

Surface Mount RGB LED

3.5mm × 2.8mm

multicomp PRO

**RoHS
Compliant**



Features

- Forward Current: R \leq 50mA; G and B \leq 30mA
- Typical view angle 50% Iv: 120°
- Lens Colour: white diffused
- ESD level 1kV(HBM)

Applications

- Indoor decorating
- Outdoor lighting for amusement
- Consumer electronics

Maximum Rating (T_A = 25°C)

Characteristics	Symbol	Typical	Unit
DC Forward Current	I _F	G&B \leq 30 / R \leq 50	mA
Pulse Forward Current ³	I _{PF}	80	mA
Reverse Voltage	V _R	5	V
Power Dissipation	P _D	G&B:80 / R:100	mW
Junction Temperature	T _J	110	°C
Operating Temperature Range	T _{OP}	-40 to +80	
Storage Temperature Range	T _{STG}	-40 to +100	
Soldering Temperature ⁴	T _{SD}	260	

Notes

- 1: There is no maximum or typical voltage parameter
- 2: For other ambient, limited setting of current will be depended on de-rating curves.
- 3: Duty 1/10, pulse width 0.1ms
- 4: The maximum of soldering time is 5 seconds in T_{SD}

Typical Product Characteristics (T_A = 25°C)

Characteristics	Symbol	Min.	Typical	Max.	Unit	Test condition	
Forward Voltage	V _F	R	1.8	2.1	2.6	V	I _F = 20mA
		G	2.8	3.2	3.6		
		B	2.8	3.2	3.6		
Reverse Current	I _R	-	-	10	μA	V _R = 5V	
Luminous Intensity	I _v	R	160	235	-	mcd	I _F = 20mA
		G	800	1200	-		
		B	250	350	-		
Dominant Wavelength	λ _d	R	615	622	630	nm	I _F = 20mA
		G	519	525	534		
		B	461	468	476		
View Angle	2θ _{1/2}	-	120	-	deg	I _F = 20mA	

Notes:

1. Measurement Errors: -, Forward Voltage: \pm 0.1V, Luminous Intensity: \pm 10%I_v, Dominant Wavelength: \pm 1.0nm
2. Electrical-Optical Characteristics (T_A = 25°C)

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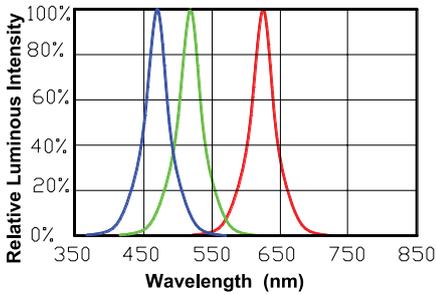
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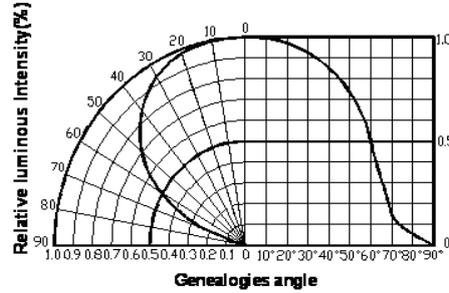
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Electronic-Optical Characteristics Curves

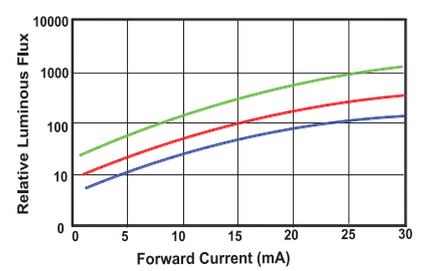
1). Relative Spectral Distribution



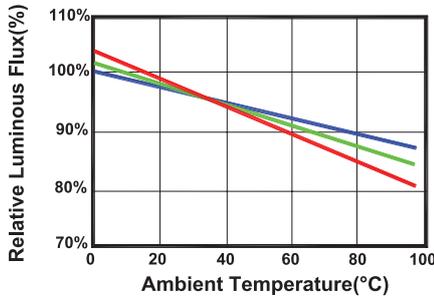
2). Typical Spatial Distribution



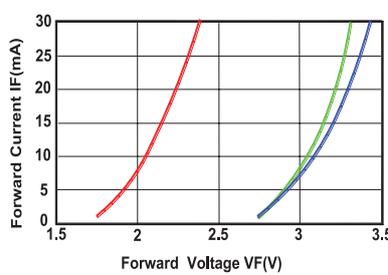
3). Relative Luminous Flux .Current



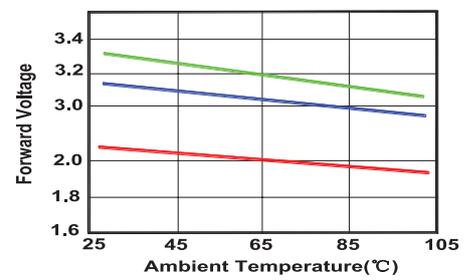
4). Relative Luminous Flux .Ambient Temperature



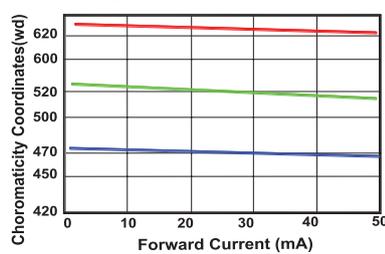
5). Electrical Characteristics



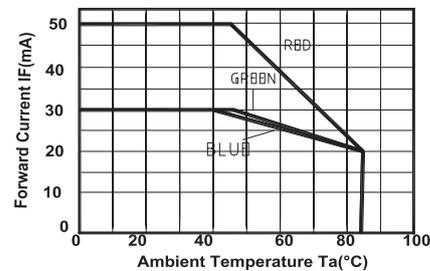
6). Forward Voltage Temperature



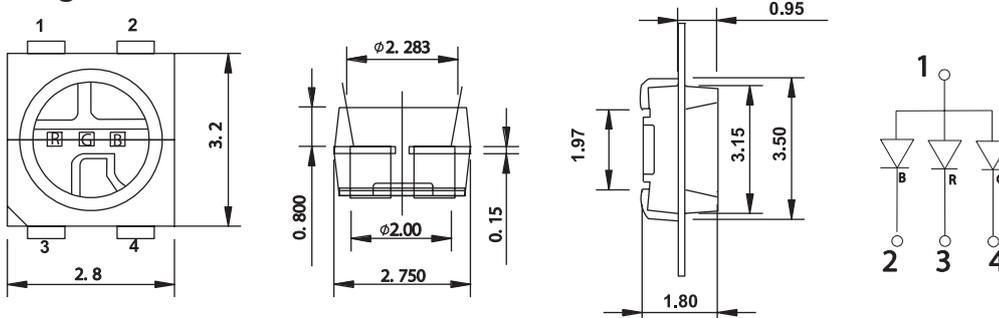
7). Wavelength and Current



8). Thermal Design



Diagram



Dimensions : Millimetres

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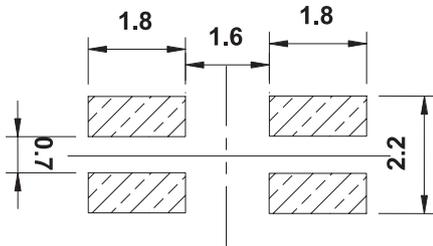
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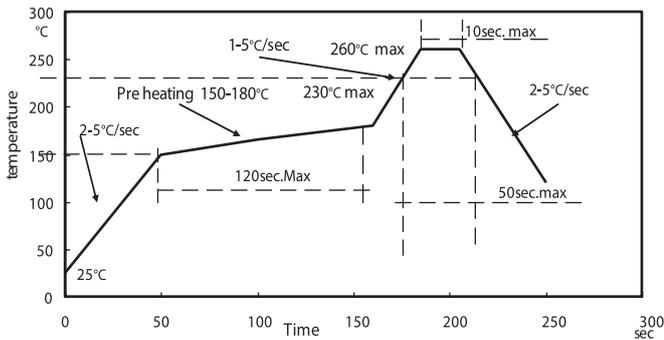
Recommend Pad layout



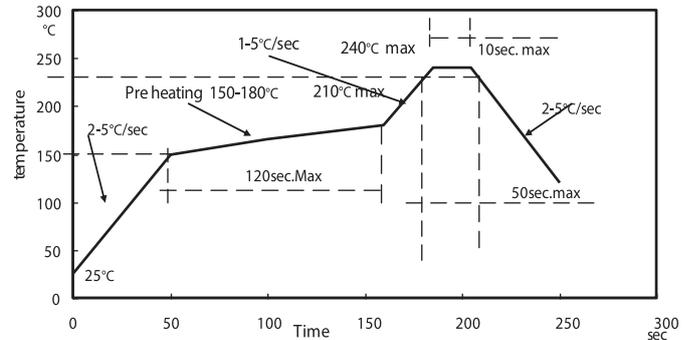
Dimensions : Millimetres
Tolerance is ± 0.1 mm

Reflow Profile

1. Ir reflow soldering Profile for Lead Free solder



2. Ir reflow soldering Profile for Lead solder



Notes

1. We recommend the reflow temperature 240°C ($\pm 5^\circ\text{C}$).the maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the silicone resin while it is exposed to high temperature.
3. Number of reflow process shall be less than 3 times.

Part Number Table

Description	Part Number
Surface Mount RGB LED - 3.5mm × 2.8mm	MP001251

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