



YETDA INDUSTRY LTD.

Technical Data Sheet

MODEL NO : B5050RGB4-6815

Features :

- Package in 8mm tape on 7" diameter reel
- Compatible with automatic placement equipment
- Compatible with reflow solder process

Applications :

- Indicators
- Automotive : backlighting in dashboard and switch
- Backlight for LCD

Dice material	Emitted color	Lens Color
AlGaInP/GaAs	Red	Water transparent
InGaN	Green	
InGaN	Blue	

Electrical/Optical Characteristics(Ta=25°C)

Parameter	Test Condition	Symbol	Value			Unit	
			Min	Typ	Max		
Spectral half bandwidth	I _F =20mA	$\Delta \lambda$	R		18	nm	
			G		33		
			B		30		
Dominant wavelength	I _F =20mA	λ_D	R	620	625	630	nm
			G	515	520	525	
			B	460	465	470	
Forward voltage	I _F =20mA	V _F	R	2.0	2.1	2.2	V
			G	3.0	3.2	3.4	
			B	3.0	3.2	3.4	
Luminous intensity	I _F =20mA	I _v	R	400		500	mcd
			G	800		1200	
			B	200		400	
Viewing angle at 50% I _v	I _F =10mA	2θ 1/2			120		Deg
Reverse current	V _R =5V	I _R			10		μA

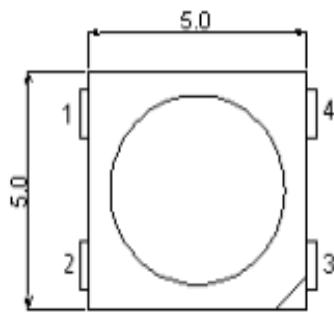


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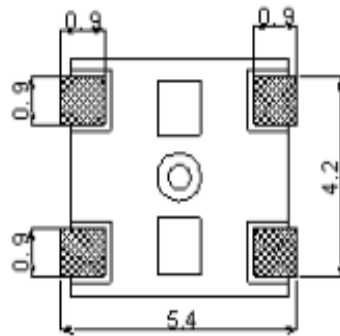
Absolute Maximum Ratings(Ta=25°C)

Parameter	Symbol	Value			Unit
		R	G	B	
Power dissipation	Pd	75	111	111	mW
Forward current	I _F	30			mA
Reverse voltage	V _R	5			V
Operating temperature range	Top	-40 ~+85			°C
Storage temperature range	Tstg	-40 ~+90			°C
Peak pulsing current (1/8 duty f=1kHz)	I _{FP}	125			mA

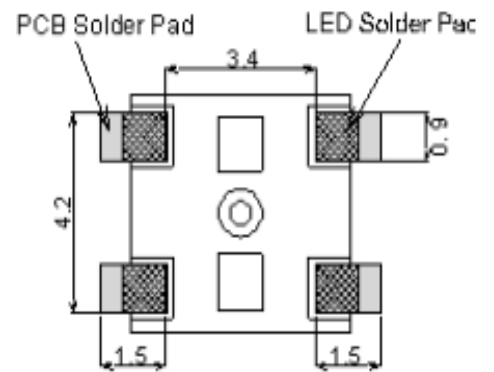
PACKAGING DIMENSIONS (mm):



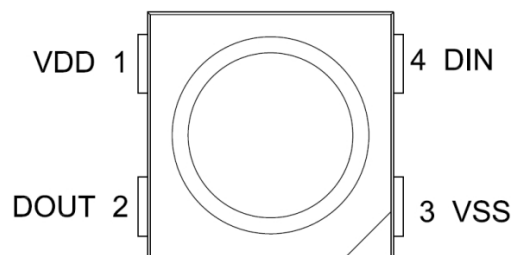
Top View



Back View



Solder Pad





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Absolute maximum ratings		(TA=25°C)		Top light Emitting Diode		
Parameter	Symbol	Rat	Unit			
Input range	VIN	3.0-7.5	V			
Logic input voltage	VI	-0.5~5.5	V			
Operating Temperature	Top	-40~+85	°C			
Storage Temperature	Tstg	-50~+150	°C			
ESD pressure	VESD	4K	V			
Electrical parameters		TA=-20°C ~70°C VDD=4.5~5.5V VSS=0V				
parameters	Symbol	Min	Typical	Max	Unit	Test condition
Chip input voltage	Vin	---	5	7.5	V	---
Chip internal power supply voltage	VDD	---	5.2	---	V	---
R/G/B Port pressure	Vds	---	---	9	V	---
R/G/B	Io	---	12	---	ma	---
The signal input flip threshold	VIH	0.7VDD	---	---	V	VDD=5.0V
	VIL	---	---	0.3VDD	V	VDD=5.0V
PWM Frequency	FPWM	---	1.2	---	KHZ	---
Static power consumption	IDD	---	1.0	---	ma	---



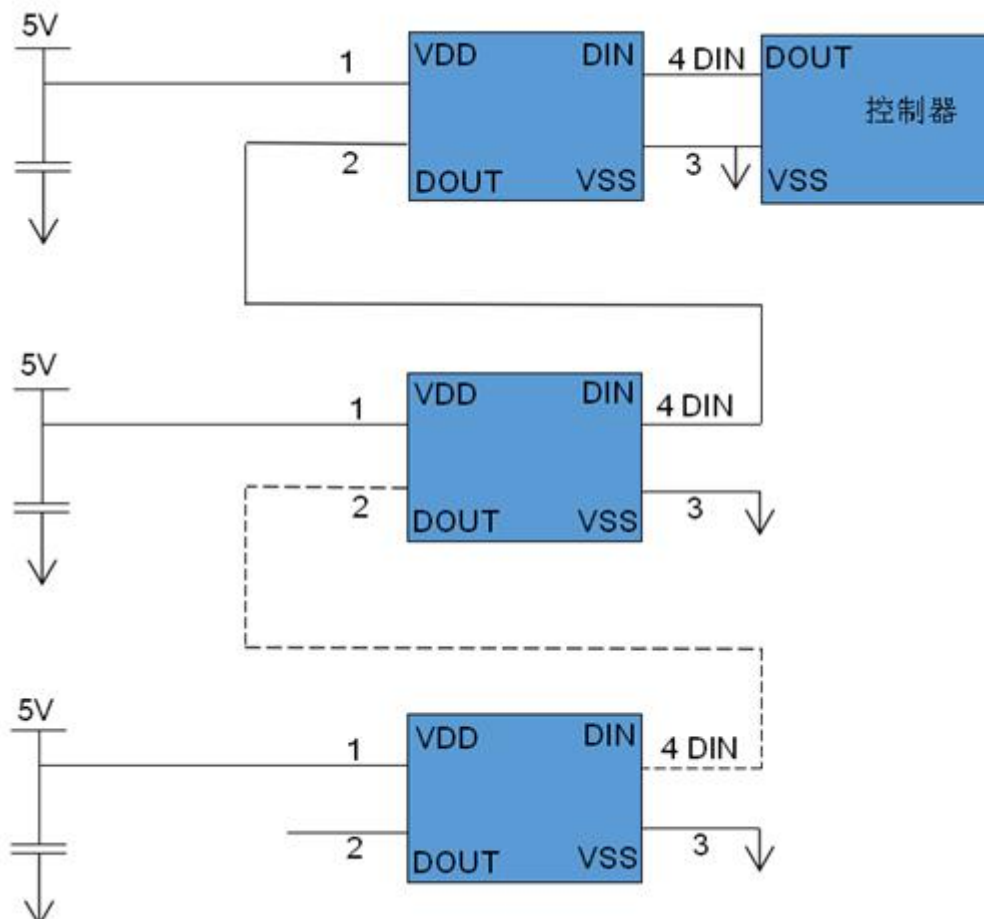
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Data transmission mode (Ta=25°C) :



4bit

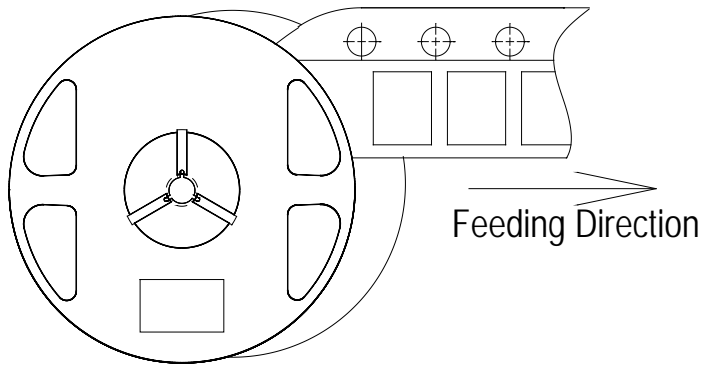
R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4
G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0



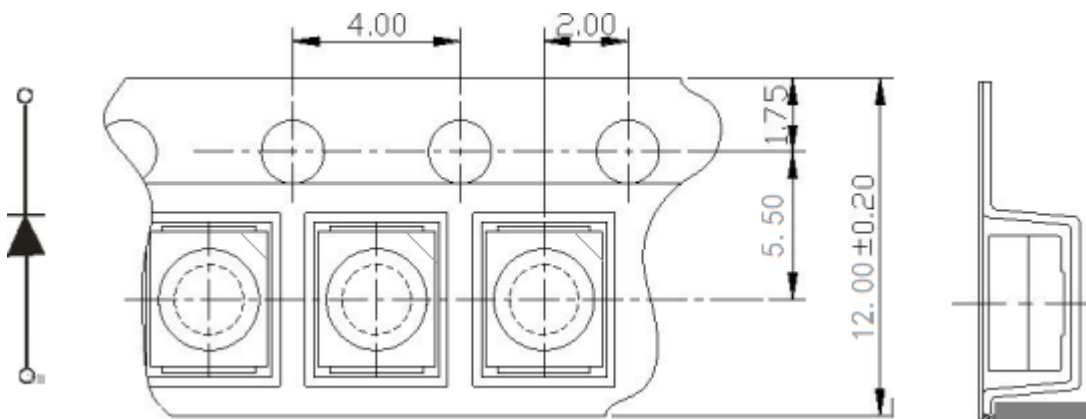


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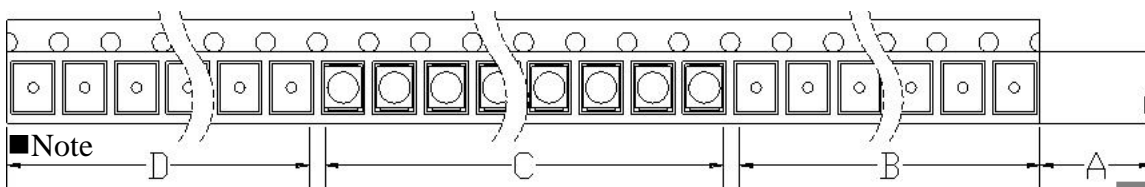
■Feeding Direction



■Dimensions of Tape (Unit: mm)



■Arrangement of Tape



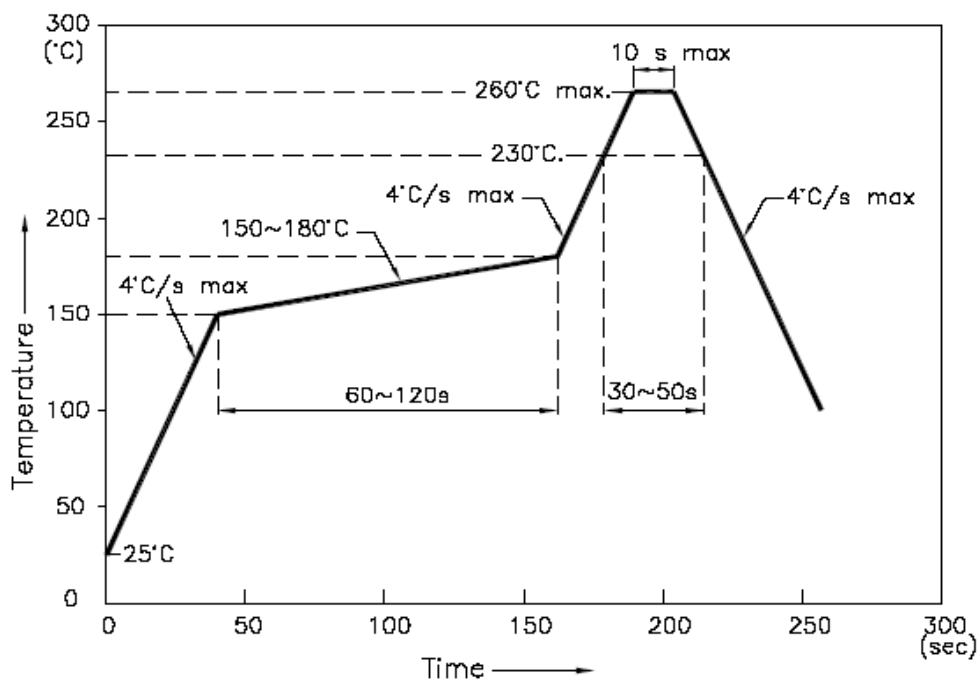
- Note
1. Empty component pockets are sealed with top cover tape;
 2. The maximum number of missing lamps is two.
 3. The cathode is oriented towards the tape sprocket hole;
 4. 1,000pcs/Reel



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Precautions For Use :
Over - current - proof
Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen)
Storage
1. The operation of temperature and R.H. are : $5^{\circ}\text{C} \sim 30^{\circ}\text{C}$, 60%R.H. Max.
2. Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a dampproof box with desiccating reagent. Considering the tape life, we suggest our customers to use our products within 1.5 year (from production date) .
3. It's recommended to bake before soldering when the package is unsealed after 72 hrs. The condition is : $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 15hrs.

■ Reflow Temp/Time





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NOTES:

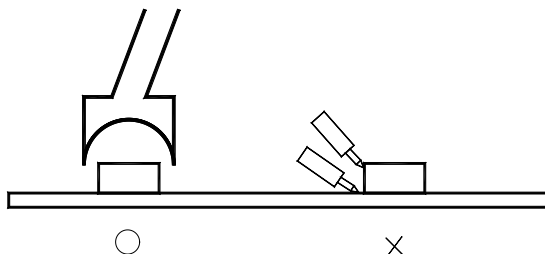
1. We recommend the reflow temperature $245^{\circ}\text{C}(\pm 5^{\circ}\text{C})$.the maximum soldering temperature should be limited to 260°C .
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■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.