditions	Note	Number of Damaged
Environmental Sequence	Resistance to Soldering Heat(Reflow Soldering)	JESD22-B106	Tsld=260C,10sec	3 times	0/22
	Temperature Cycle	JESD22-A104	-40°C ,30min t↓5 min 100°C ,30min	300 cycle	0/22
	Thermal Shock	JESD22-A106	-40°C , 15min t↓ 100°C , 15min	300 cycle	0/22
	High Temperature Storage	JESD22-A103	T _a =100°C	1000 hrs	0/22
	Low Temperature Storage	JESD22-A119	T _a =-40°C	1000 hrs	0/22
Operation Sequence	Life Test	JESD22-A108	T _a =25°C I _F =150mA	1000 hrs	0/22
	High Humidity Heat Life Test	JESD22-A101	60°CRH=90% I _F =150mA	1000 hrs	0/22

Criteria for judging the damage

Item	Symbol	Test Conditions	Criteria for Judgement	
			Min.	Max.
Forward Voltage	VF	IF=150mA	-	U.S.L*)x1.1
Luminous Intensity	IV	IF=150mA	L.S.L**)x0.7	-

U.S.L.: Upper Standard Level

L.S.L.: Lower Standard Level

Packaging specifications

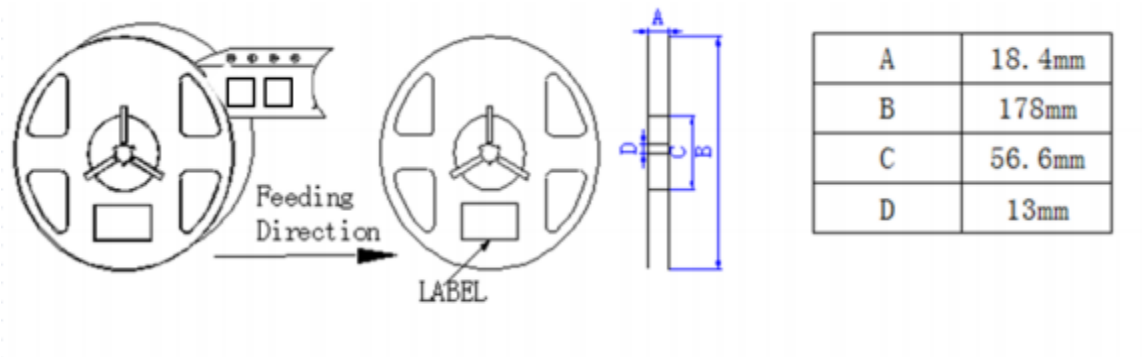
DATASHEET

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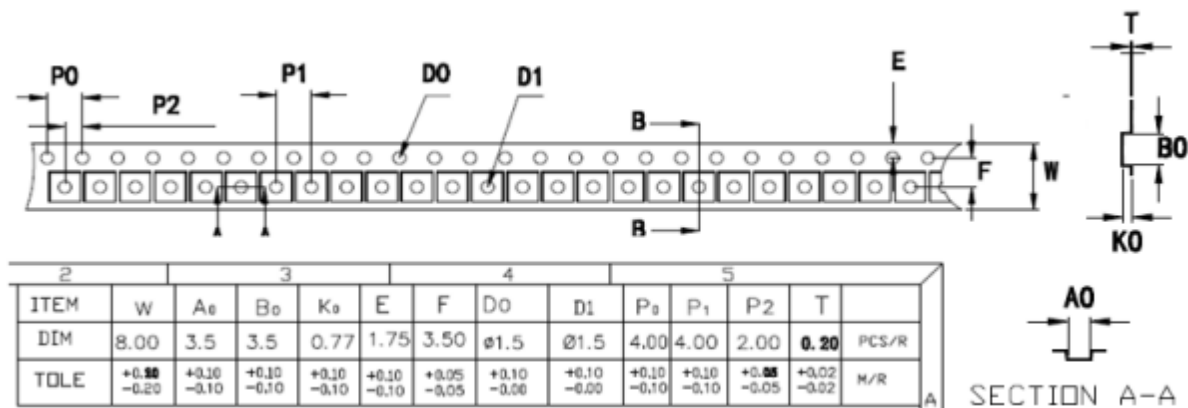
WR-3030G10-80XX-C-S

Anhui Retop Electronics Co.,Ltd.

- Feeding direction
- Dimensions of reel (unit: mm)



- Arrangement of tape



Notes:

1. Empty component pockets are sealed with top cover tape.
2. The maximum number of missing lamps is two.
3. The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications.
4. 5,000 pcs/ Reel.

REV:A / 0

DATE :2019-1-16

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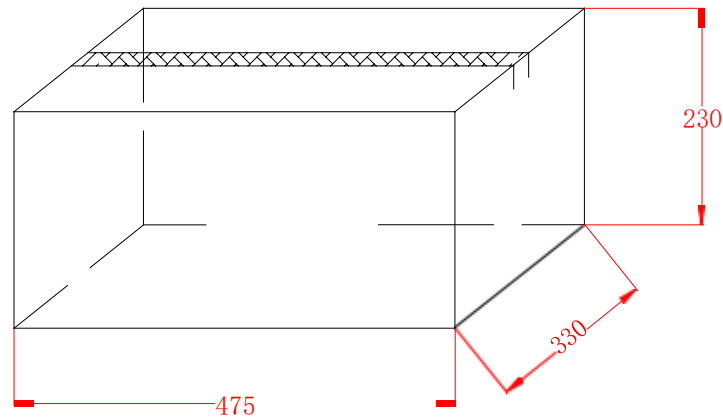
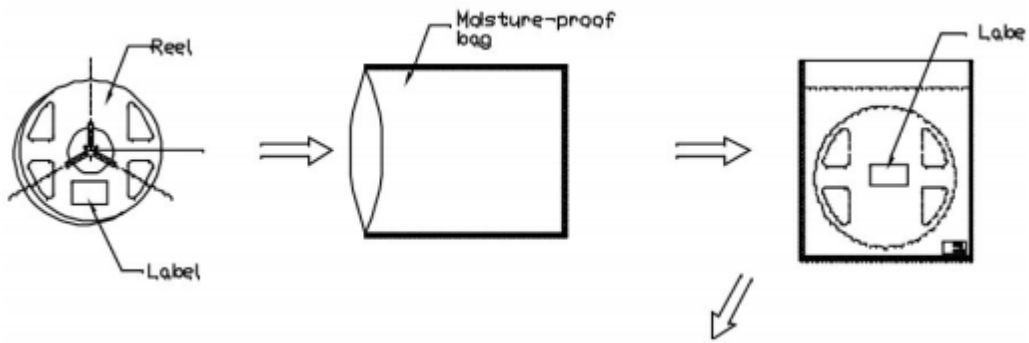
Packaging specifications

DATASHEET



WR-3030G10-80XX-C-S

Anhui Retop Electronics Co.,Ltd.



Label

Anhui Retop Electronics Co.,Ltd.

PART NO. : WR-3030XXX-XXXX

PART CODE : 13030XXXXXXX

W/O NO. : XXX



VF		IF	
Φv		BIN	
GCT		QTY	
CIE		DATE	

MADE IN CHINA

- VF: Forward VoltageRank
- IF: Forward Current
- 0v: Luminous IntensityRank
- CIE: XYRank
- QTY: PackingQuantity
- DATE:

Cautions

Package specifications

Reeled products (numbers of products are 5,000pcs) packed in a seal off moisture-proof bag along with a desiccant one by one, Eighty moisture-proof bag of maximums are put the outside box (size: about 545mm x about 375mm x about 275mm) Together with buffer material, and it is packed. (Pare No., Lot No., quantity should appear on the label on the moisture-proof bag, part No. And quantity should appear on the label on the cardboard box.) The number of the loading steps of outside box (cardboard box) has two steps.

Storage conditions

Before opening the package:

The LEDs should be kept at 30°C or less and 70% RH or less, The LEDs should be used within a year.

When storing the LEDs moisture proof packaging with absorbent material (silica gel) is recommended. After opening the package:

The LEDs should be kept at 30°C or less and 50% RH or less, If unused LEDs remain, they should be stored in moisture proof packages, such as sealed containers with packages of moisture absorbent material (silica gel). It is also recommended to return the LEDs to the original moisture proof bag and to reseal the moisture proof bag again.

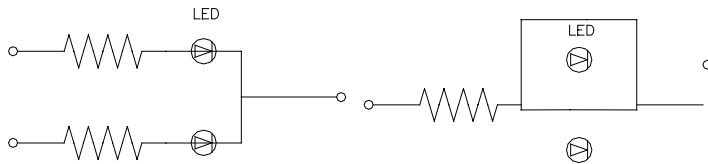
Cleaning

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED if necessary.

Drive method

An LED is a current-operated device. In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended that a current limiting resistor be incorporated in the drive circuit, in series with each LED as shown in Circuit A below.

Circuit model A Circuit model B



(A) Recommended circuit.

(B) The brightness of each LED might appear different due to the differences in the I-V characteristics of those LEDs.

Reflow profile

The encapsulated material of the LEDs is silicone. Therefore the LEDs have a soft surface on the top of package.

The pressure to the top surface will be influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when using the picking up nozzle, the pressure on the silicone resin should be proper.