

PRODUCT:

5050 SURFACE MOUNT RGB LED

FEATURES:

5.0 mm x 5.4 mm x 1.45 mm surface-mount LED
 120° emission angle
 Red, green and blue



DESCRIPTION

YUJILEDS™ RGB 5050 provides a multiple color solution. Providing R / B / G color, this mid-power LED can be used in a variety of applications demanding high color quality and even light distribution.



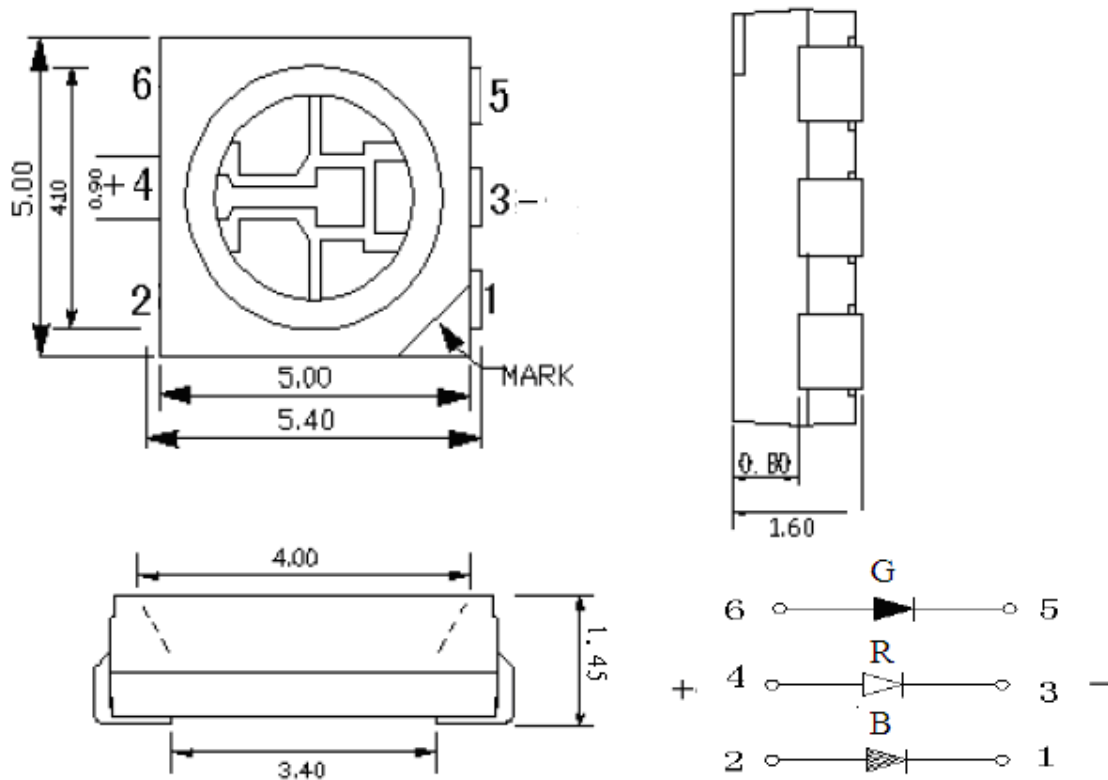
ELECTRICAL-OPTICAL CHARACTERISTICS (T _A = 25 °C)							
PARAMETER	SYMBOL		VALUE			UNIT	CONDITION
			MIN.	TYP.	MAX.		
Wavelength at peak emission	λ_p	R	620	--	625	nm	I _f = 20mA
		G	520	--	525		
		B	460	--	465		
Spectral half band width	$\Delta\lambda$	R	--	40	--	nm	I _f = 20mA
		G	--	30	--		
		B	--	25	--		
Dominant wavelength	λ_D	R	--	623.8	--	nm	I _f = 20mA
		G	--	521.4	--		
		B	--	467.1	--		
Forward voltage	V _f	R	--	2.03	--	V	I _f = 20mA
		G	--	3.12	--		
		B	--	3.08	--		
Luminous intensity	I _v	R	600	692	800	mcd	I _f = 20mA
		G	1500	1710	1800		
		B	400	458	600		
Viewing angle	2 θ /2	--	120	--	Deg	±5	I _f = 60mA
Reverse current	I _r	--	--	-	10	uA	V _r =5v

ABSOLUTE MAXIMUM RATING ($T_A = 25\text{ }^\circ\text{C}$)

PARAMETER	SYMBOL	LIMIT			UNIT
		R	G	B	
Power Consumption	P_D	40	60	60	mW
Forward Current	I_F	3*20			mA
Peak Forward Current	I_{FP}	3*60			mA
Reverse Voltage	V_R	5			V
Operating Temperature	T_{opr}	-20 ~ +70			$^\circ\text{C}$
Storage Temperature	T_{stg}	-30 ~ +80			$^\circ\text{C}$
Soldering Temperature	T_{sol}	260 \pm 5			$^\circ\text{C}$
Electrostatic Discharge	ESD	2000			V

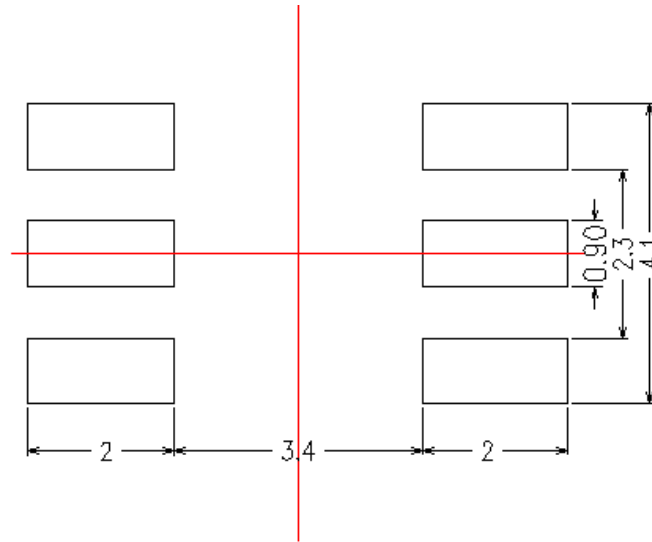
PACKAGE LAYOUT

All dimensions in mm, tolerance unless mentioned is $\pm 0.1\text{mm}$.



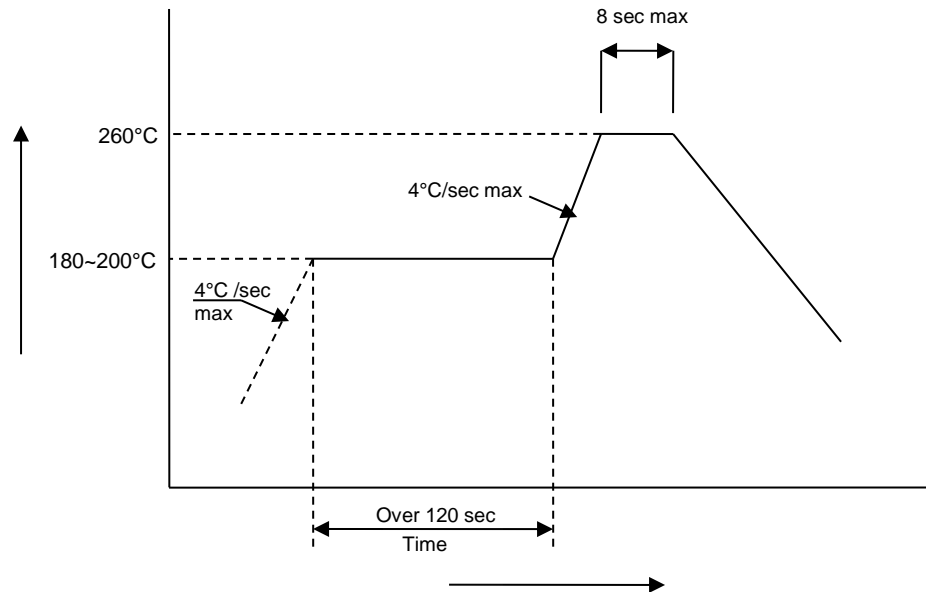
RECOMMENDED SOLDER PAD LAYOUT

All dimensions in mm, tolerance unless mentioned is ± 0.1 mm.



REFLOW PROFILE

SOLDERING RAMP-UP TIME (Pb-FREE)



INSTRUCTIONS FOR SMT

Problems caused by improper selection of collet

Choosing the right collet is important in ensuring product quality after SMT. LEDs are different from other electronic components, as they are not only concerned with electrical output but also optical output. This characteristic makes LEDs more fragile in the process of SMT. If the collet's lowering height is not well set, it will bring damage to the gold wire at the time of collet's pick-and-place process which can cause the LED to not illuminate, flicker or contribute to other quality problems, some of which may not be immediately detectable.

Collet selection

During SMT, please choose the collet that has larger outer diameter than the lighting area of lens, in order to avoid damage the gold wire inside the LED. Different collets fit for different products, please refer to the following figures below.



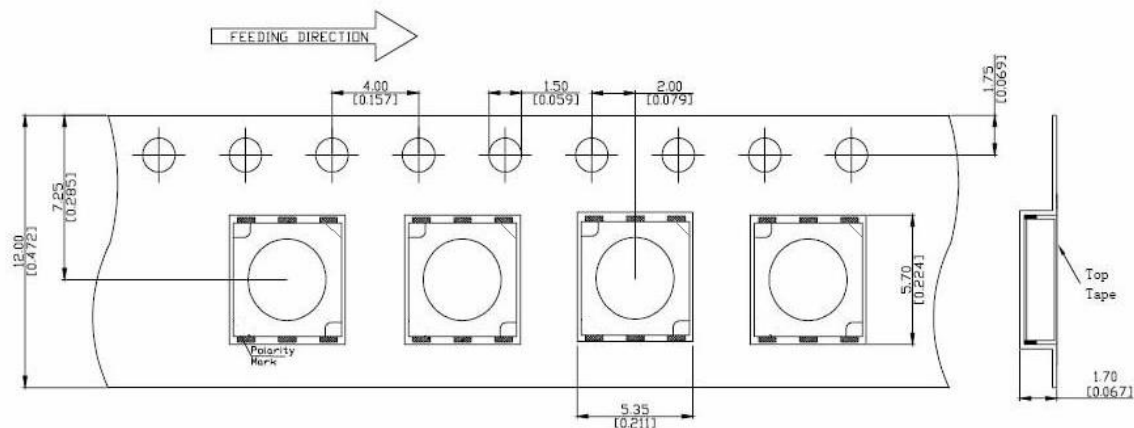
Setting the height of the collet is crucial in order to avoid damage to the top view SMD. If the collet setting is set to too low of an altitude, the collet will press down on the SMD, causing damage or breakage to the encapsulant and cause distortion or breakage of the gold wire.

Other notes of caution:

- No pressure should be exerted to the epoxy shell of the SMD under high temperature.
- Do not scratch or wipe the lens since the lens and gold wire inside are rather fragile and cross out easy to break.
- LED should be used as soon as possible when being taken out of the original package, and should be stored in anti-moisture and anti-ESD package.
- This usage and handling instructions are for reference only.

TAPE SPECIFICATIONS

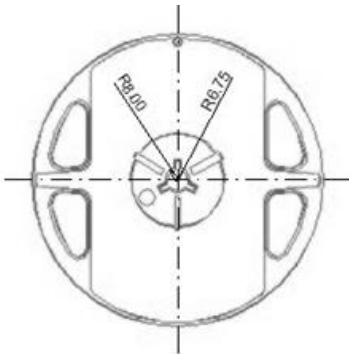
TAPE DIMENSIONS (UNIT: MM)



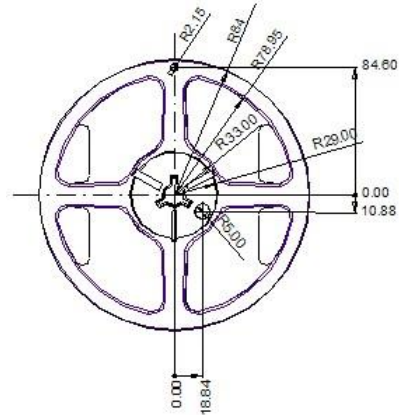
Packing unit 1000pcs / reel, Φ180 mm.

REEL SPECIFICATIONS

REEL DIMENSIONS TOP (UNIT: MM)



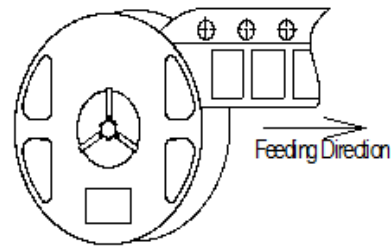
REEL DIMENSIONS BOTTOM (UNIT: MM)



REEL DIMENSIONS SIDE (UNIT: MM)



FEEDING DIRECTION



LOT NUMBERING SCHEME

Yuji LED uses two formats for lot numbering purposes:

1) YYYY-MM-XXX-Z

YYYY: 4-digit manufacturing year
MM: 2-digit manufacturing month
XXX: 3-digit inventory number (000 – 999)
Z: internal alphanumeric code

2) YYYYMMXXX

YYYY: 4-digit manufacturing year
MM: 2-digit manufacturing month
XXX: 3-digit inventory number (000 – 999)