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APPROVAL SHEET

Part No: **BB3210A-C3A**

NOTE : Green Part

MAKER			CUSTOMER	
				
R&D	QA	Sales	Checked	Approved
				

Prepared	Checked	Approved
Rachel Lee	Sky Lin	Kenneth Wu



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Features:

1. Meet RoHS.
2. Full Color SMD Chip LED With IC Control.
3. Sideview Package in 8.0mm carrier tape on 7" diameter reel.
4. Each RGB chip is 8 bit control, total of 16M color can be displayed.

Descriptions:

1. The BB3210A-C3A SMD product is much smaller than PLCC type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained
2. Besides, lightweight makes them ideal for miniature applications. Etc.

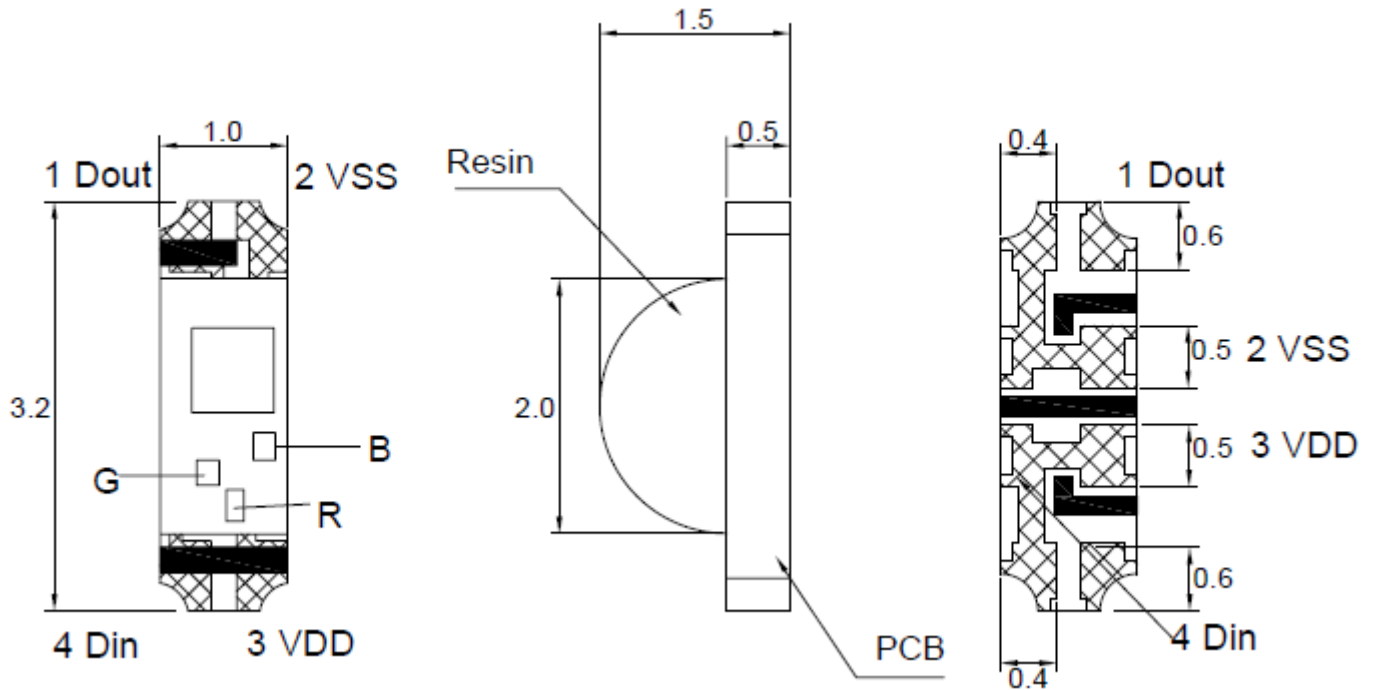
Applications

1. Consumer product, Home appliances, Telecommunication, light bar.
2. Toy lights, Christmas lights, Decorative lights.

Device Selection Guide:

PART NO	MATERIAL	COLOR	
		Emitted	Lens
BB3210A-C3A	AlGaAs	Red	White Diffused
	InGaN	Blue	
	InGaN	Green	

Package Dimensions

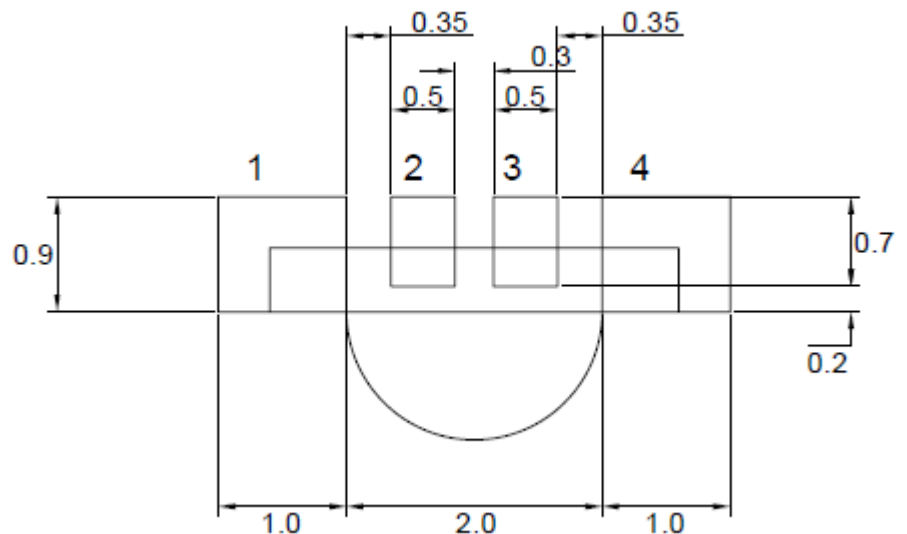


NO.	Symbol	Function Description
1	DOUT	Control date signal output
2	VSS	Ground
3	VDD	DC power input
4	DIN	Control date signal input

Note : 1. All dimension are in millimeter tolerance is ± 0.1 mm unless otherwise noted.

2. Specifications are subject to change without notice.

Recommended Soldering Pad Dimensions



Note : The tolerances unless mentioned is ± 0.1 mm, Angle ± 0.5 . Unit=mm.

Absolute Maximum Ratings

(Ta=25°C, VDD=5V, VSS=0)

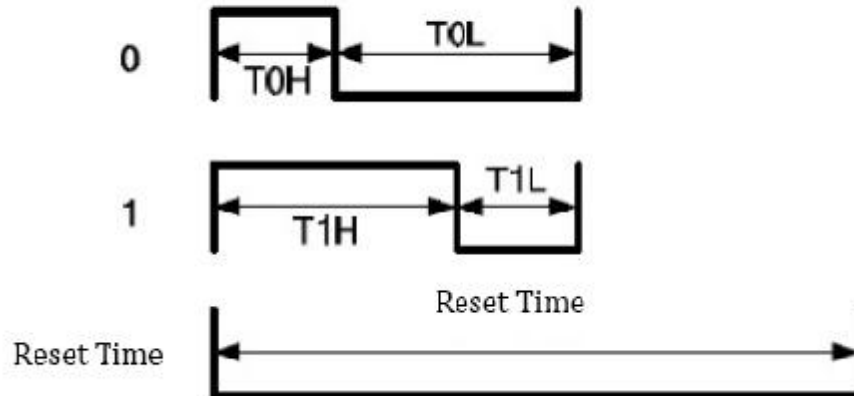
Parameter	Symbol	Ratings	UNIT
Supply Voltage	VDD	3.7~5.3	V
LED Output Current	I _{OUT}	25	mA
Operating Temperature	T _{opr}	-40~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +100	°C
Power Dissipation	Pd	240	mW

Typical Electrical & Optical Characteristics

(Ta=25°C, VDD=5V, VSS=0)

Items	Symbol	Min.	Typ.	Max.	UNIT	CONDITION
Supply Voltage	VDD	3.7	5	5.3	V	
Each R/G/B Current	IOL	-	12	-	mA	VDD=5V
Input High Voltage	VIH	2.7	-	VDD	V	DI,
Input Low Voltage	VIL	0	-	0.7	V	DI,

Timing Wave Form

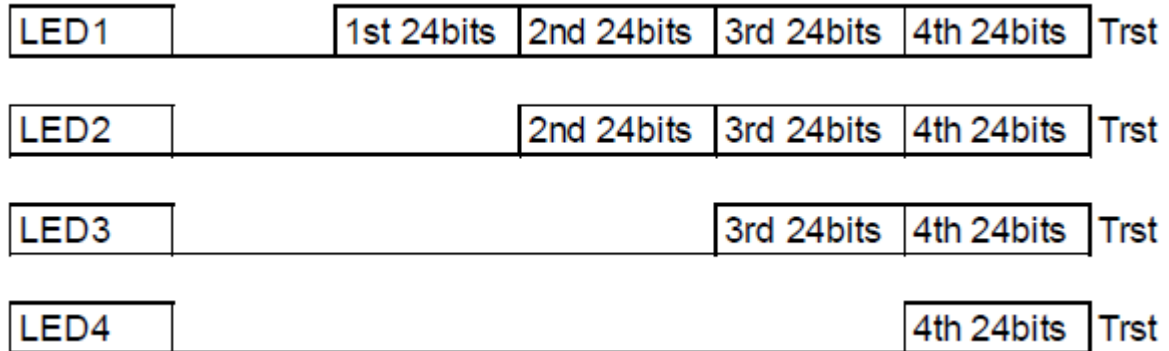


High Speed mode

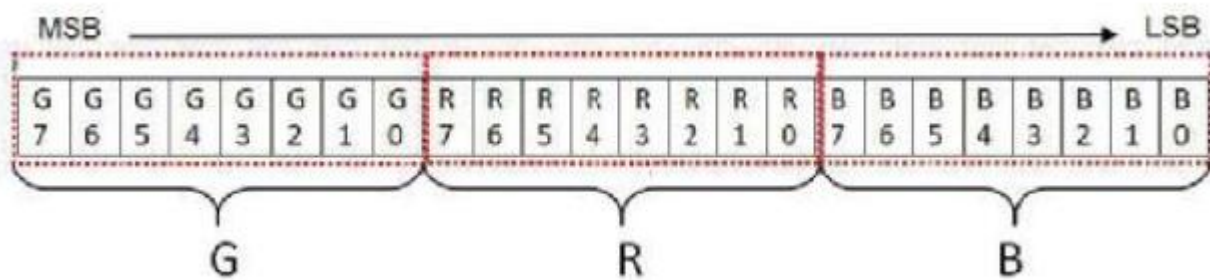
Item	Description	min	max	unit
T0H	0 code, High-level time	0.22	0.38	us
T0L	0 code, Low-level time	0.58	1	us
T1H	1 code, High-level time	0.58	1	us
T1L	1 code, Low-level time	0.22	1	us
Trst	Reset code, Low-level time	280	----	us

Note: $T_{1H} + T_{1L} > 1.2\mu s$

Data Communication



Single Data in 24bit for RGB



Electrical Optical Characteristics at Ta=25°C

Items	Symbol	Min.	Typ.	Max.	UNIT	CONDITION	
Luminous Intensity	I _v	R	125	285	500	mcd	VDD = 5.0 V
		G	200	370	800		
		B	50	75	200		
Dominant Wavelength	λ _D	R	615	622	630	nm	
		G	515	523	535		
		B	460	467	475		
Viewing Angle	2θ 1/2	120			deg		

- 1.The luminous intensity data did not including ±15% testing tolerance.
- 2.The dominant wavelength data did not including ±1nm testing tolerance.

Typical Electro-Optical Characteristics Curve

Fig.1 R CHIP

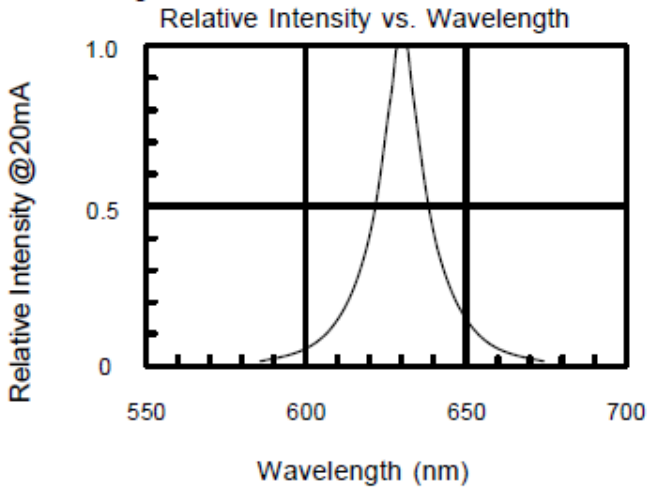


Fig.2 G CHIP

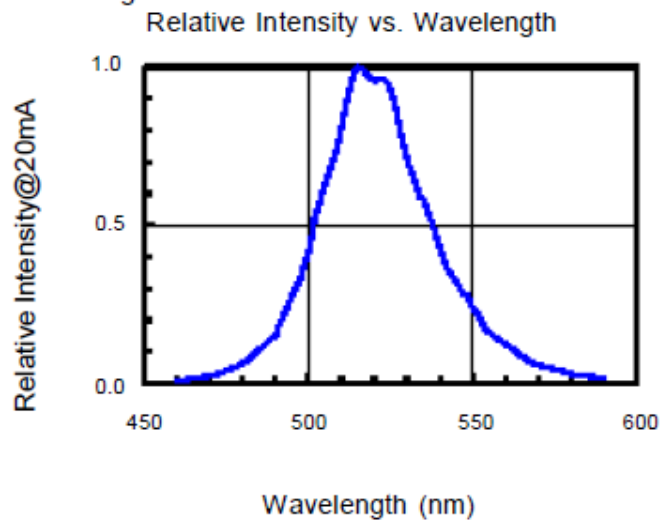


Fig.3 B CHIP

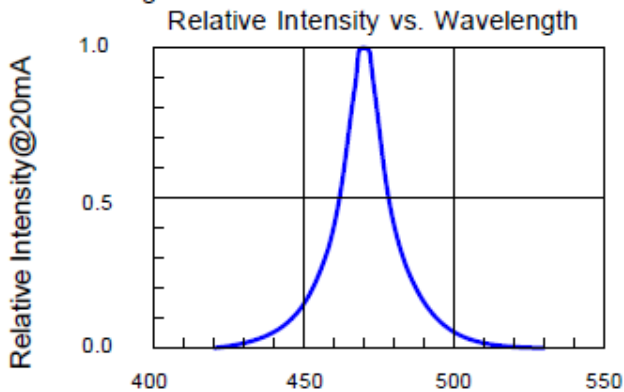
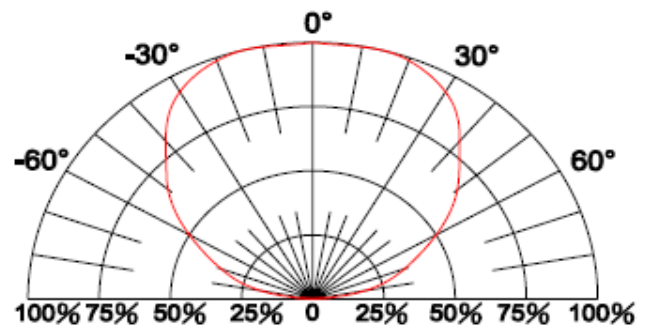
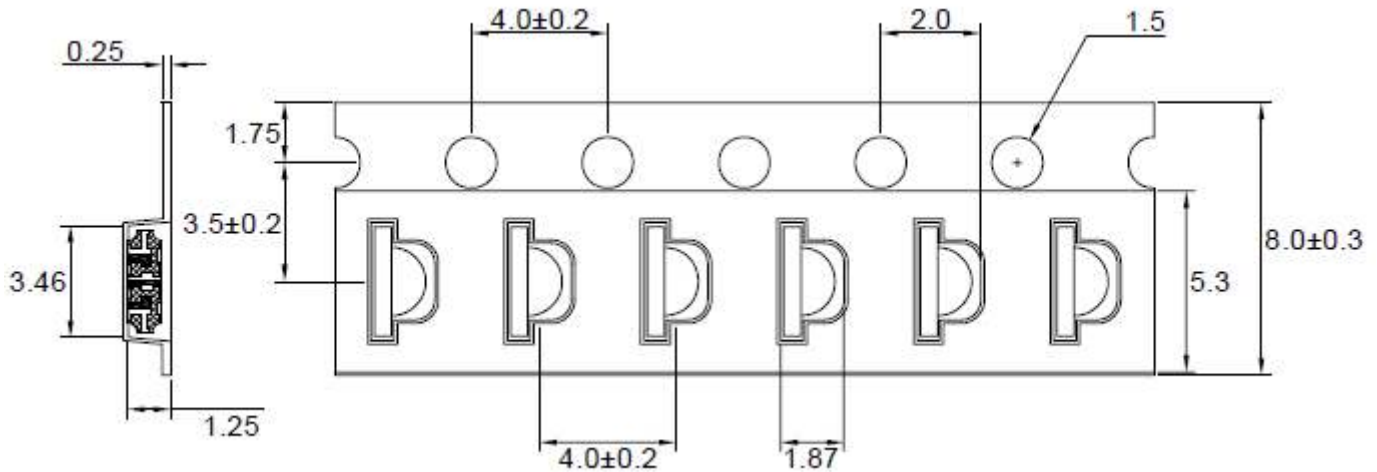


Fig.4 Directive Radiation

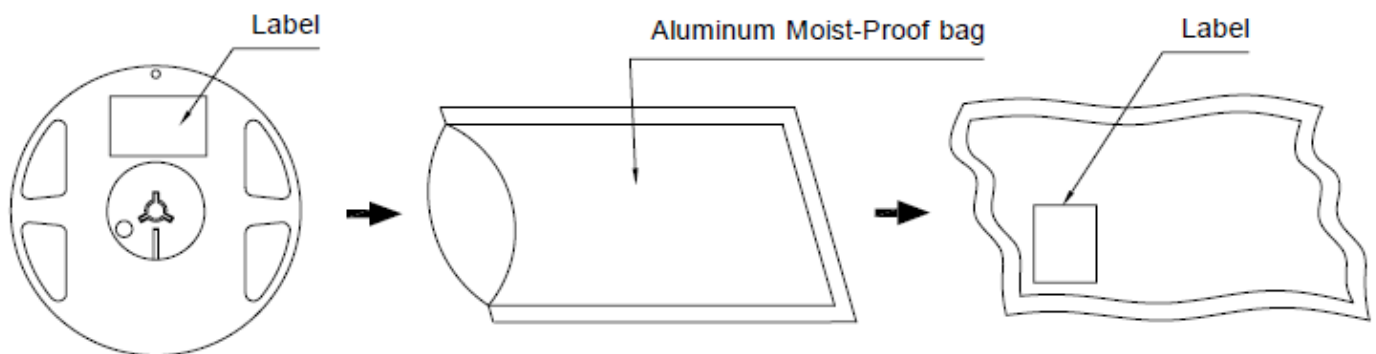


Carrier Tape Dimensions



Note : The tolerances unless mentioned is $\pm 0.1\text{mm}$, Angle ± 0.5 . Unit=mm.

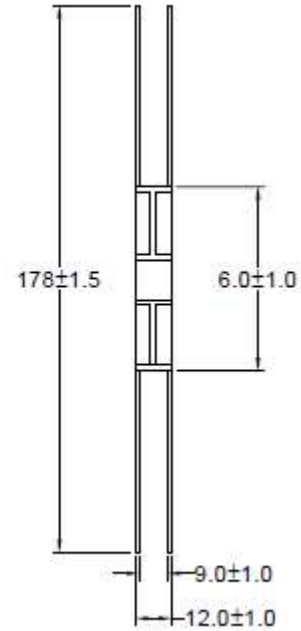
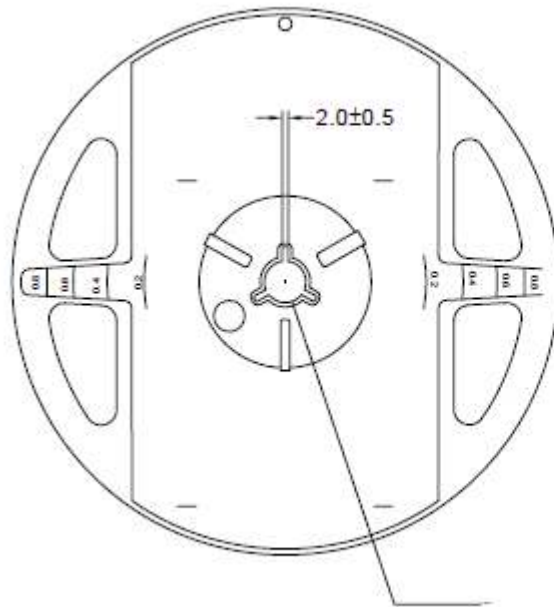
Packing Specifications



Part No.	Description	Quantity/Reel
BB3210A-C3A	8.0mm tape, 7" reel	3000 devices

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Reel Dimensions

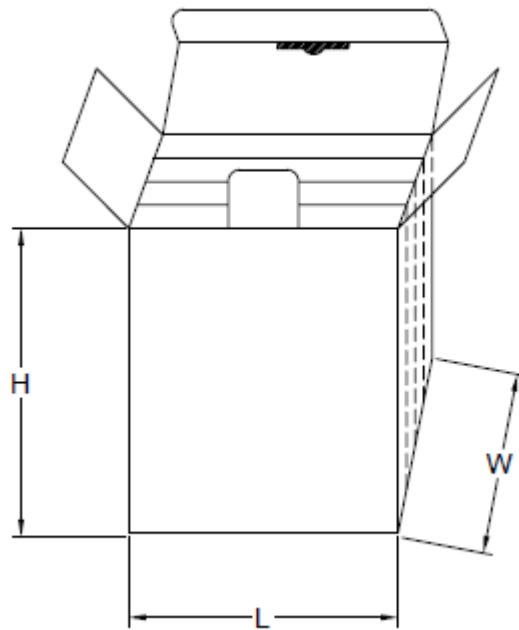


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Box Explanation

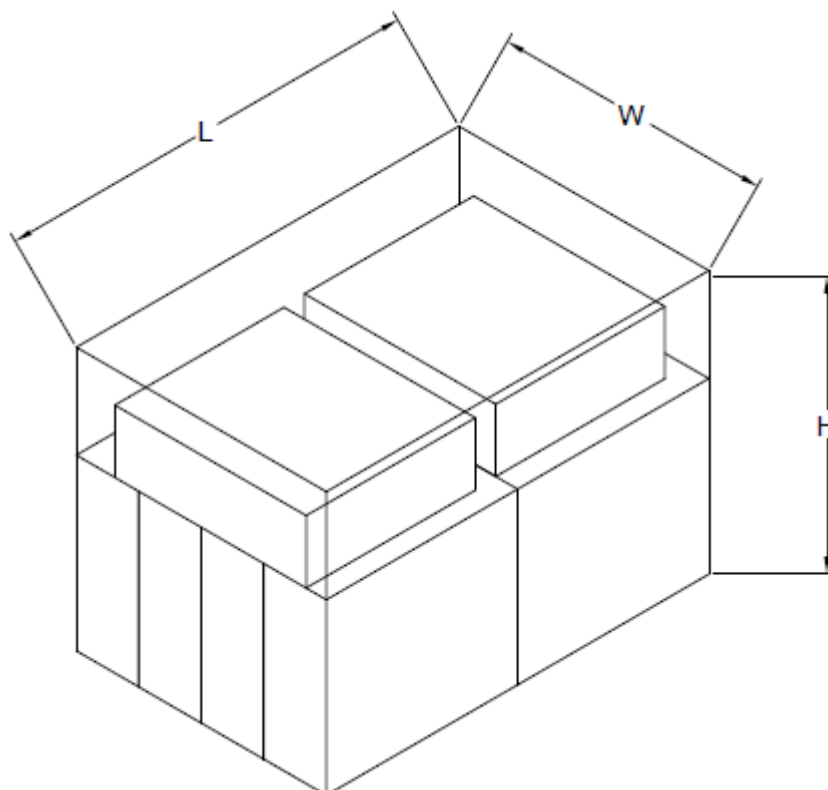
1. 5 BAG / INNER BOX

2. INNER BOX SIZE : L X W X H 23cm X 8.5cm x 26cm



3. 10 INNER BOXES / CARTON

4. CARTON SIZE : L X W X H 58cm X 34cm x 35cm

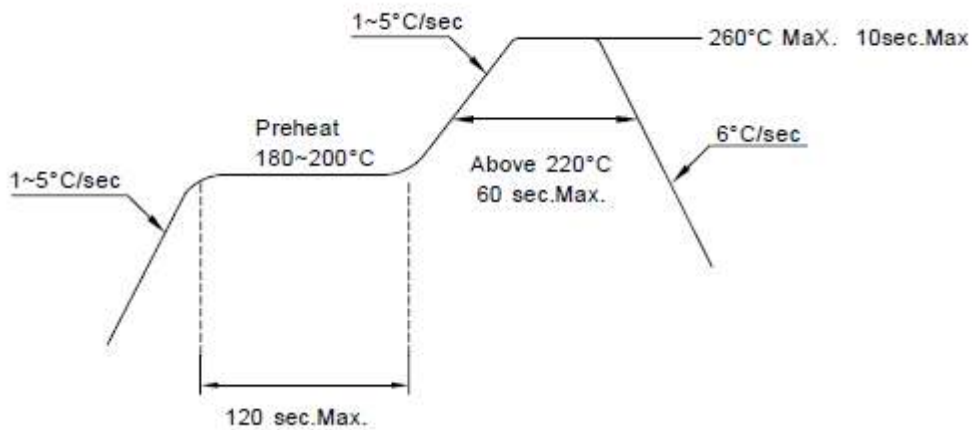


Recommended Soldering Conditions

1. Hand Solder

Basic spec is $\leq 280^{\circ}\text{C}$ 3 sec one time only.

2 PB-Free Reflow Solder



Note:

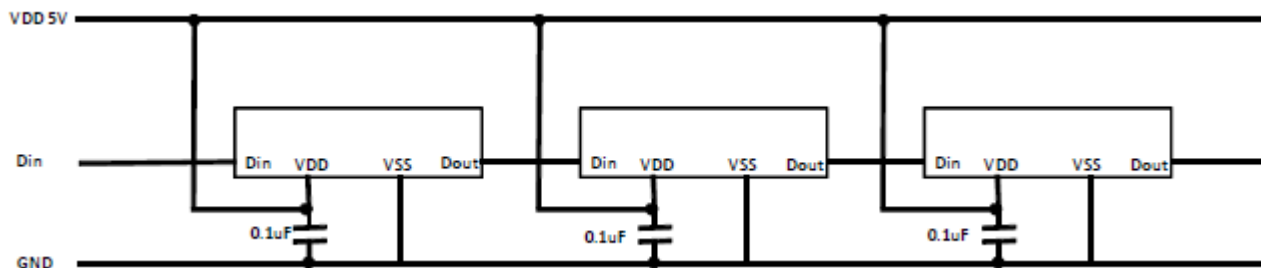
1. Reflow soldering should not be done more than two times.
2. When soldering, do not put stress on the LEDs during heating.
3. After soldering, do not warp the circuit board.

Precautions For Use:

Storage time:

1. Calculated shelf life before opening is 12 months at $< 30^{\circ}\text{C}$ and $< 90\%$ relative humidity (RH)
2. After bag is opened, devices which will be subjected to reflow soldering or other high temperature processes must be
 - a) Assembled within 168 hours in an environment of $\leq 30^{\circ}\text{C} / 60\%$ RH, or
 - b) Stored at ambient of 10% RH or less
3. Devices are required baking before assembly if:
 - a) Humidity Indicator Card reads $>10\%$ (for level 2a -5a) or $>60\%$ (for level 2) at ambient temperature $23\pm 5^{\circ}\text{C}$
 - b) 2.a) or 2.b) doesn't meet
4. If baking is required, devices should be baked for >72 hours at $60\pm 5^{\circ}\text{C} / 5\%$ RH. Performing baking only once, and using the baked devices within 72 hours.

Recommended route



Cleaning:

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

ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling these LED. All devices, equipment and machinery must be properly grounded.