Data sheet

Part number : BRGB131CWSE-10-TR

Package	SMD Top view package, multicolor LED Outer dimension 3 x 2.8 x 0.7mm (L x W x H)
Product features	・A Zener diode is attached to every RGB LED die (inside the LED package). ・Thin type ・Operating temperature -40 to +85℃ ・Storage temperature -40 to +100℃ ・Lead-free soldering compatible ・ RoHS : 2011/65/EU, (EU)2015/863 compliant

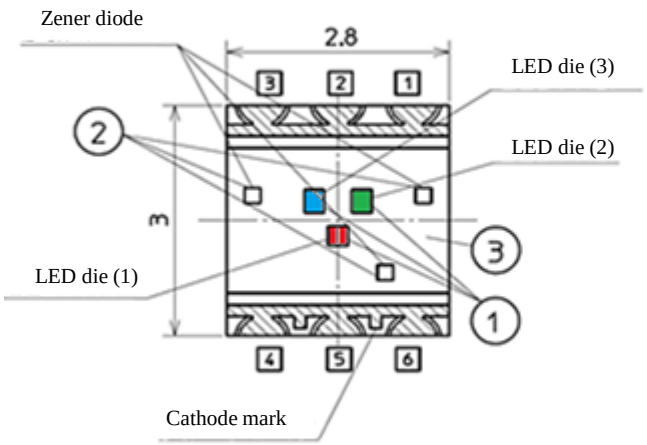
Recommended applications

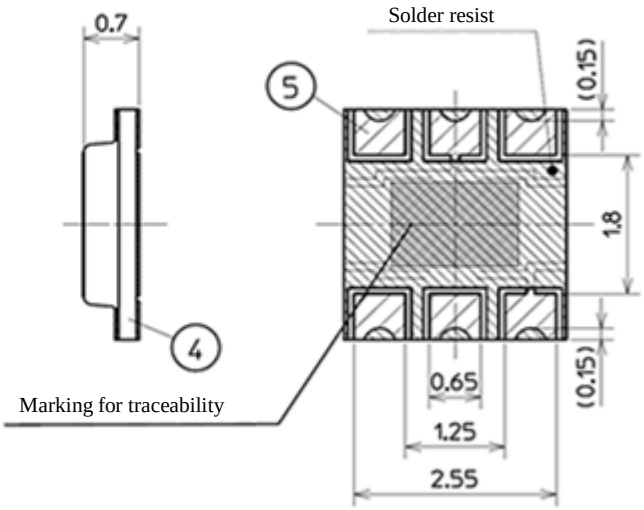
・Various operation panels, decorative lighting
・Home appliances, office automation, factory automation and other general purpose indicators, etc.

Outline dimensions

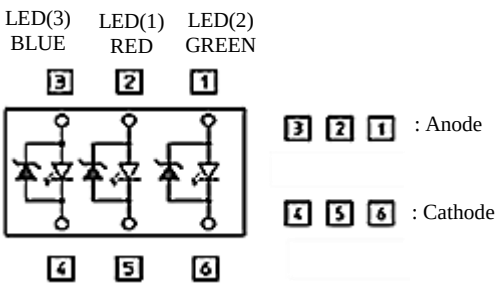
BRGB131CWSE-10-TR

Unit : mm
Weight : 3.40mg
Tolerance : ±0.1



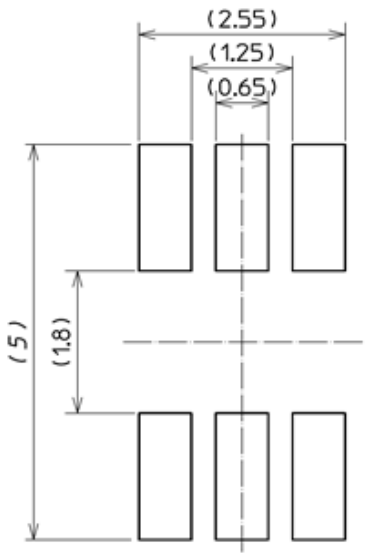


Inside circuit



No.	Part name	Material	Qty.
①	LED die	AlGaInP, InGaN	3
②	Protection diode	Si	2
③	Resin	Silicone resin	1
④	Substrate	Glass fabrics	1
⑤	Electrode	Ag plating	6

Recommended soldering pattern



Unit : mm

1. The product height dimensions do not include the dimensions of the cut burrs on the substrate and electrodes.
2. When placing wiring patterns between soldering patterns, care should be taken to avoid short-circuiting the electrodes of the product.

Specifications BRGB131CWSE-10-TR

【Product overview】

	LED die 1	LED die 2	LED die 3
Die material	AlGaInP	InGaN	InGaN
Emitted color	Red	Green	Blue
Resin color	Milky white		

【Absolute maximum ratings】

Ta=25℃

Item		Symbol	LED die 1 Red	LED die 2 Green	LED die 3 Blue	Unit	
Power Dissipation		P_d	90	126	126	mW	
Total Value of Power Dissipation		P_d	255			mW	Note1
Forward Current (1 LED lit)		I_F	30	30	30	mA	
Forward Current (2 or 3 LEDs lit)		I_F	30	25	20	mA	
Repetitive Peak Forward Current (1 or 2 or 3 LEDs lit)		I_{FRM}	100	100	100	mA	Note2
Forward current reduction rate 【Ts=over 60℃】 Derate linearly from 60℃	DC (1 LED lit)	$\triangle I_F$	0.750	0.750	0.750	mA/℃	
	DC (2 or 3 LEDs lit)		0.750	0.625	0.500	mA/℃	
	Pulse (1 LED lit)	$\triangle I_{FRM}$	2.50	2.50	2.50	mA/℃	
Reverse Current		I_R	-	70	70	mA	
Operating Temperature		T_{opr}	-40 to +85			℃	
Storage Temperature		T_{stg}	-40 to +100			℃	

Note1 This shall be the maximum permissible power dissipation when the lights are on at the same time in white three colors at the same time).

Ts=Please refer to the technical data for the total permissible losses above 60°C.

Note2 I_{FRM} conditions：Pulse width ≦ 1ms, Duty ≦ 1/20

Specifications BRGB131CWSE-10-TR

【Electro-optical characteristics】

LED die 1 Red (Ta=25℃)

Item	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	V_F	I_F = 26mA	1.6	2.1	2.8	V
Luminous Intensity	I_V	I_F = 26mA	-	850	-	mcd
Dominant Wavelength	λd	I_F = 26mA	-	621	-	nm

LED die 2 Green (Ta=25℃)

Item	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	V_F	I_F = 18mA	2.1	2.7	3.5	V
Luminous Intensity	I_V	I_F = 18mA	-	2,000	-	mcd
Dominant Wavelength	Λd	I_F = 18mA	-	527	-	nm

LED die 3 Blue (Ta=25℃)

Item	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	V_F	I_F = 14mA	2.4	3.0	3.8	V
Luminous Intensity	I_V	I_F = 14mA	-	250	-	mcd
Dominant Wavelength	λd	I_F = 14mA	-	467	-	nm

All LED lighted (Ta=25℃)

Item	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Total luminous intensity	I_V	Red : I_F=26mA Green : $_F$=18mA Blue : I_F=14mA	-	3,000	-	mcd
Chromaticity coordinates	x		-	0.300	-	-
	y		-	0.320	-	-

Note.3

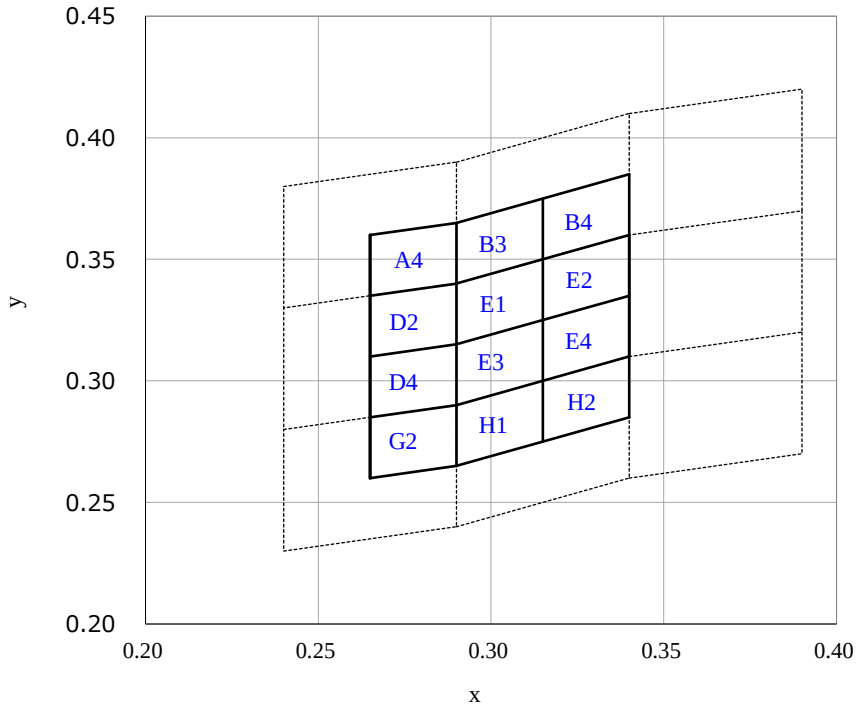
Note 3 Please refer to page 5, sorting chart for chromaticity coordinates.

Specifications

BRGB131CWSE-10-TR

【Ranks】

The LEDs' classification of the luminous intensity and dominant wavelength is as follows:

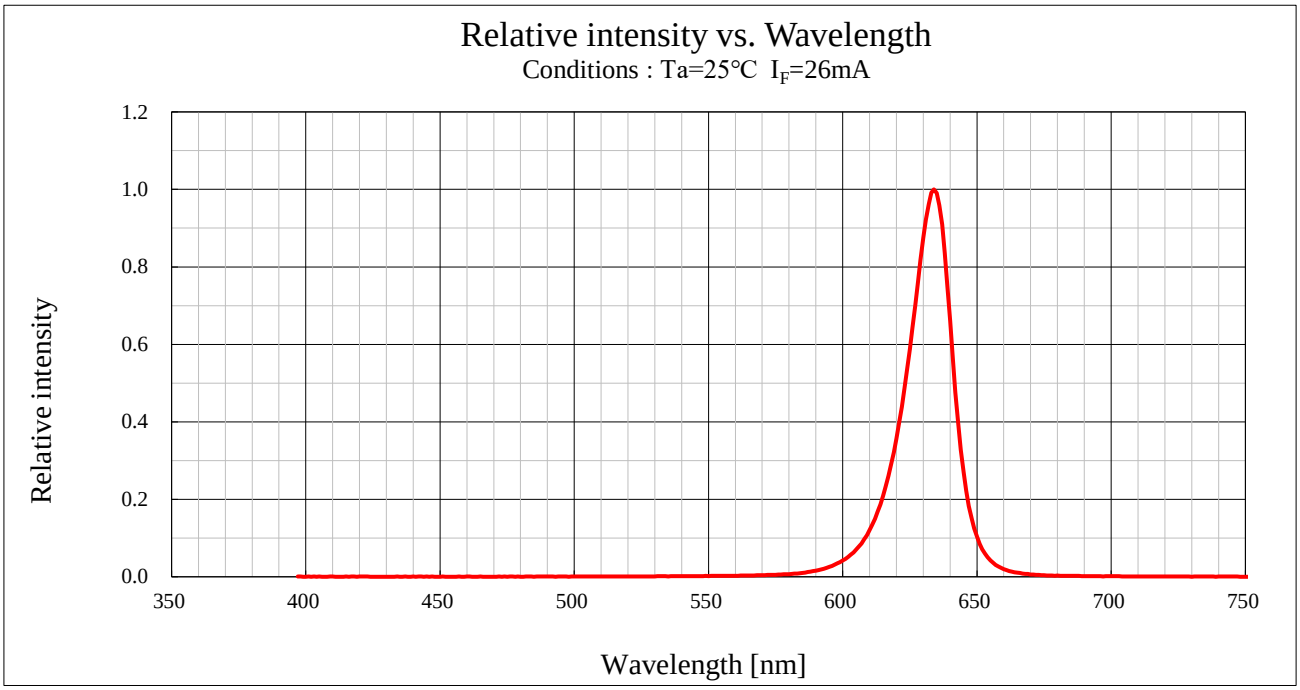


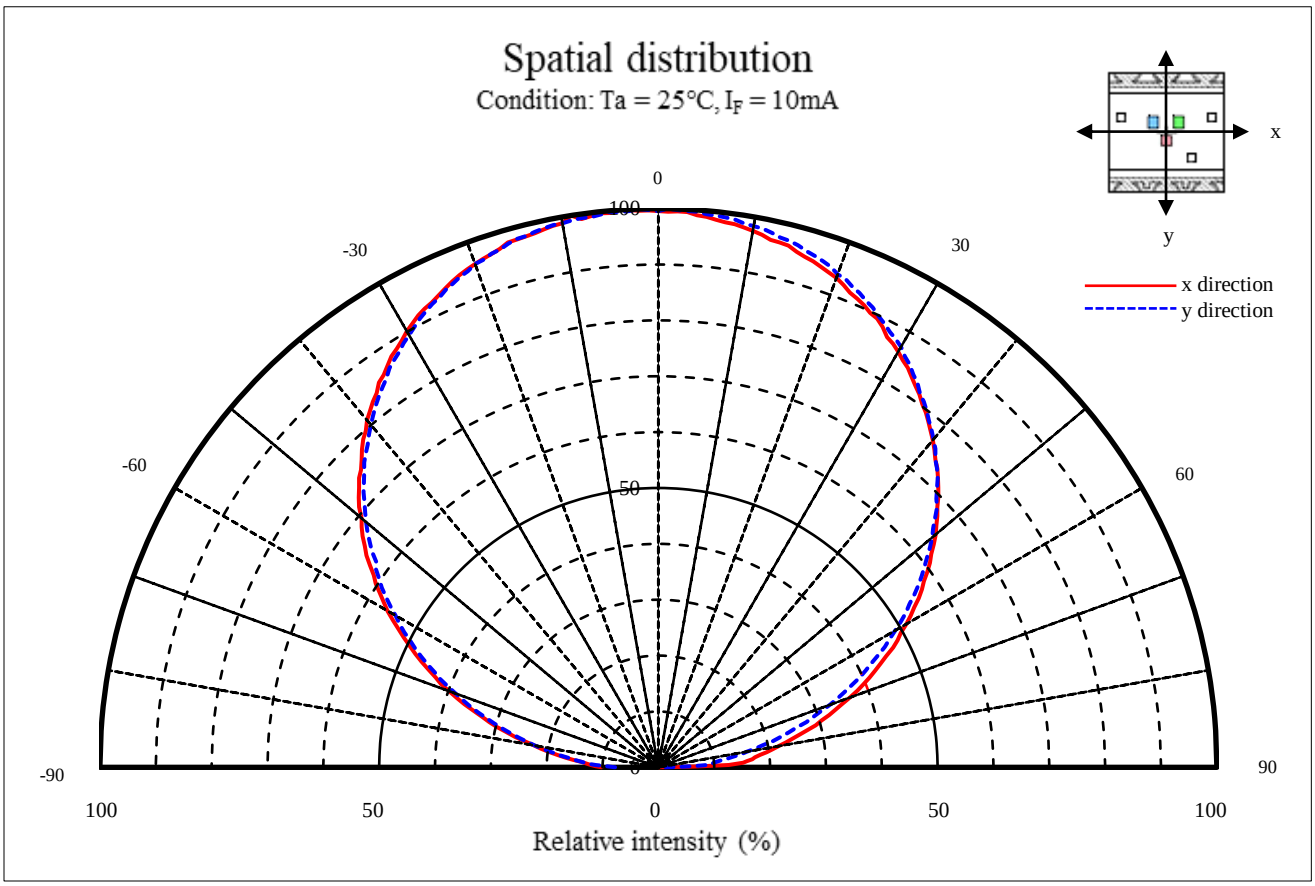
Rank	Left down		Left up		Right up		Right down		条件
	x	y	x	y	x	y	x	y	
A4	0.265	0.335	0.265	0.360	0.290	0.365	0.290	0.340	
B3	0.290	0.340	0.290	0.365	0.315	0.375	0.315	0.350	
B4	0.315	0.350	0.315	0.375	0.340	0.385	0.340	0.360	
D2	0.265	0.310	0.265	0.335	0.290	0.340	0.290	0.315	Red
D4	0.265	0.285	0.265	0.310	0.290	0.315	0.290	0.290	I_F=26mA
E1	0.290	0.315	0.290	0.340	0.315	0.350	0.315	0.325	Green
E2	0.315	0.325	0.315	0.350	0.340	0.360	0.340	0.335	I_F=18mA
E3	0.290	0.290	0.290	0.315	0.315	0.325	0.315	0.300	Blue
E4	0.315	0.300	0.315	0.325	0.340	0.335	0.340	0.310	I_F=14mA
G2	0.265	0.260	0.265	0.285	0.290	0.290	0.290	0.265	
H1	0.290	0.265	0.290	0.290	0.315	0.300	0.315	0.275	
H2	0.315	0.275	0.315	0.300	0.340	0.310	0.340	0.285	

Notes : Above the table of Chromaticity Coordinates Bins are range of actual measuring value at the production line.（Tolerance ：±0.02）

Technical Data Red

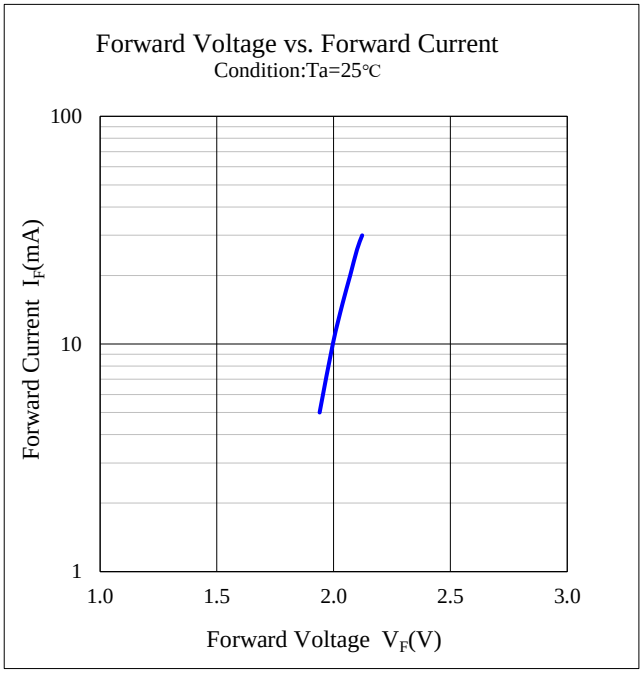
BRGB131CWSE-10-TR

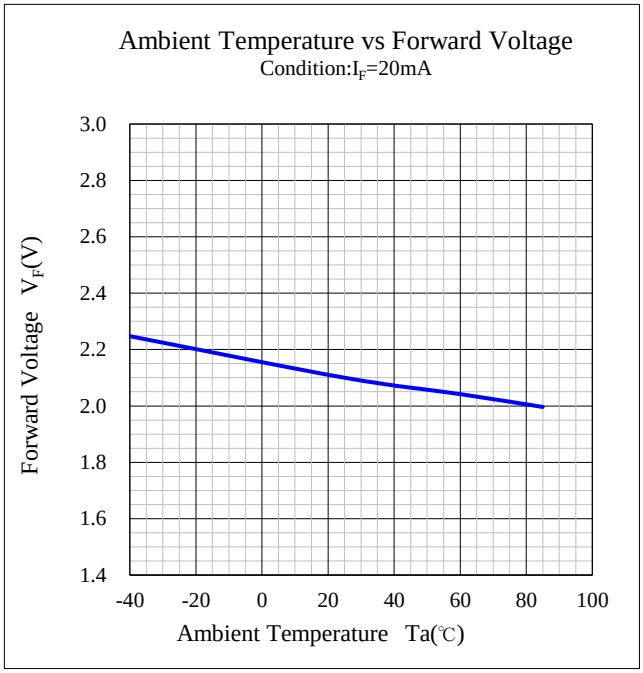


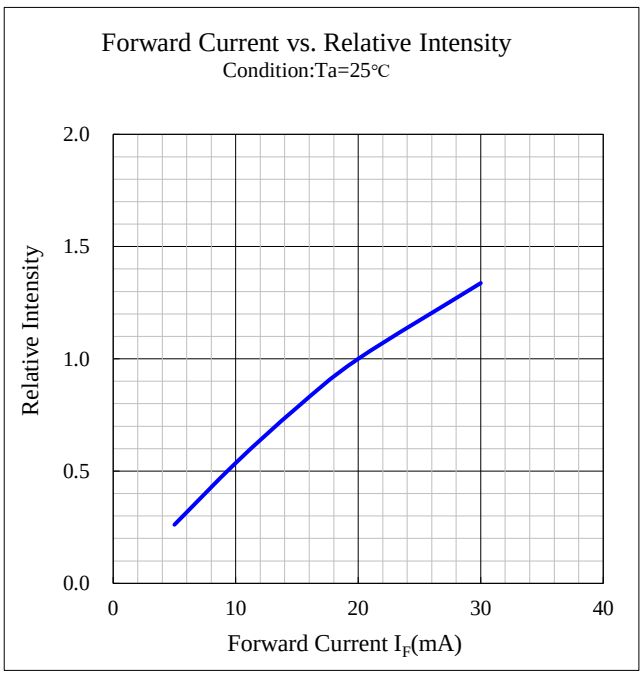


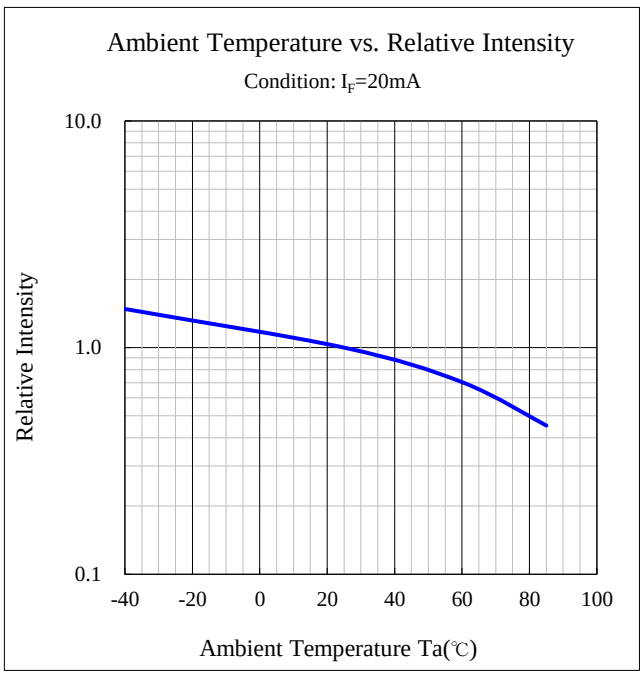
Technical Data Red

BRGB131CWSE-10-TR









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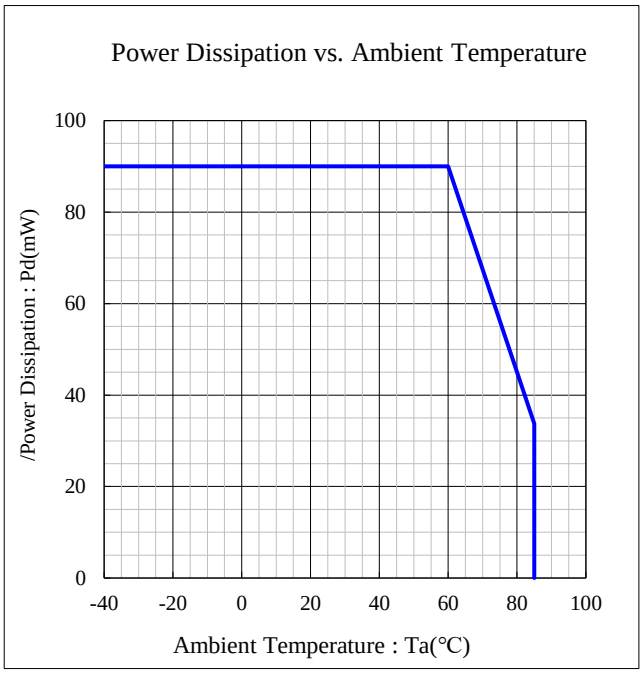

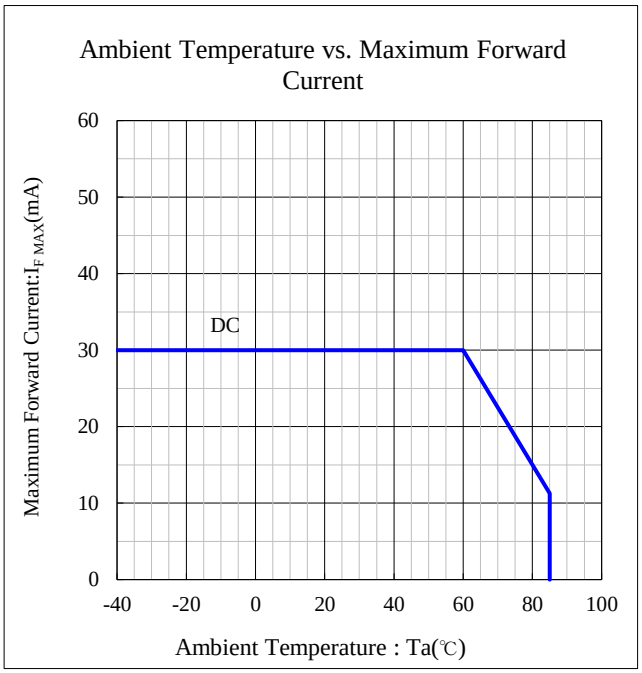

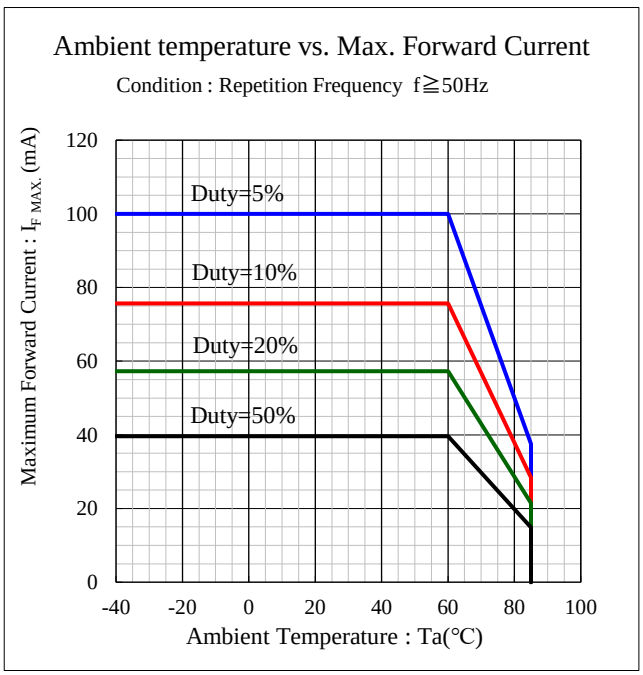

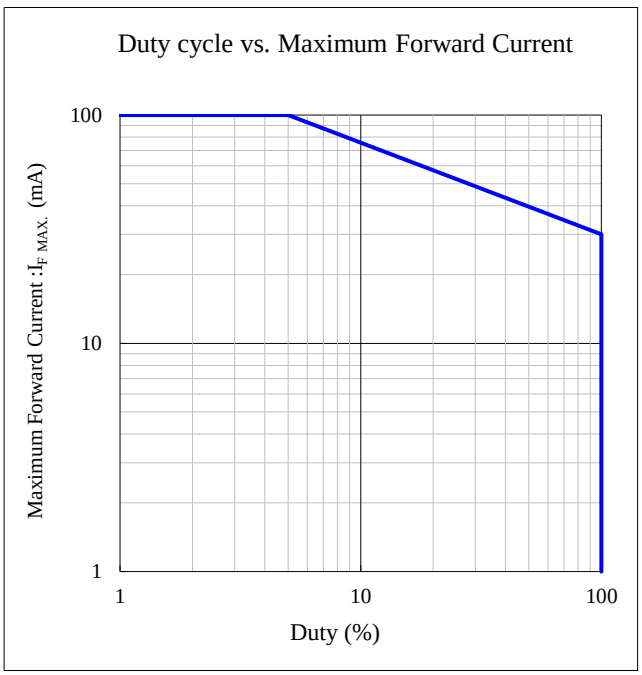

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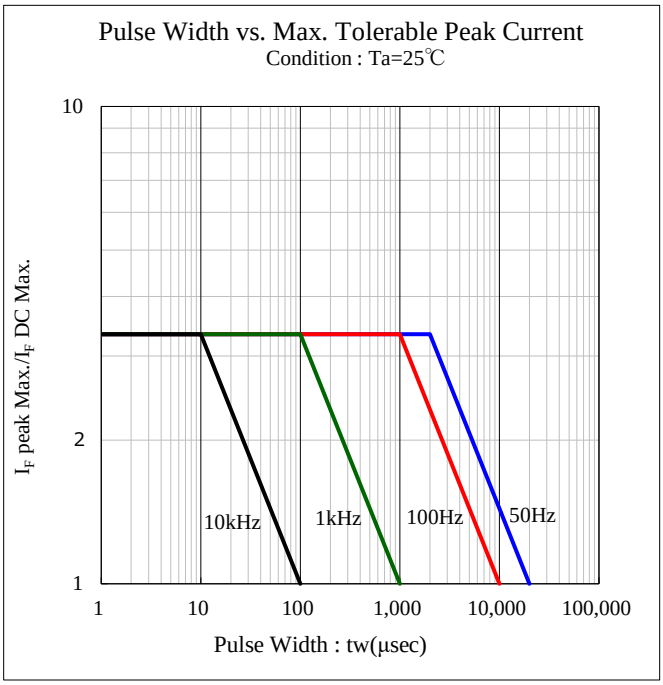
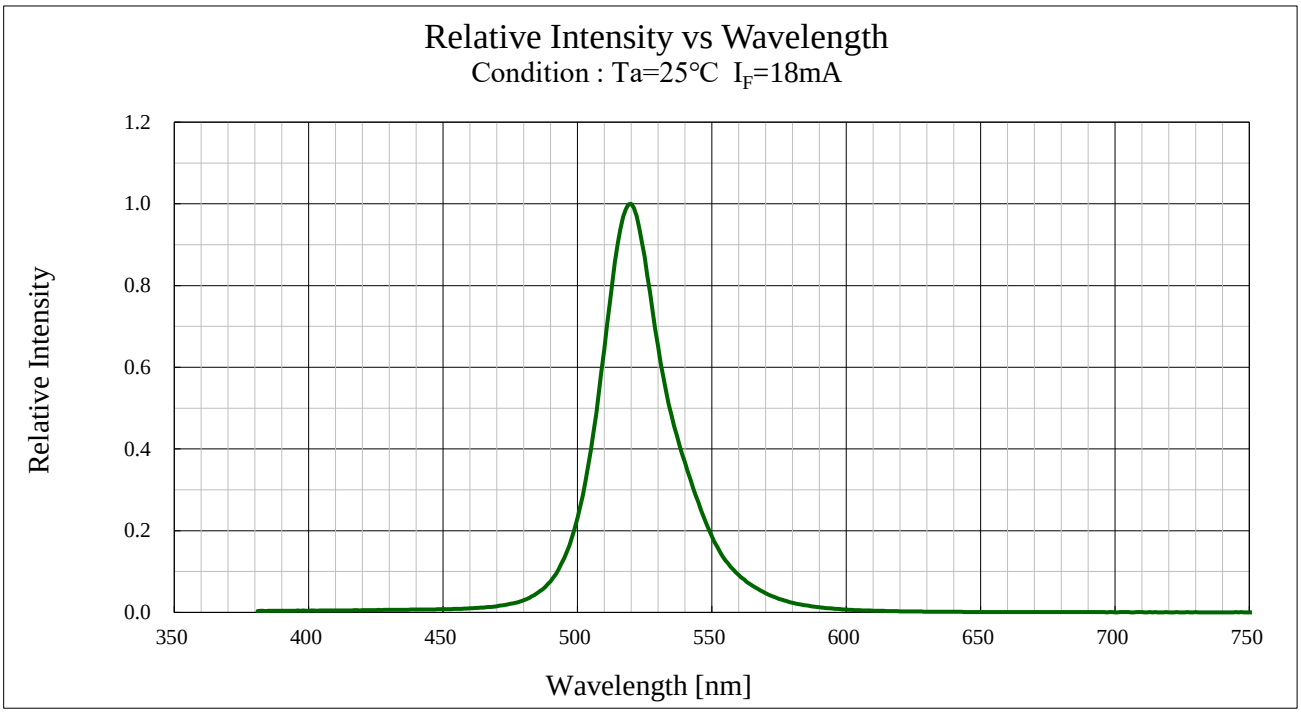
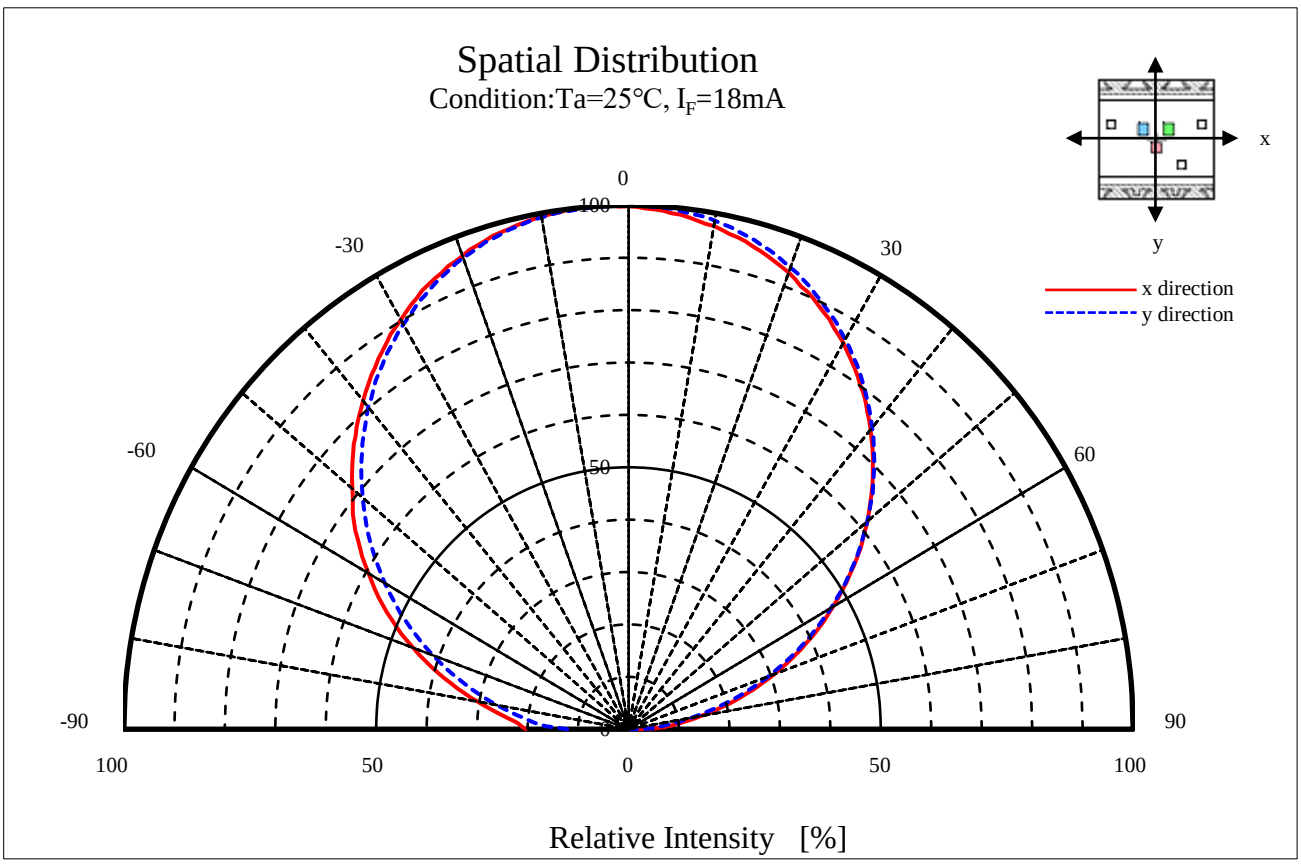


Technical Data Green BRGB131CWSE-10-TR





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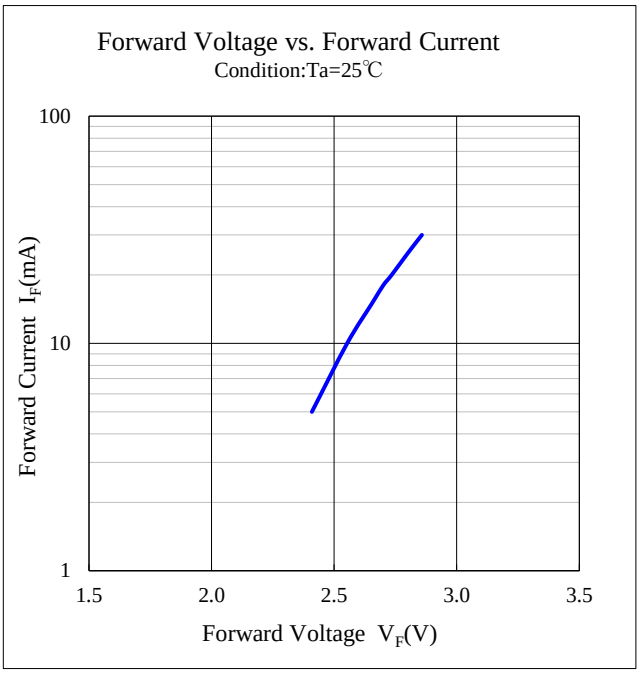

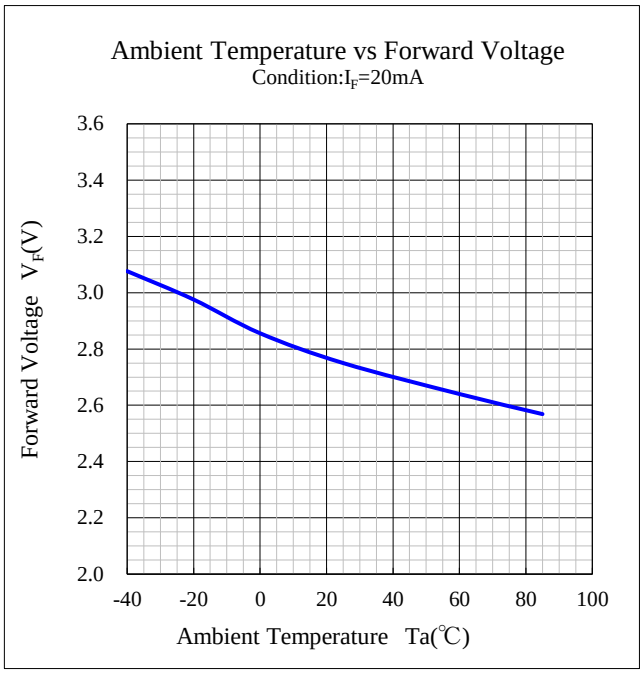

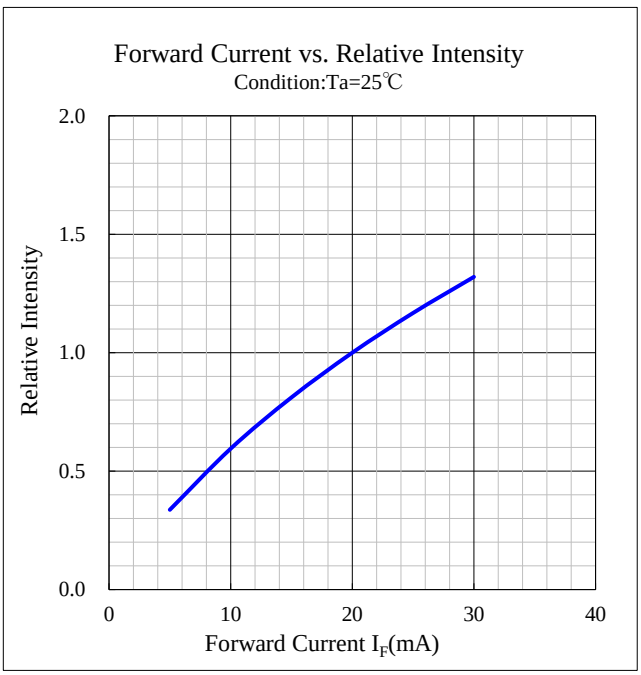

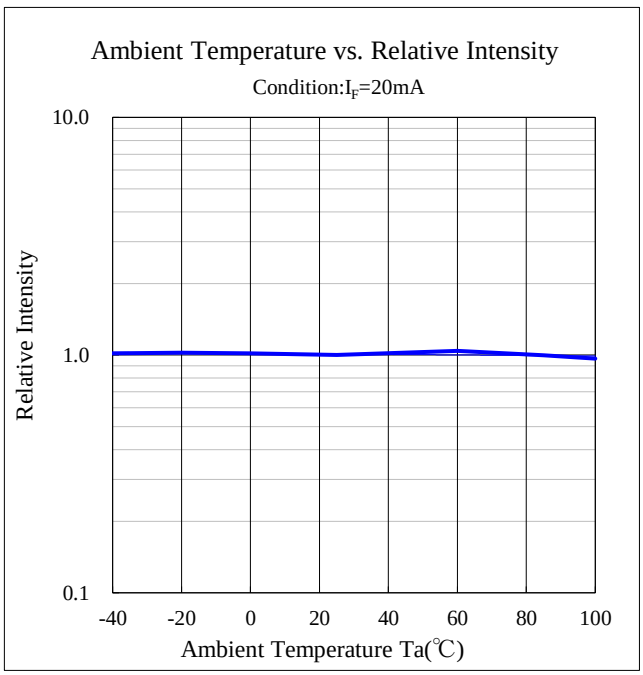

Technical Data Green

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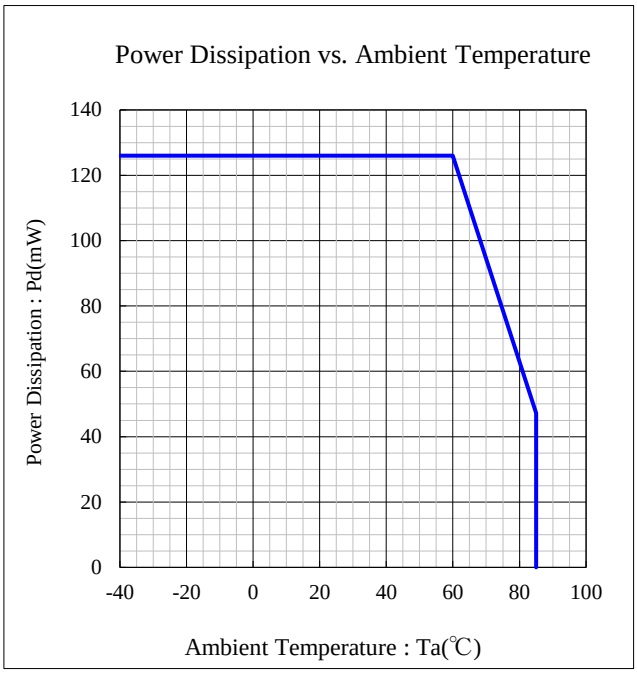

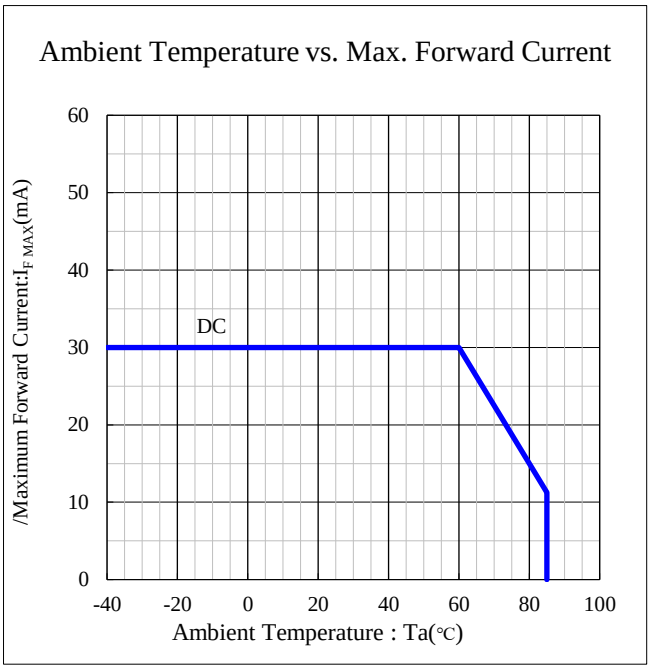

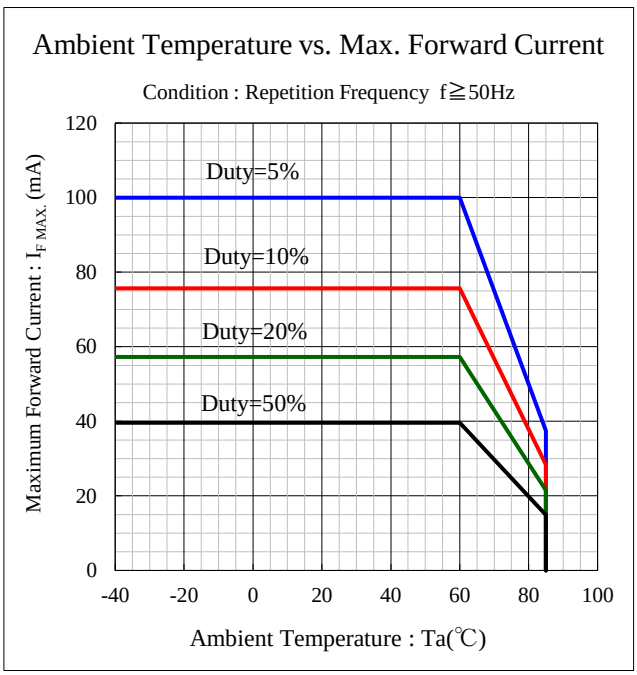

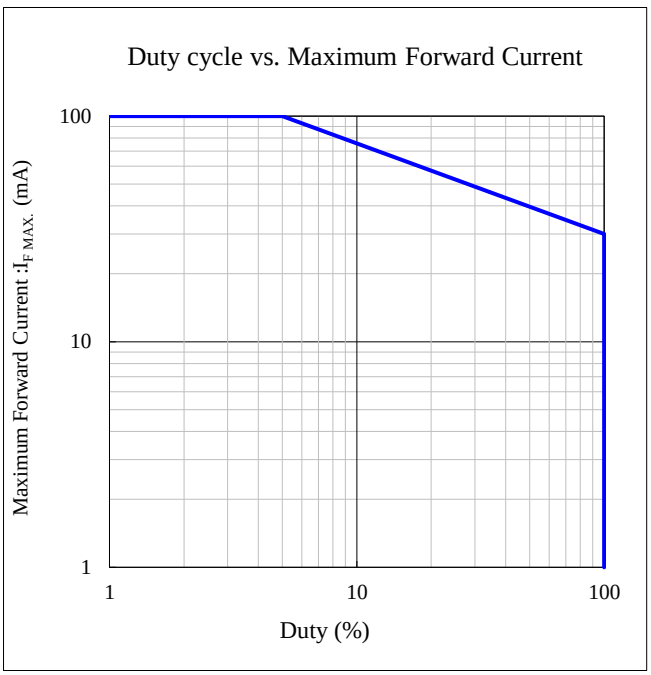

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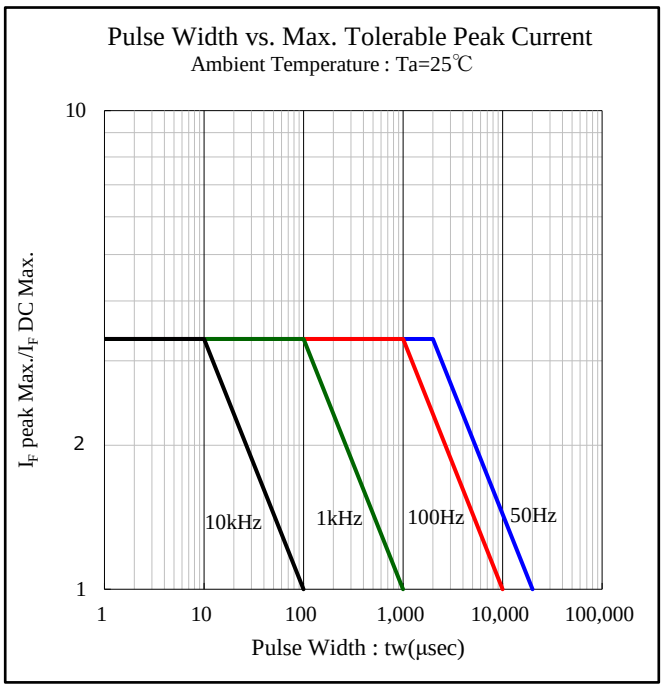

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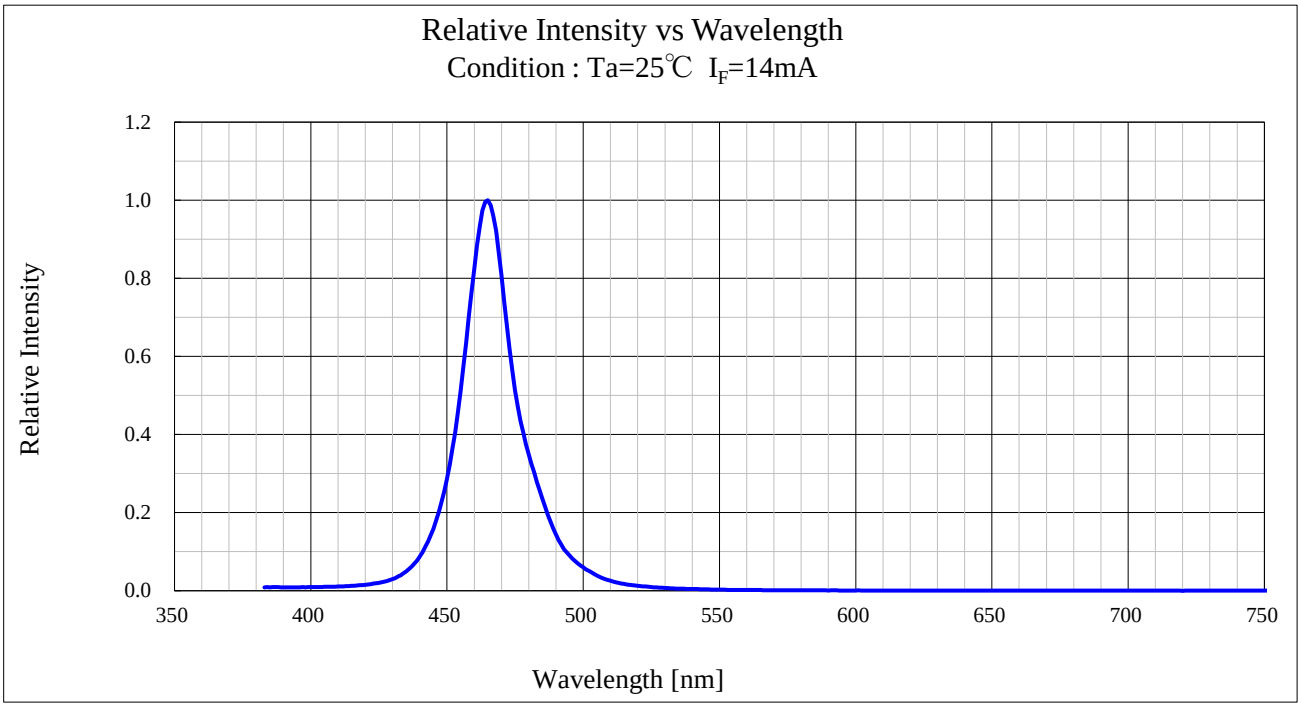

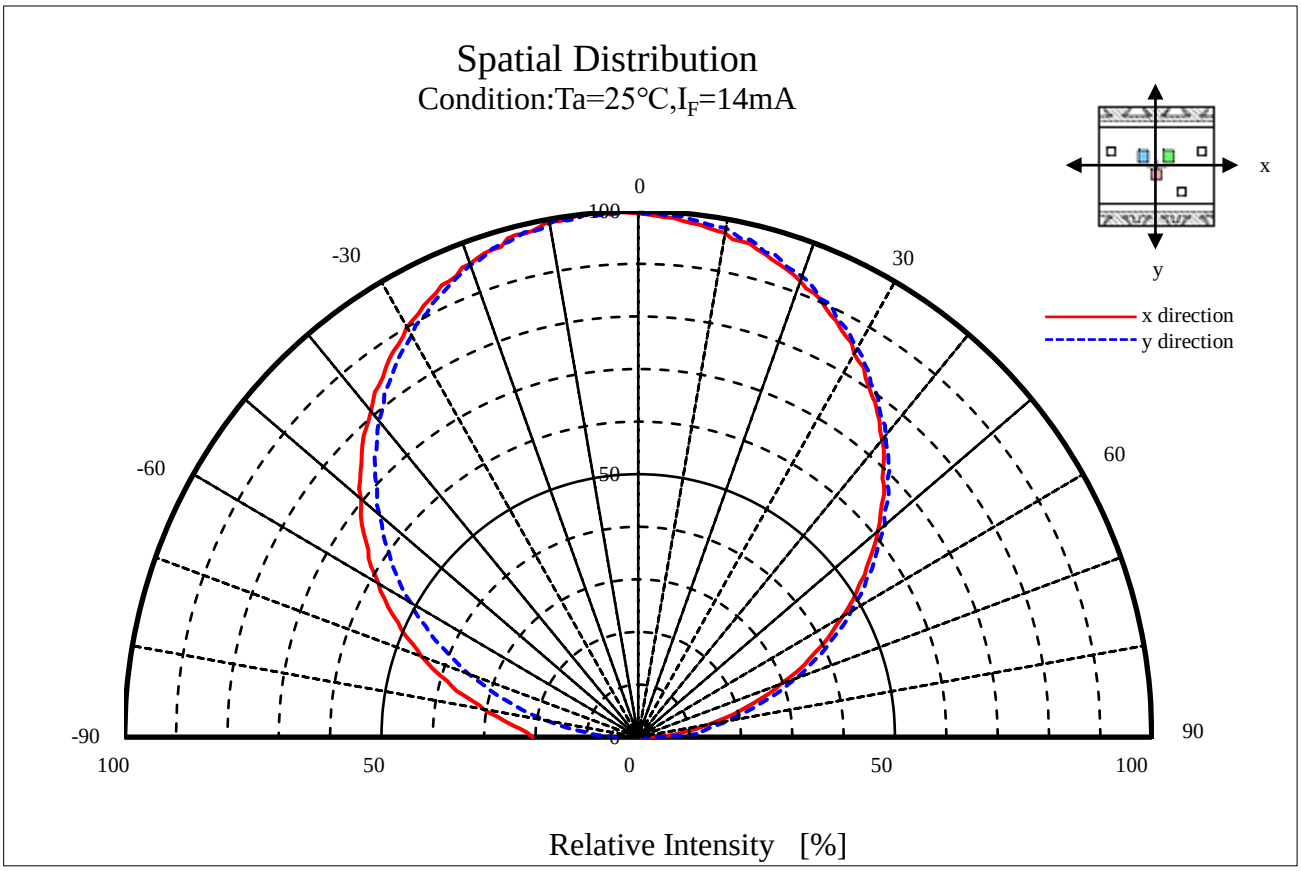

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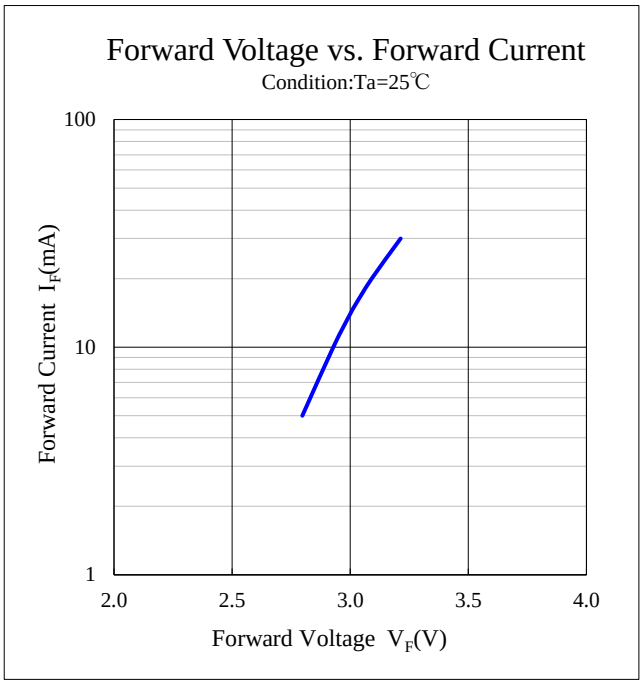

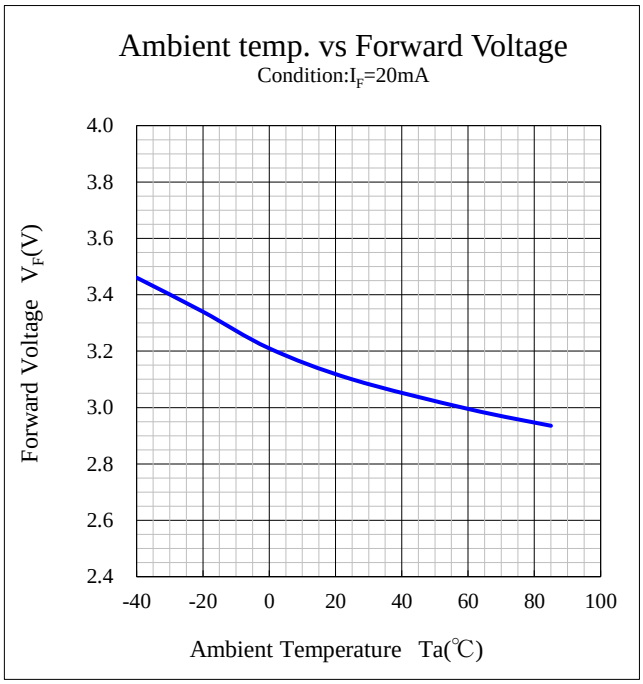

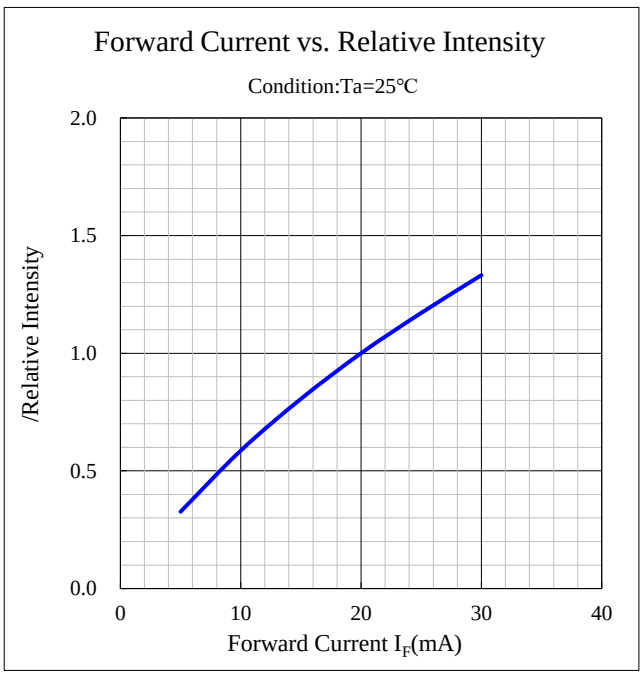

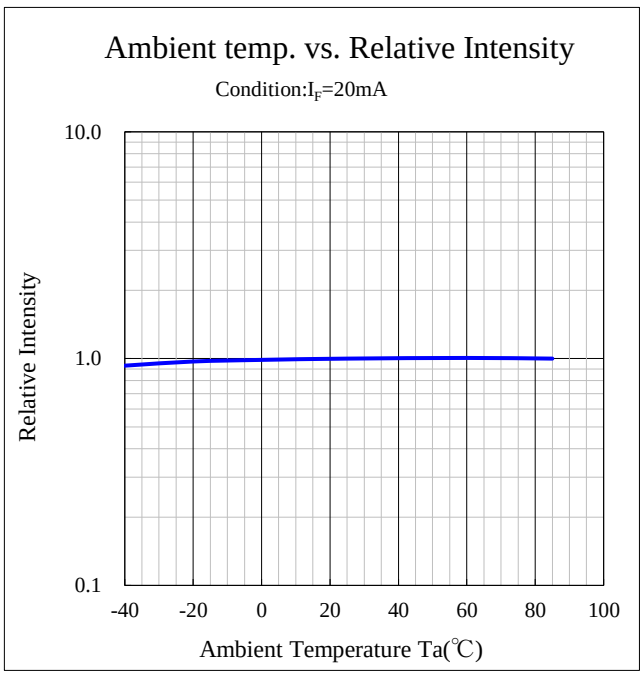

Technical Data Blue

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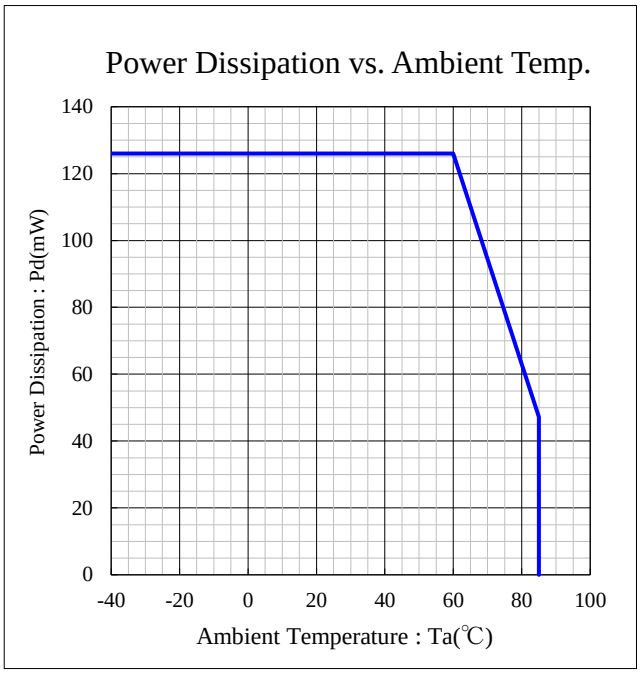

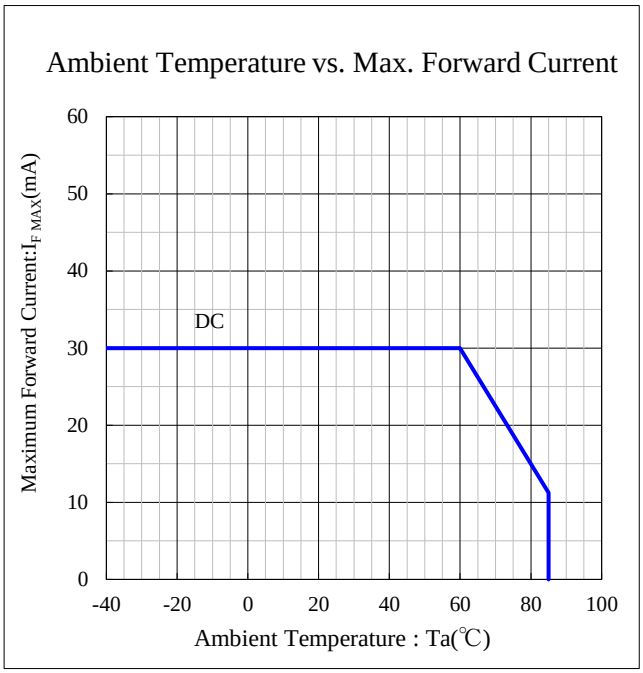

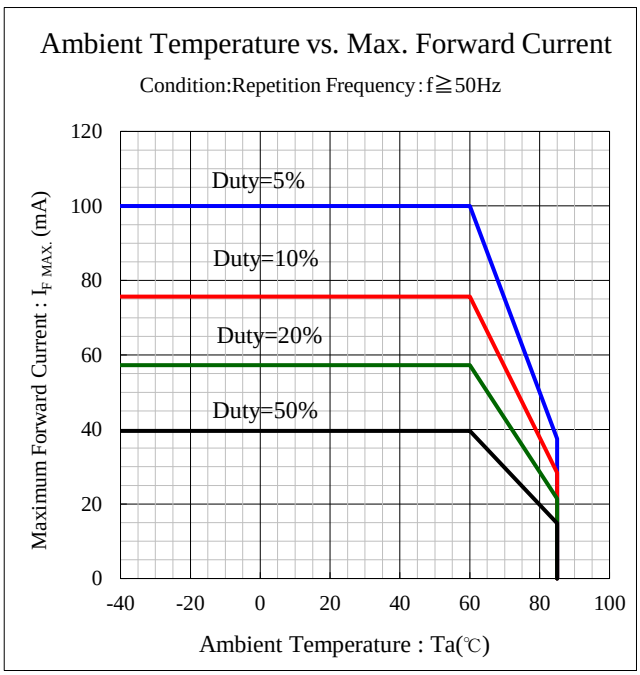

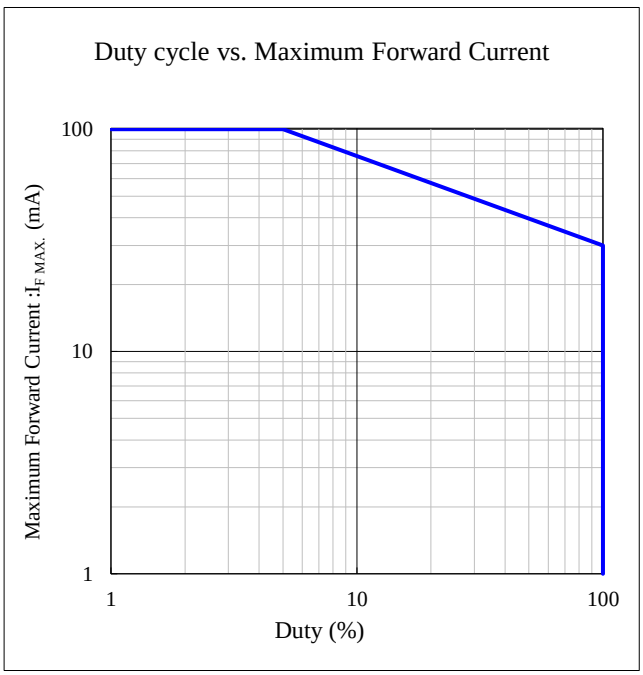

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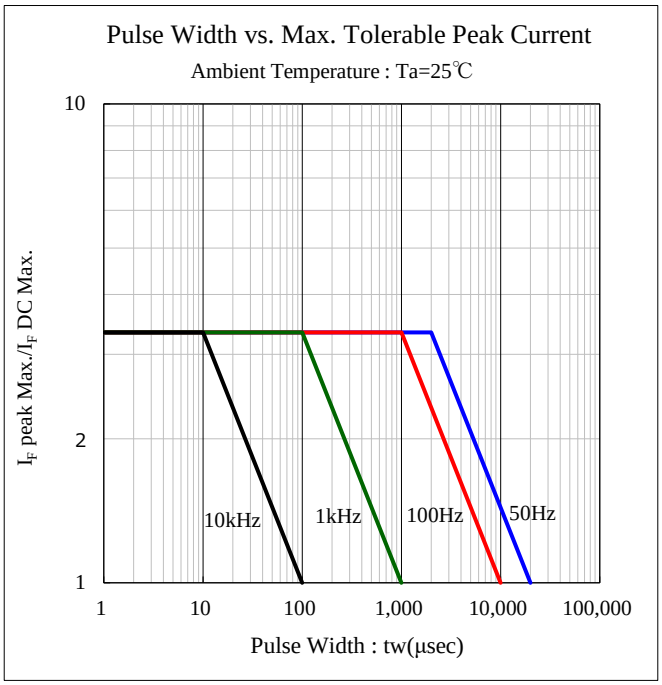


Soldering condition

BRGB131CWSE-10-TR

【Soldering Precaution】

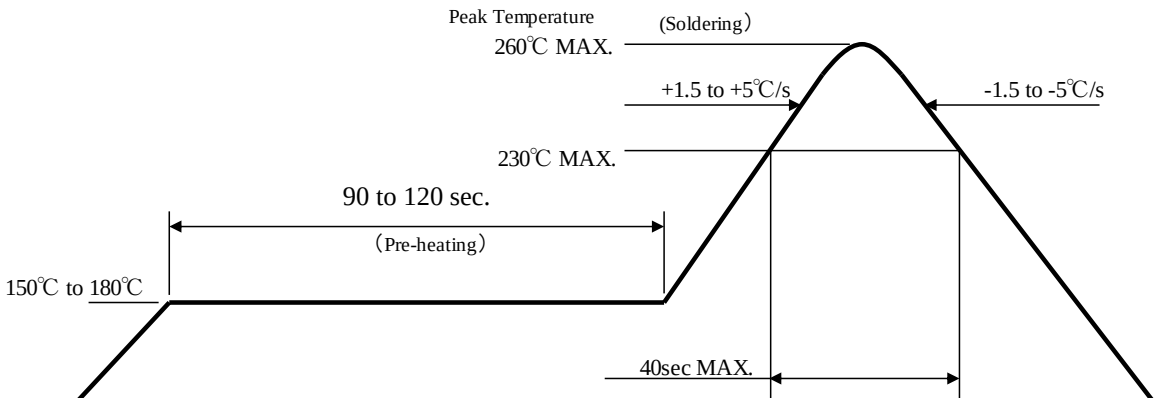
1. Heat stress during soldering will influence the reliability of LEDs, however that effect will vary on heating method. Also, if components of varying shape are soldered together, it is recommended to set the soldering pad temperature according to the component most vulnerable to heat (e.g., surface mount LED).

2. LED parts including the resin are not stable immediately after soldering (when they are not at room temperature), any mechanical stress may cause damage to the product. Please avoid such stress after soldering, especially stacking of the boards which may cause the boards to warp and any other types of friction with hard materials.

3. High hardness silicone resin is used for this product's lenz, but the silicone resin has the characteristic that softens at high temperature. There is a possibility of causing the transformation, the breakage, and peeling off of the lens when it touches the resin lens at the high temperature such as immediately after soldering.

4. Recommended temperature profile for the Reflow soldering is listed as the temperature on the top surface. This is due to the fact that temperature distribution varies on heating method, PCB material, other components in the assembly, and concentration of the parts mounted. Please do not repeat the heating process in Reflow process more than twice.

【Recommended Reflow Soldering Condition 】



Note 1 Temperature profile for the reflow should be set to the surface temperature of resin which is on the top of LED. This should be the maximum temperature for soldering. Lowering the heating temperature and decreasing heating time is very effective in achieving higher reliability.

Note 2 The reflow soldering process should be done up to 2 times Max. When second process is performed, interval between first and second process should be as short as possible to prevent absorption of moisture to resin of LED. The second soldering process should not be done until LEDs have returned to room temperature (by nature-cooling) after first soldering process.

Soldering condition

BRGB131CWSE-10-TR

5. If soldering manually, the peak temperature changes according to the size of land and the shape of soldering iron tip. Therefore, please confirm there is no problem before usage. Also, Stanley recommends using a soldering iron equipped with temperature control and the peak temperature to be lowered.
   During the actual soldering process, make sure that the soldering iron never touches the LED itself, and avoid the LED's electrode temperature reaching above the temperature of the solder pad.
   All repairs must be performed only once in the same spot, and please avoid reusing components.

6. In soldering process, immediately after iron tip is cleaned, please make sure that the soldering iron reaches the appropriate temperature, then use it. Also, please avoid applying any types of pressure to the soldered components before the solder is cooling and hardening, as it may deteriorate solder performance and solder quality.

【Recommended manual soldering condition】

Temperature of iron tip	350℃ max.
Soldering duration, time	3sec. max., 1 time

6. When using adhesive material for tentative fixatives, thermosetting resin or Ultraviolet radiation(UV) setting resin with heat shall be recommended.
   《Curing condition, Temperature:150℃ max. / Time:120sec.max.》

7. Flow soldering (dip soldering) is not guaranteed for this product.

8. Please confirm in advance there is no problem by assessment on your side if cleaning process is necessary.
   We can not accept any quality issues caused by the cleaning process.
   As this product uses the low hardness silicone resin for the lens, please avoid cleaning to give pressure on the surface of the resin.
   Please make sure ultrasonic cleaning is not recommended for this product as well.
   We will recommend isopropyl alcohol as a solvent used for cleaning.
   Some chemicals, including Freon substitute detergent could corrode the lens or the casing surface, which cause discoloration, cloud, crack and so on.
   Please review the reference chart below for cleaning. If water is used to clean (including the final cleaning process), please use pure water (not tap water), and completely dry the component before using.

Cleaning agents	Recommended / Not recommended
Isopropyl Alcohol	✓ Recommended
Trichloroethylene	x Not recommended
Chlorothene	x Not recommended
Acetone	x Not recommended
Thinner	x Not recommended

Handling precautions BRGB131CWSE-10-TR

【For electrostatic discharge (ESD)】

LED with an InGaN die is sensitive to voltage surges generated by On/Off status change and friction with synthetic materials, which may cause severe damage to the die or undermine its reliability. Damaged products may experience conditions such as extremely high reverse voltage, decrease of forward rise voltage, deterioration in optical characteristics.
Stanley InGaN products are packed with anti-static components. However, following precautions must be taken into account upon product shipment.

1. Electrification/static electricity protection

In order to avoid product (die) damage from static electricity caused by unprotected handling by operator and other charged materials coming in contact with the product, Stanley recommends taking the following precautions.

① Do not place electrified non-conductive materials near the LED product.
Avoid LED products from coming into contact with metallic materials.(Should the metallic material be electrified , the sudden surge voltage will most likely damage the product.)

② Avoid a working process which may cause the LED product to rub against other materials.

③ Install ground wires for any equipment, where they can be installed, with measures to avoid static electricity surges.

④ Prepare a ESD protective area by placing a Conductive Mattress (1MΩ MAX.) and Ionizer to remove any static electricity.

⑤ Operators should wear a protective wrist-strap.

⑥ Operators should wear conductive work-clothes and shoes.

⑦ To handle the products directly, Stanley recommends the use of ceramic, and not metallic, tweezers.

2. Working environment

① A dry environment is more likely to cause static electricity. Although a dry environment is ideal for storage state of LED products, Stanley recommends an environment with approximately 50% humidity after the soldering process.

② Recommended static electricity level in the working environment is less than 150V, which is the same value as Integrated Circuits (which are sensitive to static electricity).

Handling precautions

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【Handling precautions for product mounting】

＜Recommendation＞

Mounting load: 10N or less
The load applied to the product should be kept below 10N.

※ Please note that the housing may be destroyed by the load of the mounter nozzle during mounting. Please adjust the load, nozzle pick-up position, nozzle diameter, etc. before use.
Please adjust the load, nozzle pick-up position and nozzle diameter before use.
Please adjust the conditions in advance.

※ Do not apply pressure to the lens, not only with the nozzle, but also with all other instruments, tools and parts. Do not apply pressure to the lens area.

Handling precautions

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【Other precautions】

1. The products are designed to achieve higher performance reliability, however, they can be influenced by usage conditions.

2. Absolute maximum ratings are set to prevent LED products from breaking due to extreme stress (temperature, current, voltage, etc.). These ratings must never be overrun even for a moment.

3. To achieve the highest performance reliability, it is necessary to take into account, factors such as forward voltage adjusted to the usage temperature condition, derating of the power consumption, and other variable factors.

4. Please insert straight protective resistors into the circuit in order to stabilize LED operation and to prevent the device from overheating.

5. Please avoid to stick foreign materials because molding resin in the products has adhesiveness.
   And please don't touch lens portion , so it cause the wire open circuit etc. when the stress hangs to the lens portion.

6. Please check the actual performance in the assembly because the Specification Sheets are described for LED device only.

7. Please refrain from looking directly at the light source of LED at high output, as it may harm your vision.

8. The products are designed to perform without failure in the recommended usage conditions.
   However, please take the necessary precautions to prevent fire, injury, and other damages from these unexpected failures.

9. The products are manufactured to be used for ordinary electronic equipment. Please contact our sales staff in advance when exceptional quality and reliability are required, when the failure or malfunction of the products might directly jeopardize life or health (such as for airplanes, aerospace, transport equipment, medical applications, nuclear reactor control systems and so on).

10. Stanley does not recommend supersonic wave welding as it cause resonance with sealing resin and may cause breaking of conductive wire.
    Please use after affirming beforehand there is no problem.

11. The formal specification sheets should be exchanged and signed by both parties.

Packaging specifications

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This product is baked (moisture removal) before packaging, and is shipped in moisture-proof packaging (as shown below) to minimize moisture absorption during transportation and storage. However, with regard to storing the products, Stanley recommends the use of dry-box under the following conditions is recommended. Moisture-proof bag as the packaging is made of anti-static material but packaging box is not.

【Recommended storage condition / products warranty period 】

Temperature	+5 to 30℃
Humidity	Under 70%

In the case of the package unopened , please use within 12 months【Recommended storage condition】.
Please avoid rapid transition from low temp. condition to high temp. condition
and storage in corroding and dusty environment.

【Time elapsed after package opening】

The package should not be opened until immediately prior to its use, and please keep the time frame between package opening and soldering which is【maximum 168h】.
If the device needs to be soldered twice, both soldering operations must be completed within the 168h.

If any components should remain unused, please reseal the package and store them under the conditions described in the【 Recommended Storage Condition 】above.

This product must be required to perform baking process (moisture removal) for
at 48h (min.) to 72h (max.) at 60±5 degrees Celsius if following conditions apply.

1. In the case of silica gel (blue) which indicates the moisture level within the package, changes or loses its blue color.
2. In the case of time passes for 168h after the package is opened once.

Baking process should be performed after LED having been taken out of the package.

Baking may be performed in the tape-reel form , however if it is performed with the reel stacked over one another, it may cause deformation of the reels and taping materials and later obstruct mounting. Please handle only once it has returned to room temperature. Provided that, baking process shall be 2 times max.

The metal parts of this product are plated with Ag. If exposed to an atmosphere containing corrosive gases, etc., the plated surface may deteriorate and affect solderability and optical properties. When storing, please keep in an airtight container.

Packaging specifications

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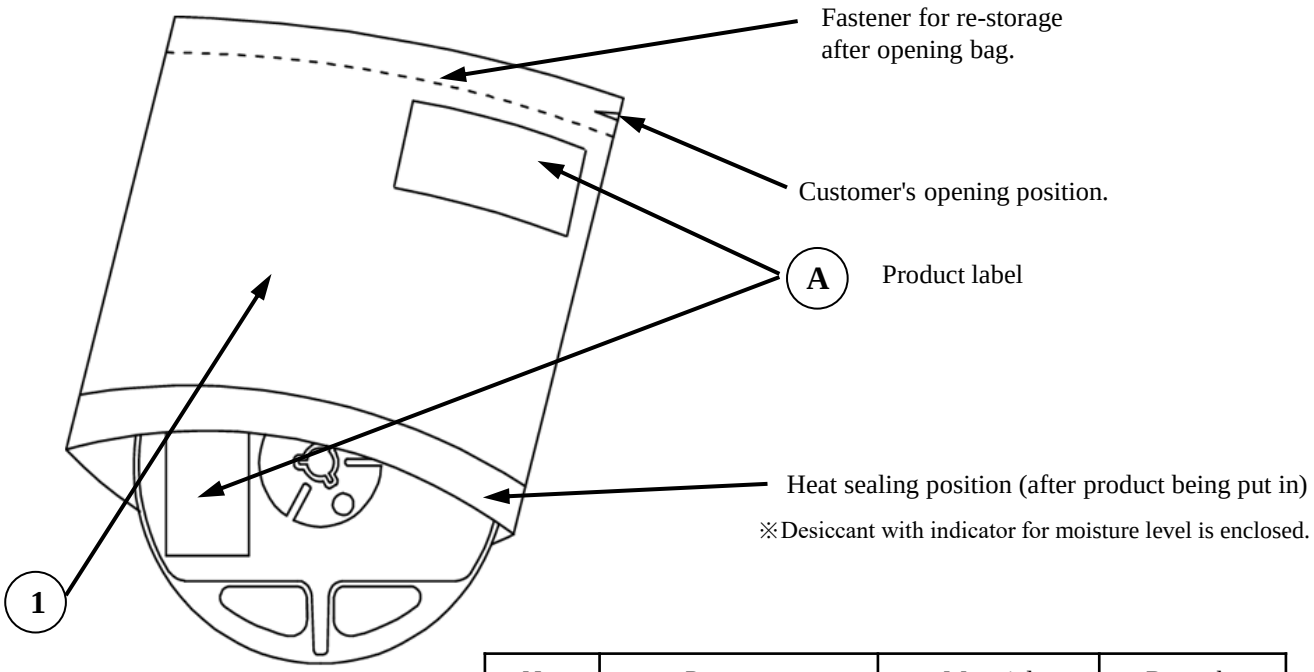
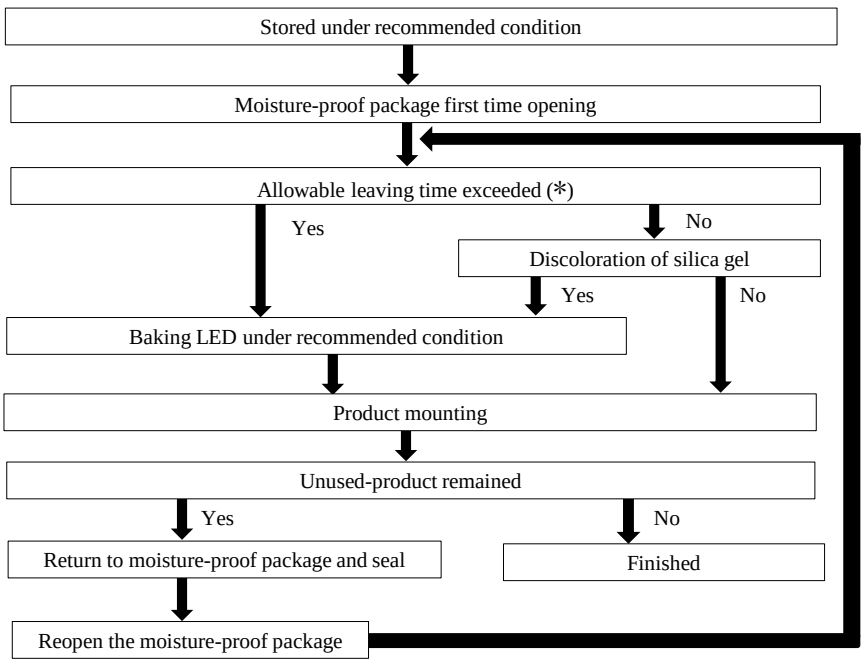
【Moisture-proof packaging specification】



No.	Part name	Material	Remarks
①	Moisture-proof bag with Aluminum layer	PET+Al+PE	with ESD protection

【Flow chart-package opening to mounting】



Allowable leaving time means the maximum allowable leaving time after opening package, which depends on each LED type.
The allowable leaving time should be calculated form the first opening of package to the time when soldering process is finished.
When judging if the allowable leaving time has exceeded or not, please subtract the soldering time. The allowable leaving time after reopening should be calculated form the first opening of package, or from the time when baking process is finished.

Packaging specifications

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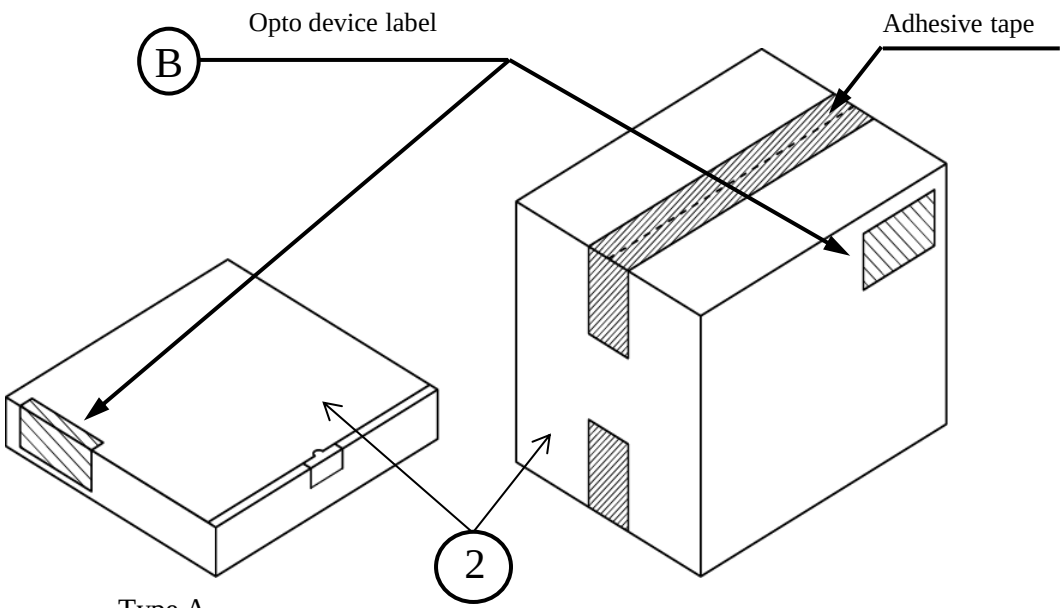
【 Packing box 】

(RoHS / ELV compliant)

Box type	Outline dimension L × W × H (mm)	Capacity of the box
Type A	280 × 265 × 45	3 reels
Type B	310 × 235 × 265	15 reels
Type C	440 × 310 × 265	30 reels
Type D	305 × 270 × 65	3 reels
Type E	370 × 280 × 270	30 reels
Type F	530 × 380 × 270	60 reels

The above measurements are reference values.

The box is selected out of the above table by shipping quantity.



Type A

Material / box : Cardboard

Type B, C

Material / box : Cardboard

Partition : Cardboard

Type D

Material / box : Cardboard

Type E, F

Material / box : Cardboard

No.	Part name	Material	Remarks
②	Packing box	Corrugated Cardboard	without ESD protection

Packaging specifications

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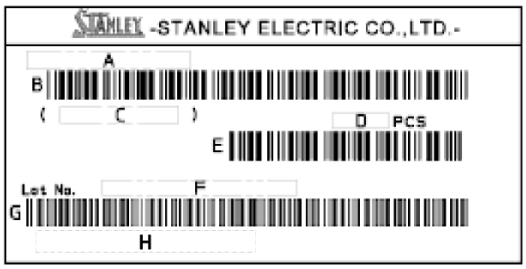
【Label specification】

(acc.to ISO/IEC16388)

A Product label



A. Parts number

B. Bar-code for parts number

C. Parts code (In-house identification code for each parts number)

D. Packed parts quantity

E. Bar-code for packed parts quantity

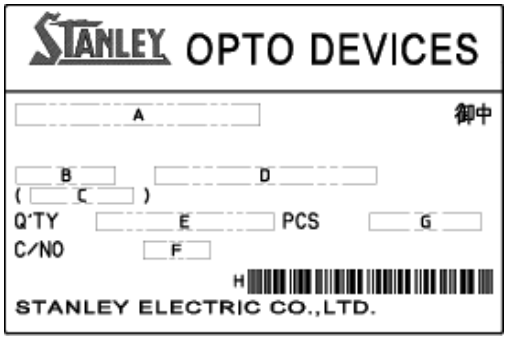
F. Lot number & rank

(refer to Lot number notational system for details)

G. Bar-code for lot number & rank

H. MSL

B Opto device label



A. Customer name

B. Parts type

C. Parts code

D. Parts number

E. Packed parts quantity

F. Carton number

G. Shipping date

H. Bar-code for In-house identification number

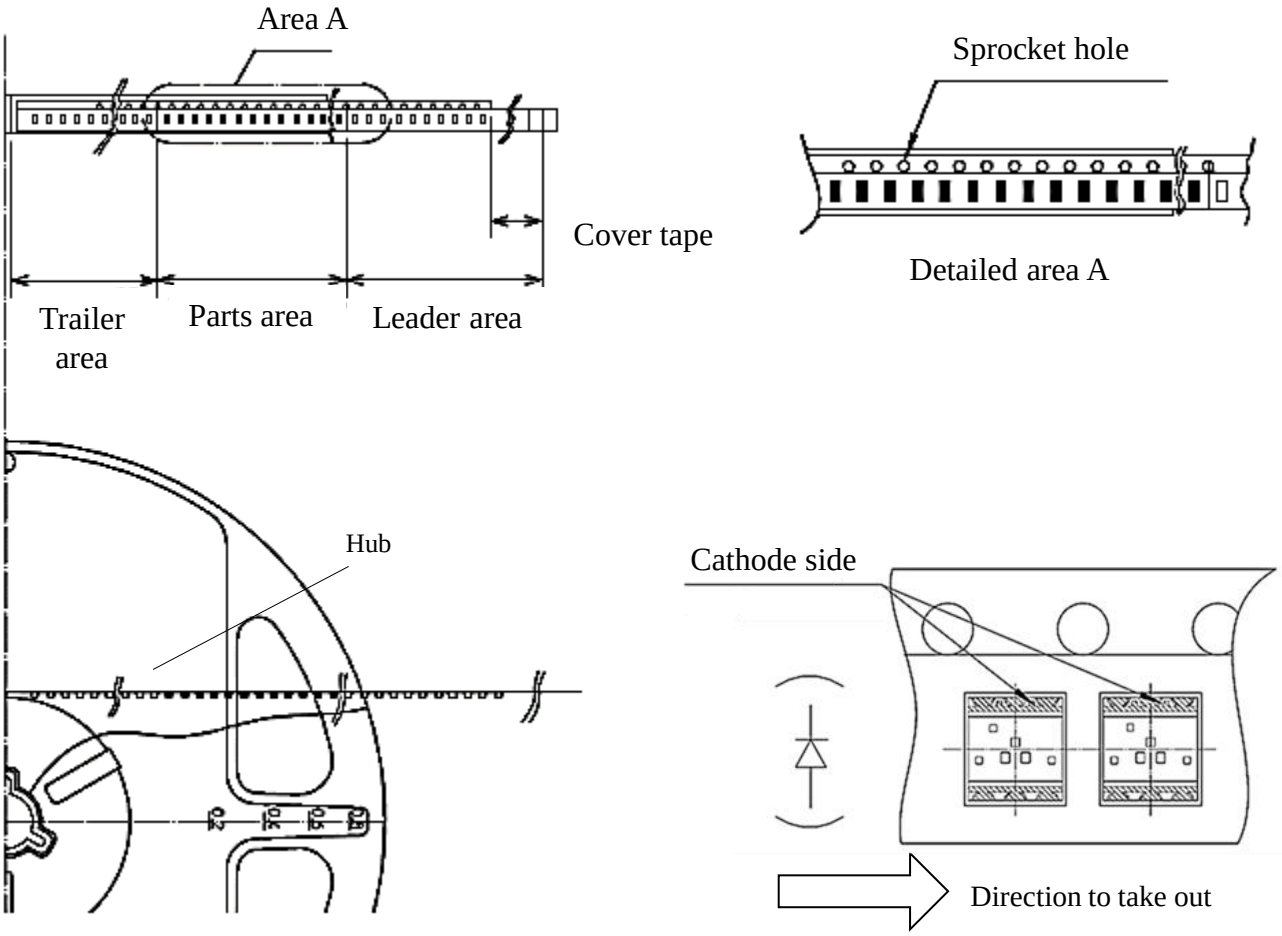
<Remarks> Bar-code font : acc.to ISO-IEC16388

Taping and reel specifications

BRGB131CWSE-10-TR

(acc.to IEC60286-3)

【Appearance】



Note

"-TR" means Cathode Side of LEDs; should be placed on the sprocket-hole side.

Items		Specifications	Remarks
Leader area	Cover-tape	Cover-tape shall be longer than **300mm** without carrier-tape	The end of cover-tape shall be held with adhesive tape.
	Carrier-tape	Empty pocket shall be more than **25 pieces**.	Please refer to the above figure for Taping & reel orientation .
Trailer area		Empty pocket shall be more than **40 pieces**.	The end of taping shall be inserted into a slit of the hub.

Taping and reel specifications

BRGB131CWSE-10-TR

(acc.to IEC60286-3)

【 Qty. per reel】

3,000parts/reel
Minimum Qty. per reel might be 500 parts when getting less than 3,000 parts.
In such case, parts of 500-unit-qty. shall be packed in a reel and the qty. shall be identified on the label

【Mechanical strength】

Cover-tape adhesive strength shall be 0.1～1.0N (An angle between carrier-tape and cover-tape shall be170 deg.).
Both tapes shall be so sealed that the contained parts will not come out from the tape when it is bent at a radius of 15mm.

【 Others】

Reversed-orientation, Up-side down placing, side placing and out of spec. parts mix shall not be held.
Empty pocket per reel shall be defined as follows.

Qty./reel	Max. qty. of empty pocket	Remaks
500	1	-
1,000	1	-
1,500	1	-
2,000	2	No continuance
2,500	2	No continuance
3,000	3	No continuance
3,500	3	No continuance
4,000	4	No continuance

Taping and reel specifications

(acc.to IEC60286-3)

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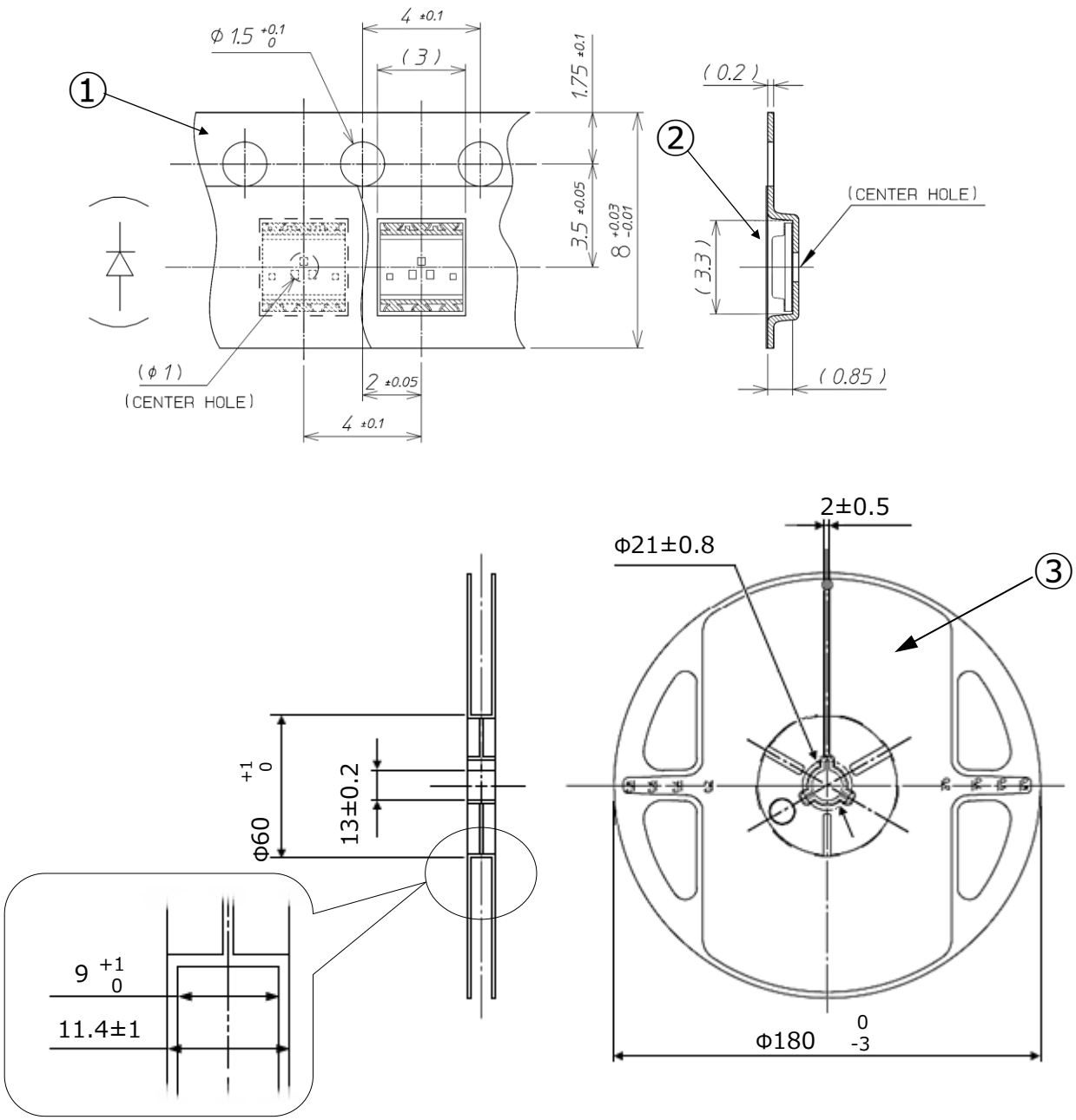
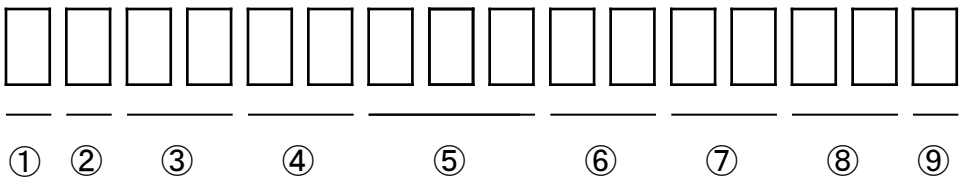
Unit: mm



No.	Part name	Remarks
①	Carrier-tape	without ESD protection
②	Cover-tape	with ESD protection
③	Carrier-reel	without ESD protection

Lot number notational system

BRGB131CWSE-10-TR



① - 1digit : Production location (mark identify alphabet)

② - 1digit : Production year (The last digit of production year 2024→4, 2025→5, 2026→6, 2027→7 ･･･)

③ - 2digits : Production month (Jan. to Sep. , should be 01,02,03 ･･･)

④ - 2digits : Production date

⑤ - 3digits : Serial number

⑥ - 2digits : Tape and reel following number

⑦ - 2digits : Luminous intensity rank.

(If luminous flux rank is 1 digit, "-" shall be dashed on the place for the second digit.

If there is no identified rank, "- -" is used to indicate.)

⑧ - 2digits : Chromaticity coordinates rank

(If chromaticity coordinates rank is 1 digit, "-" shall be dashed on the place for the second digit.

If there is no identified rank, "- -" is used to indicate.)

⑨ - 1digit : V_F Rank (If rank is not defined, "-" is described.)

Compliance with RoHS/ELV

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This product is in compliance with RoHS / ELV.
Prohibition substance and it's criteria value of RoHS / ELV are as follows.

- RoHS instruction ⋯ Refer to following 1 to 10.
- ELV instruction … Refer to following 1 to 4.

No.	Substances	Threshold
1	Lead and its compounds	0.1% (1,000ppm)
2	Mercury and its compounds	0.1% (1,000ppm)
3	Cadmium and its compounds	0.01% (100ppm)
4	Hexavalent chromium compounds	0.1% (1,000ppm)
5	PBB : Polybrominated Biphenyls	0.1% (1,000ppm)
6	PBDE : Polybrominated Biphenyl Ethers	0.1% (1,000ppm)
7	DEHP : Bis (2-ethylhexyl) phthalate	0.1% (1,000ppm)
8	BBP : Butyl benzyl phthalate	0.1% (1,000ppm)
9	DBP : Dibutyl phthalate	0.1% (1,000ppm)
10	DIBP : Diisobutyl phthalate	0.1% (1,000ppm)

Reliability Testing Result BRGB131CWSE-10-TR

1. Reliability testing result

Test Item	Test Condition	Duration	Failure
Operating Life	Ta=25℃, Maximum Rated Current	1,000h	0 / 20
High Temperature Operating Life	Ta=85℃, Maximum Rated Current ※1	1,000h	0 / 20
Low Temperature Operating Life	Ta=−40℃, Maximum Rated Current	1,000h	0 / 20
Wet High Temperature Operating Life	Ta=60℃ Rh=90% Maximum Rated Current	1,000h	0 / 20
Thermal shock	Ta=Tstg max. to Tstg min. (each 15min)	200 cycles	0 / 20
Resistance to Reflow Soldering	Moisture Soak：30℃ 70% 168h Preheating ：150 to 180℃ 90 to 120s Soldering：260℃ max.	2times	0 / 20
Electric Static Discharge(ESD) ※2	C=100pF R2=1.5kΩ ±2,000V	1time each polarity	0 / 10

※1 Maximum rated current at maximum rated operating temperature
※2 Reference test

2. Failure criteria

Item	Symbol	Condition	Failure Criteria
Luminous Intensity	I_V	I_F Value of each product Luminous Intensity	Testing Min. Value ＜ Standard Min. Value × 0.5
Forward Voltage	V_F	I_F Value of each product Forward Voltage	Testing Max. Value ≧ Standard Max. Value × 1.2

Special notice to customers using the products and technical information shown in this data sheet

1) The technical information shown in the data sheets are limited to the typical characteristics and circuit examples of the referenced products. It does not constitute the warranting of industrial property nor the granting of any license.

2) For the purpose of product improvement, the specifications, characteristics and technical data described in the data sheets are subject to change without prior notice. Therefore, it is recommended that the most updated specifications be used in your design.

3) When using the products described in the data sheets, please adhere to the maximum ratings for operating voltage, heat dissipation characteristics, and other precautions for use. We are not responsible for any damage which may occur if these specifications are exceeded.

4) The products that have been described to this catalog are manufactured so that they will be used for the electrical instrument of the benchmark (OA equipment, telecommunications equipment, AV machine, home appliance and measuring instrument).
The application of aircrafts, space borne application, medical equipment and nuclear power control equipment, etc. needs a high reliability and safety, and the breakdown and the wrong operation might influence the life or the human body. Please consult us beforehand if you plan to use our product for the usages of aircrafts, space borne application, transportation equipment, medical equipment and nuclear power control equipment, etc. except OA equipment, telecommunications equipment, AV machine, home appliance and measuring instrument.

5) In order to export the products or technologies described in this data sheet which are under the "Foreign Exchange and Foreign Trade Control Law," it is necessary to first obtain an export permit from the Japanese government.

6) No part of this data sheet may be reprinted or reproduced without prior written permission from Stanley Electric Co., Ltd.

7) The most updated edition of this data sheet can be obtained from the address below:
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cn https://www.stanley-electric.cn/cn/products/