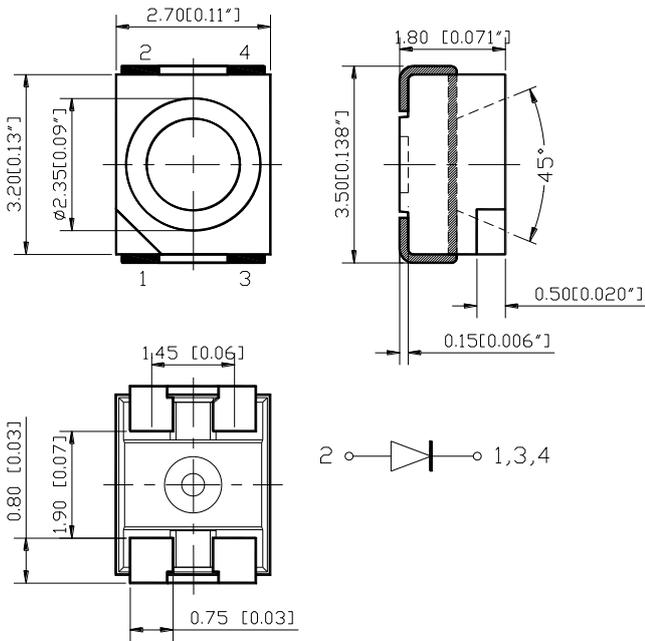


REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

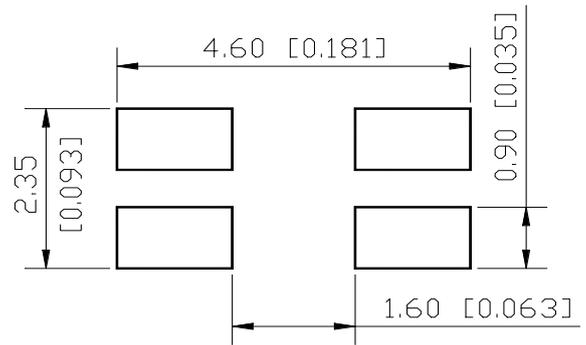
High Performance SMD Single-Color Top LEDs

Part Number: GH-RUHB31TK-WPJ

Package outlines



RECOMMEND PAD LAYOUT





ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE DEVICES

ITEM	MATERIALS
Resin	Silicon
Lens color	Water transparent
Dice	AlGaInP
Emitted color	Red

NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are $\pm 0.2\text{mm}$ (0.008inch) unless otherwise noted.

Rev :	Date	Drawn by :	Checked by :	Approved by :
A	2015/08/07			

REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

Part Number: GH-RUHB31TK-WPJ

Absolute maximum ratings (T_A=25°C)

Parameter	Symbol	Value	Unit
Forward current	I _f	50	mA
Reverse voltage	V _r	5	V
Power dissipation	P _d	145	mW
Operating temperature range	T _{op}	-40 ~+80	°C
Storage temperature range	T _{stg}	-40 ~+85	°C
Peak pulsing current (1/8 duty f=1kHz)	I _{fp}	125	mA

Electro-optical characteristics (T_A=25°C)

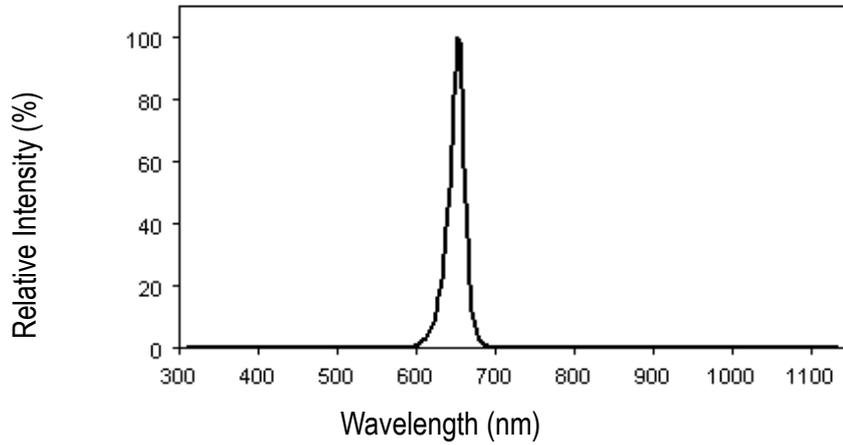
Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Wavelength at peak emission	I _f =50mA	λ peak	--	654	--	nm
Spectral half bandwidth	I _f =50mA	Δ λ	--	22	--	nm
Dominant wavelength	I _f =50mA	λ dom	630	640	650	nm
Forward voltage	I _f =50mA	V _f	1.9	2.1	2.9	V
Luminous intensity	I _f =50mA	I _v	100	170	320	mcd
Viewing angle at 50% I _v	I _f =10mA	2 θ 1/2	--	120	--	Deg
Reverse current	V _r =5V	I _r	--	--	10	μA

REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

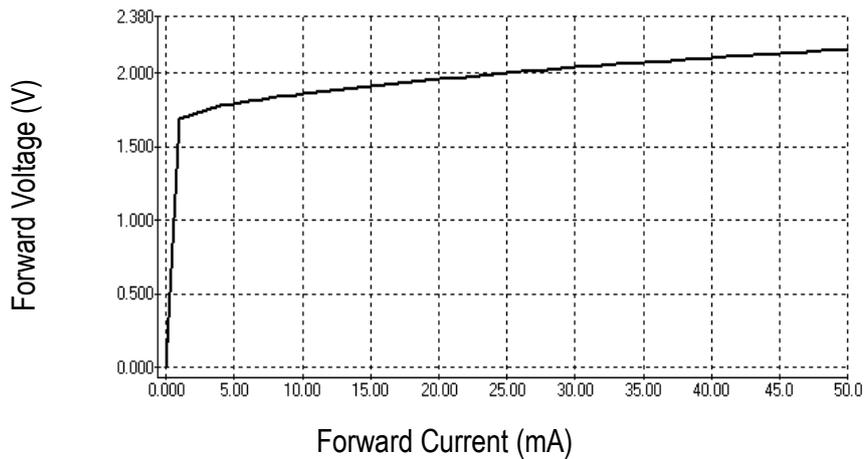
Part Number: GH-RUHB31TK-WPJ

OPTICAL CHARACTERISTIC CURVES

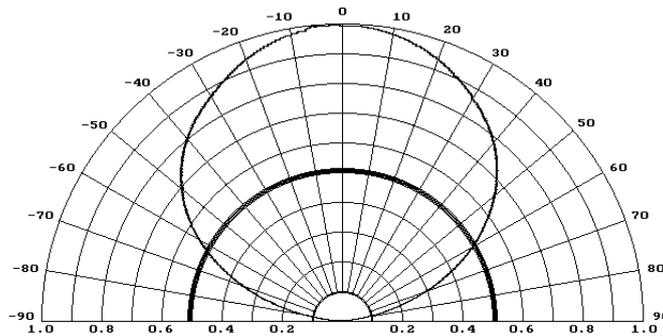
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



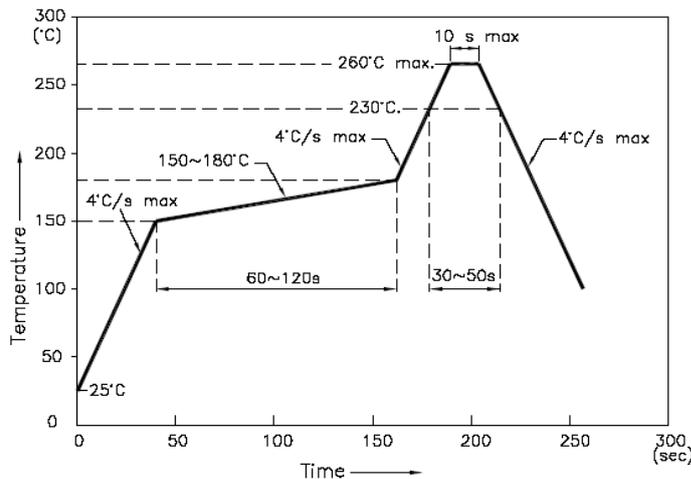
Directive Characteristics



REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

Reflow Profile

■ Reflow Temp/Time



NOTES:

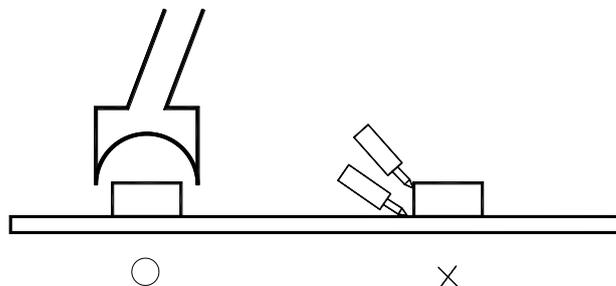
1. We recommend the reflow temperature $245^{\circ}\text{C} (\pm 5^{\circ}\text{C})$. the maximum soldering temperature should be limited to 260°C .
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■ Soldering iron

Basic spec is $\leq 5\text{sec}$ when 260°C . If temperature is higher, time should be shorter ($+10^{\circ}\text{C} \rightarrow -1\text{sec}$). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under 230°C .

■ Rework

1. Customer must finish rework within 5 sec under 260°C .
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.

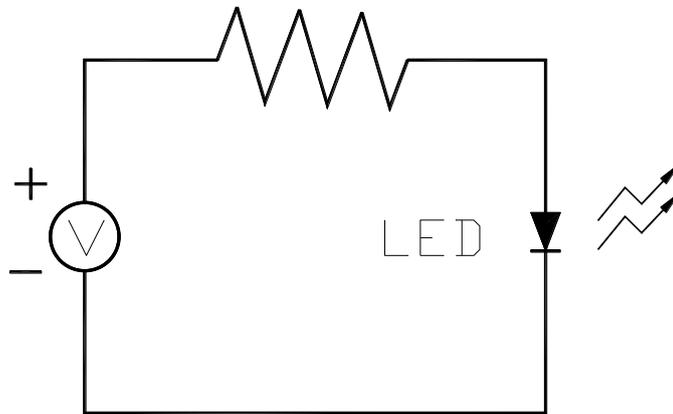


- Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow, solder etc.

REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

Test circuit and handling precautions

■ Test circuit



■ Handling precautions

1. Over-current-proof

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

2. Shelf life in sealed bag: 12 month at $5^{\circ}\text{C}\sim 30^{\circ}\text{C}$ and $< 60\%$ R.H;

3. After the package is Opened:

3.1. It is recommended to baking before the first use:

Baking condition:

a. $60\pm 3^{\circ}\text{C}$ x (36~48hrs) and $< 5\%$ RH, taped reel type ;

b. $110\pm 3^{\circ}\text{C}$ x (8~16hr), bulk type ;

3.2 The products should be used within a week or they should be keeping to stored at ≤ 20 R.H. with zip-lock sealed:

a. It is recommended to baking before soldering when the pack is unsealed after 72hrs ;

b. Baking condition as 3.1 baking condition.

REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

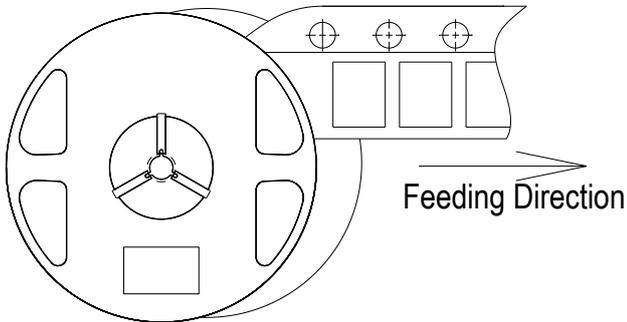
Test items and results of reliability

Type	Test Item	Test Conditions	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	-20°C 30min ↑ ↓ 80°C 30min	100 cycle	0/22
	Thermal Shock	-20°C 15min ↑ ↓ 80°C 15min	100 cycle	0/22
	High Humidity Heat Cycle	30°C ↔ 65°C 90%RH 24hrs/1cycle	10 cycle	0/22
	High Temperature Storage	T _a =80°C	1000 hrs	0/22
	Humidity Heat Storage	T _a =60°C RH=90%	1000 hrs	0/22
	Low Temperature Storage	T _a =-30°C	1000 hrs	0/22
Operation Sequence	Life Test	T _a =25°C I _F =20mA	1000 hrs	0/22
	High Humidity Heat Life Test	60°C RH=90% I _F =10mA	500 hrs	0/22
	Low Temperature Life Test	T _a =-20°C I _F =20mA	1000 hrs	0/22

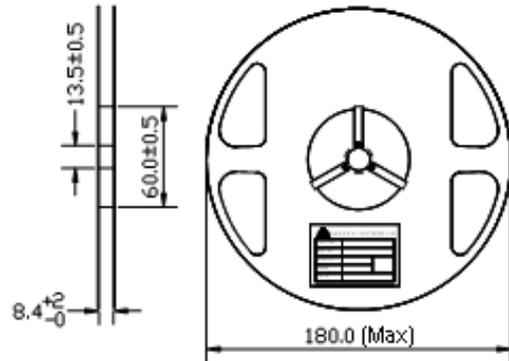
PACKAGING SPECIFICATIONS

2031 Single-Color High Performance SMD Top LEDs Packaging Specifications

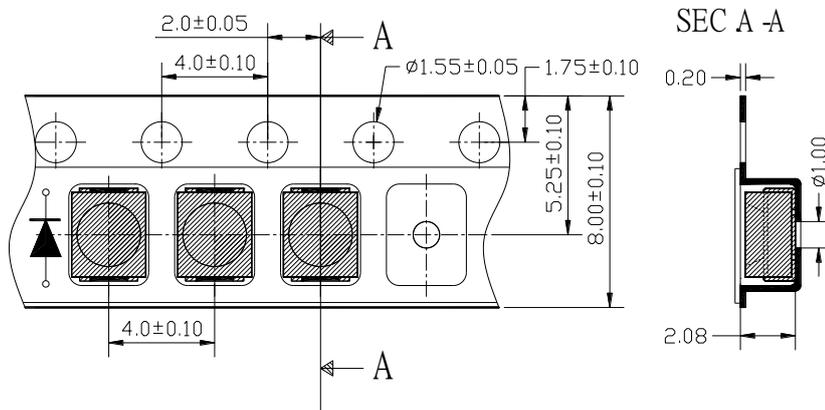
● Feeding Direction



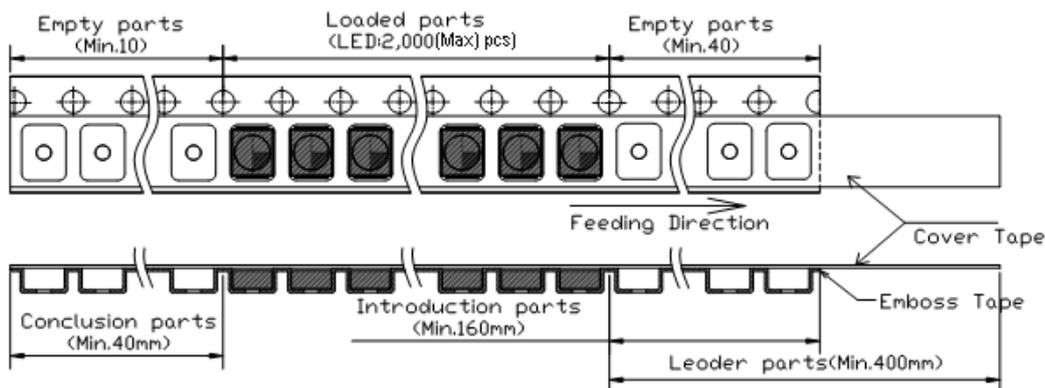
● Dimensions of Reel (Unit: mm)



● Dimensions of Tape (Unit: mm)



● Arrangement of Tape

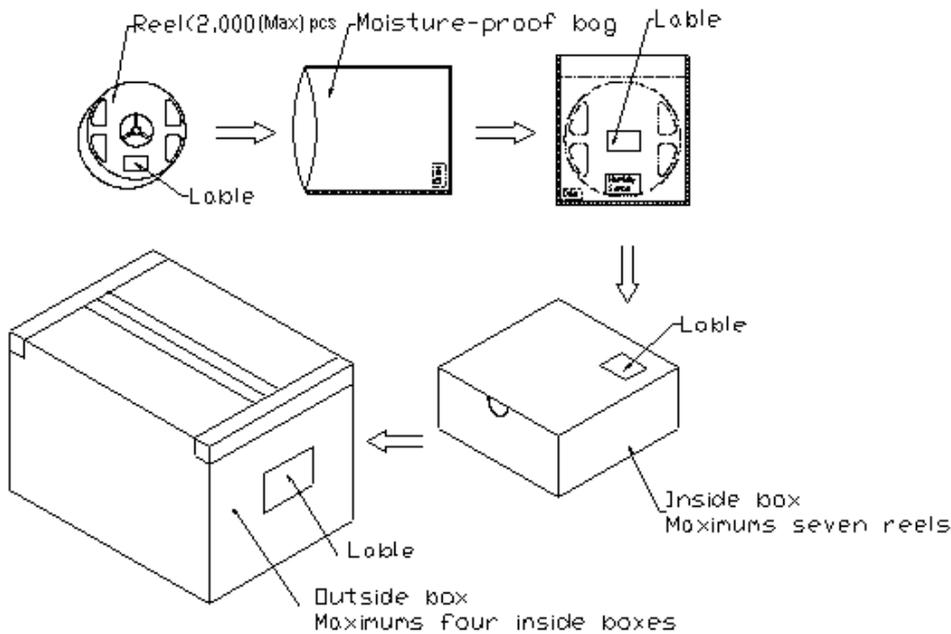


NOTES

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;
4. 2,000(Max)pcs/Reel

2031 Single-Color High Performance SMD Top LEDs Packaging Specifications

● Packaging specifications



NOTES:

Reeled products [numbers of products are 2,000(Max)pcs] packed in a seal off moisture-proof bag along with desiccant and Humidity card one by one, Seven moisture-proof bag of maximums [total maximum number of products are 14,000(Max)pcs] packed in an inside box (size: about 238mm x about 194mm x about 102mm) and four inside boxes of maximums are put in the outside box (size: about 410mm x about 254mm x about 229mm) Together with buffer material, and it is packed. (Part 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 it to three steps.

REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

Part Number: GH-RUHB31TK-WPJ

Forward Voltage Rank Combination (IF=50mA)

Rank	Min.	Max.	Unit
□	1.9	2.9	V

Luminous Intensity Rank Combination (IF=50mA)

Rank	Min.	Max.	Unit
J	100	125	mcd
K	125	160	
L	160	200	
M	200	250	
N	250	320	

Dominant wavelength Rank Combination (IF=50mA)

Rank	Min.	Max.	Unit
v	630	635	nm
w	635	650	

Group Name on Label (Example DATA: □Lv 50)

DATA: □Lv 50	Vf(V)	Iv (mcd)	λ d (nm)	Test Condition
□→L→v→50	1.9~2.9	160~200	630~635	IF=50mA

* NOTE:

1. The tolerance of luminous intensity (Iv) is $\pm 15\%$.
2. The tolerance of dominant wavelength is $\pm 1\text{nm}$.
3. This specification is preliminary.