LIGITEK ELECTRONICS CO.,LTD.
Property of Ligitek Only

LED SMD

LG-3535FRGB-T20-A02

DATA SHEET

DOC. NO : QW0905-LG-3535FRGB-T20-A02

REV. : A

DATE : 14 - Oct. - 2019

發行
立碁電子
DCC

Features:

1. Meet RoHS.

2.Full Color SMD Chip LED With IC Control.

3.Top view Package in 12.0mm carrier tape on 7" diameter reel.

4.Each RGB chip is 8 bit control, total of 16M color can be displayed.

Descriptions:

The LG-3535 SMD has wide viewing angle and optimized light coupling by inter reflector,The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

Applications:

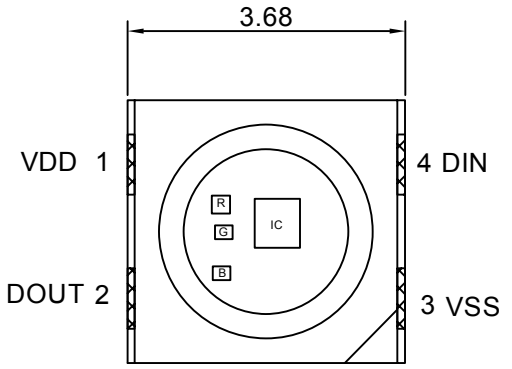
1. Consumer product, Home appliances, Telecommunication, light bar.

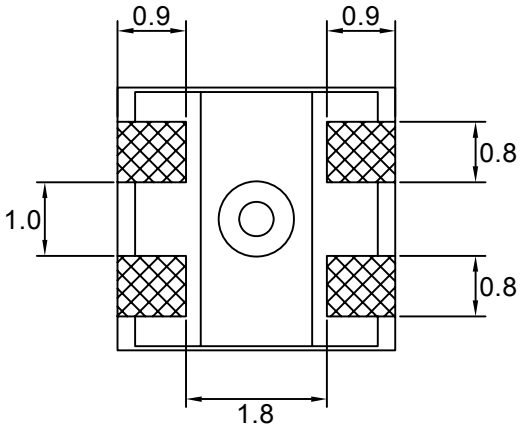
2. Toy lights, Christmas lights, Decorative lights.

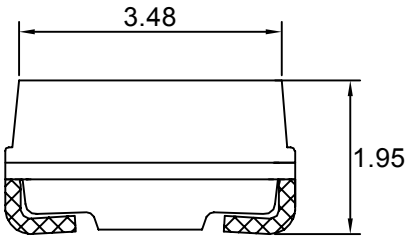
Device Selection Guide:

PART NO	MATERIAL	COLOR	
		Emitted	Lens
LG-3535FRGB-T20-A02	AlGaInP	Red	Water Clear
	InGaN	Blue	
	InGaN	Green	

Package Dimensions



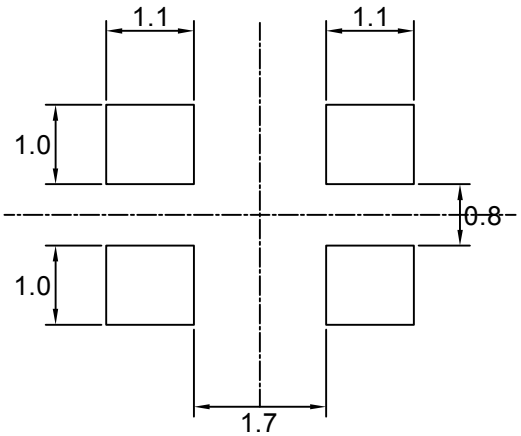




NO.	Symbol	Function Description
1	VDD	DC power input
2	DOUT	Control date signal output
3	VSS	Ground
4	DIN	Control date signal input

Note : 1.All dimension are in millimeter tolerance is ±0.2mm unless otherwise noted.
2.Specifications are subject to change without notice.

Recommended Soldering Pad Dimensions



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

Absolute Maximum Ratings

(Ta=25°C, VDD=5V, VSS=0)

Parameter	Symbol	Ratings	UNIT
Supply Voltage	VDD	-0 ~ +6.0	V
LED Output Current	I_{OUT}	25	mA
Operating Temperature	Topr	-40~ +85	℃
Storage Temperature	Tstg	-40 ~ +100	℃
Power Dissipation	Pd	400	mW

Typical Electrical & Optical Characteristics (Ta=25°C)

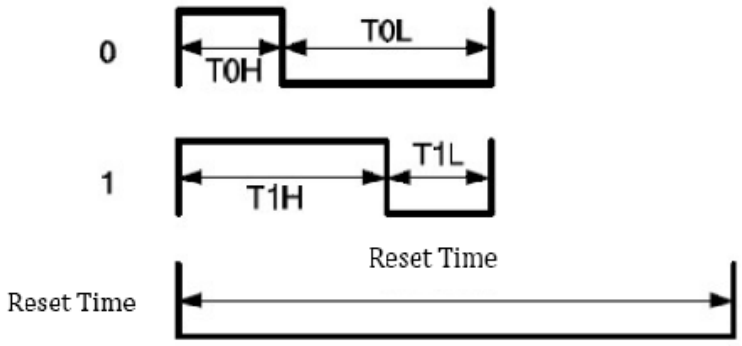
Items	Symbol	Min.	Typ.	Max.	UNIT	CONDITION
Supply Voltage	VDD	3.3	5	5.5	V	
Each R/G/B Current	IOL		20		mA	VDD=5V
Input High Voltage	VIH	2.7		VDD	V	DI,
Input Low Voltage	VIL	0		1.0	V	DI,
Output High Voltage	VOH	4.5				I_{OH}=4mA
Output Low Voltage	VOL			0.4 VDD	V	I_{OL}=4mA
Operation Current	IDD			2	mA	B、G、R no load
Pull Down Resistance	R_{PD}		500K		Ω	Din, Dout(VDD=5V)

Electrical Optical Characteristics at Ta=25°C

Items	Symbol		Min.	Typ.	Max.	UNIT	CONDITION
Luminous Intensity	Iv	R	----	900	----	mcd	VDD = 5.0 V
		G	----	1000	----		
		B	----	500	----		
Dominant Wavelength	λD	R	----	622	----	nm	
		G	----	525	----		
		B	----	470	----		
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

Timing Wave Form

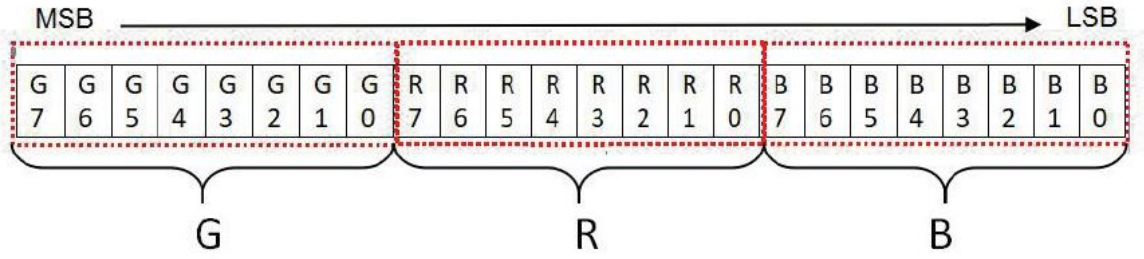


Item	Description	min	Typical	Allowance	unit
T0H	0 code, High-level time		0.3	±0.15	us
T0L	0 code, Low-level time		0.9	±0.15	us
T1H	1 code, High-level time		0.9	±0.15	us
T1L	1 code, Low-level time		0.3	±0.15	us
Trst	Reset code,Low-level time	250			us

Data Communication

LED1	1st 24bits	2nd 24bits	3rd 24bits	4th 24bits	Trst
LED2		2nd 24bits	3rd 24bits	4th 24bits	Trst
LED3			3rd 24bits	4th 24bits	Trst
LED4				4th 24bits	Trst

Single Data in 24bit for RGB



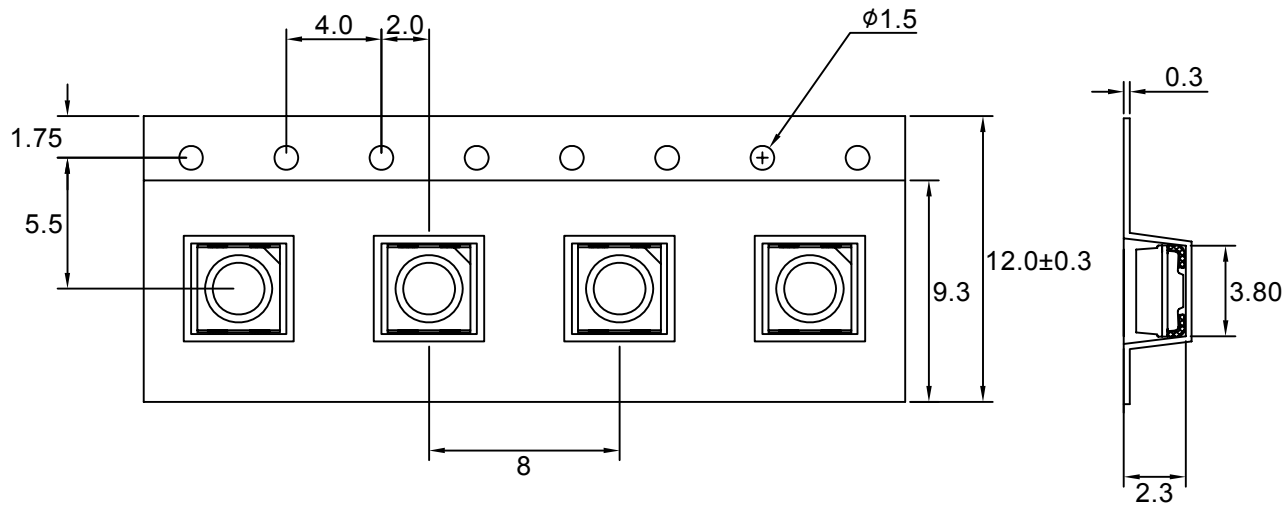
Advance Function Mode

This product has a Advance Function mode that supports the MCU to start with a specific command setting.

Advance Function Mode includes the following function。

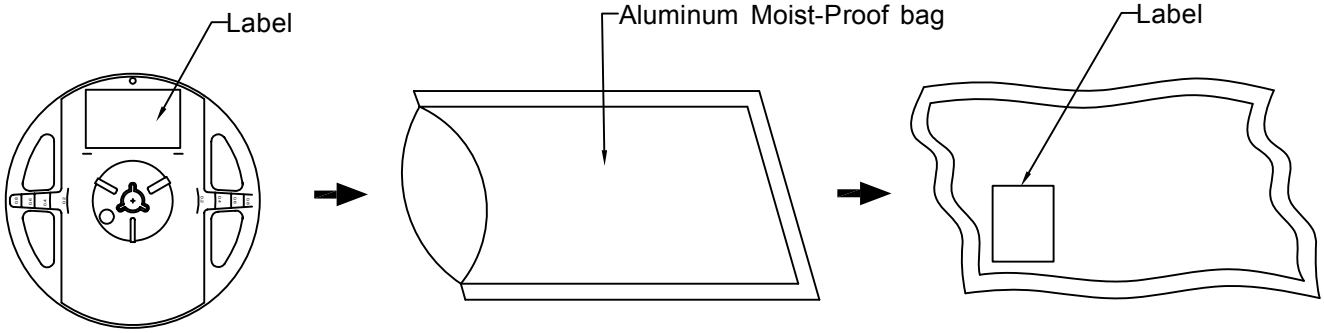
1. Feedback the cascaded number of LEDs and maximum sink current of R/G/B channel
2. Current Gain control:32 level(5bits) to adjust maximum sink current of R/G/B channel
3. Programmable PWM refresh rate (1.25kHz/2.5kHz/5kHz/10kHz)

Carrier Type Dimensions



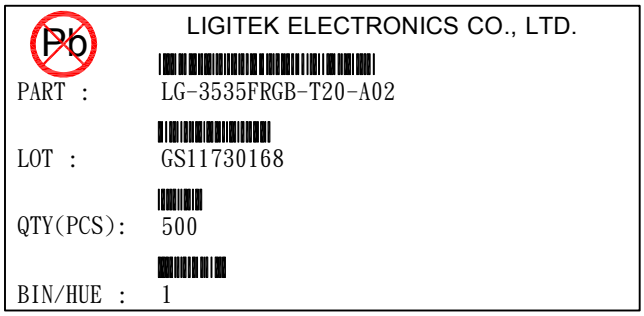
Note : The tolerances unless mentioned is ±0.1mm,Angle± 0.5. Unit=mm.

• Packing Specifications



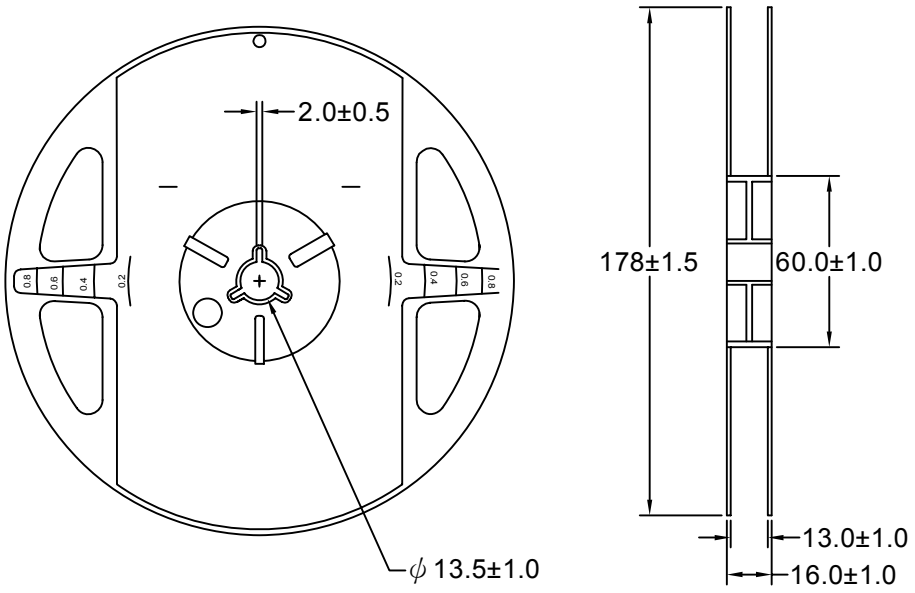
Part No.	Description	Quantity/Reel
LG-3535FRGB-T20-A02	12.0mm tape,7"reel	500 PCS

Label Explanation



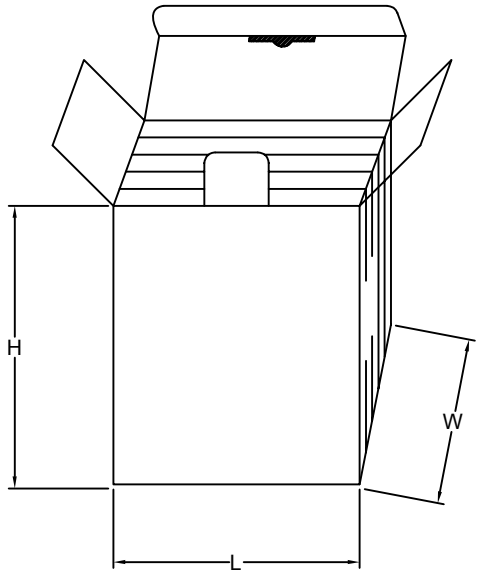
BIN : Luminous Intensity

Reel Dimensions

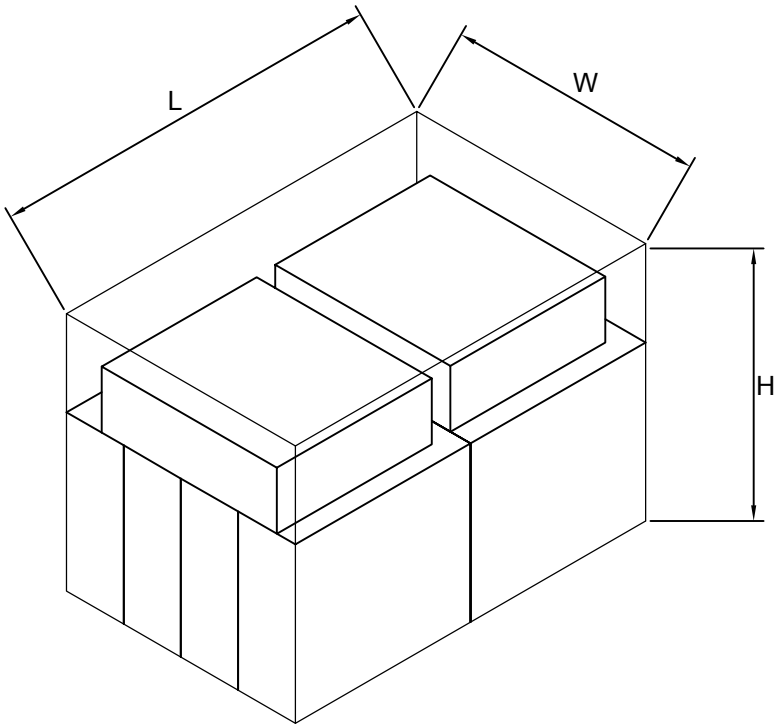


Box Explanation

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

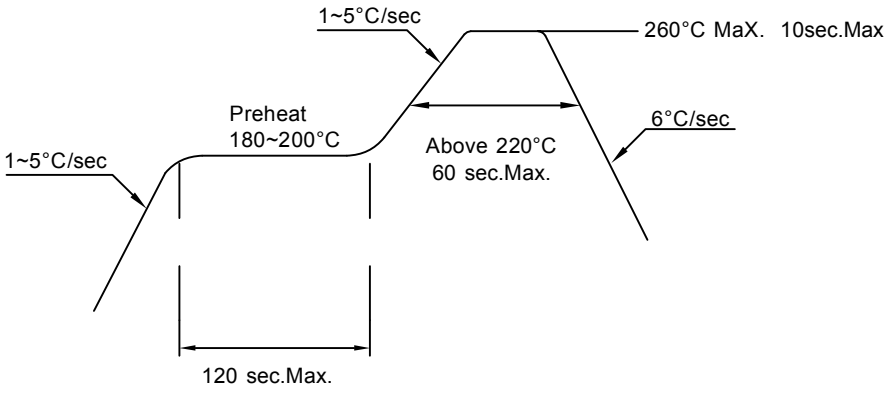


Recommended Soldering Conditions

1. Hand Solder

Basic spec is ≦ 280°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.

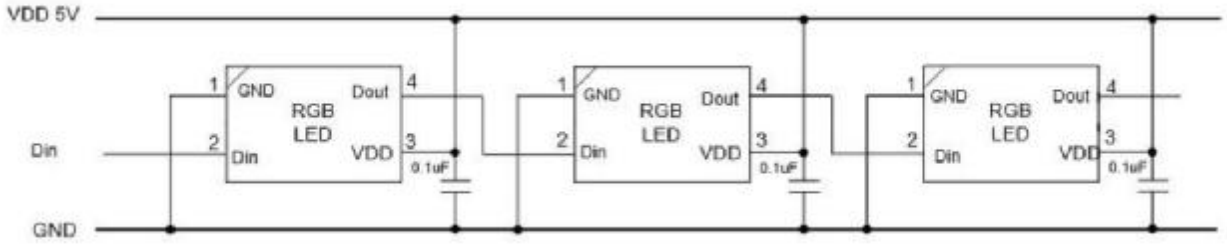
3.After soldering,do not warp the circuit board.

Precautions For Use:

Storage time:

1. Calculated shelf life before opening is 12 months at < 30°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) Assemblied within 72 hours in an environment of ≦ 30°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±5°C
   b) 2.a) or 2.b) doesn't meet
4. If baking is required, devices should be baked for >24 hours at 60±5°C / 5% RH.Performing baking only once, and using the baked devices within 8 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-electrosatic glove is recommended when handing these LED. All devices, equipment and machinery must be properly grounded.