

Table of Contents

1. Product Description	2
2. Outline Dimensions	3
3. Electrical and Optical Characteristics	4
• Electrical and Optical Characteristics at $I_F=750\text{mA}$ and $T_A=25^\circ\text{C}$	
• Absolute Maximum Ratings	
4. Typical Characteristics Curves	5
• Typical Light Distribution Curve	
• Typical Angle Radiation Pattern	
• Forward Current vs Relative Luminous Flux	
• Forward Current Derating Curve	
• Electrical Characteristics Curve	
• Relative Flux vs Junction Temperature	
• Relative Spectral Power Distribution	
• Reflow Temperature Time Curve	
5. Reliability Items Test Conditions	7
6. Soldering Conditions	7

1. Product Description



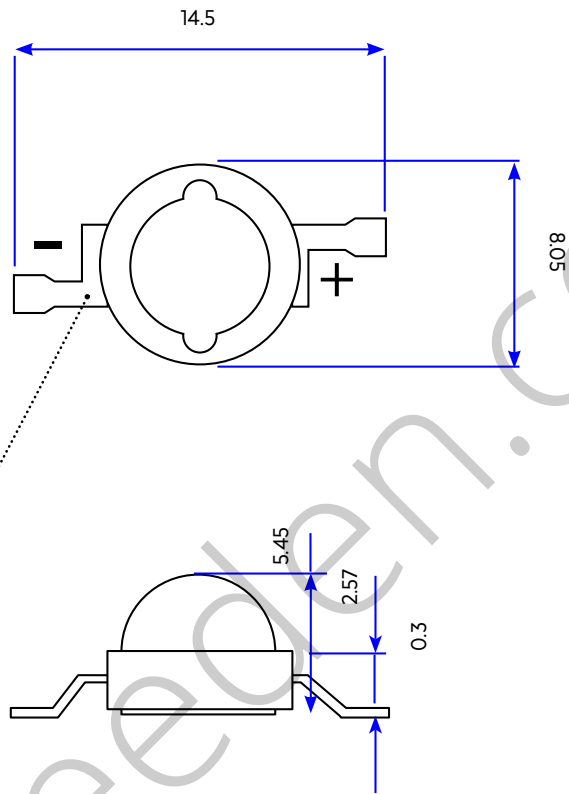
Product features:

- Super High Flux Output and Luminance
- Designed for high Current Operation
- Low Thermal Resistance : 12°C SMT Solder capability
- Lead Free - RoHS and CE compliant
- 3 Year Warranty

Applications:

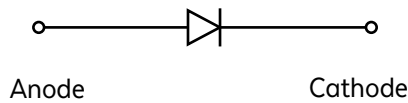
- General Illumination
- Outdoor & Indoor Architectural Lighting
- Decorative Lighting
- Agricultural and Horticultural lighting
- Portable Lighting

2. Outline Dimensions



*note - "-" pin is always identified as larger pin extending further from LED housing

Internal Circuit



Notes:

- All dimensions in millimetres (tolerance :+/- 0.2)
- Appearances may vary slightly for improvement without notice.
- Chip Size 45mil EPILED - 520-530nm

3. Electrical and Optical Characteristics

Electrical and Optical Characteristics at $I_F=750\text{mA}$ and $T_a=25^\circ\text{C}$

Parameter	Symbol	Min	Typical	Max	Unit
Luminous Flux	ϕ_v	100	~	120	lm
Wavelength	λ_D	520	~	530	nm
Forward Voltage	V_F	3.4	~	4.0	V
Power Dissipation	PD	2.55	~	3	W
View Angle	$2\theta_{1/2}$	~	120	~	deg
Thermal Resistance	$R_{\theta J-B}$	~	12	~	$^\circ\text{C/W}$

Absolute Maximum Ratings

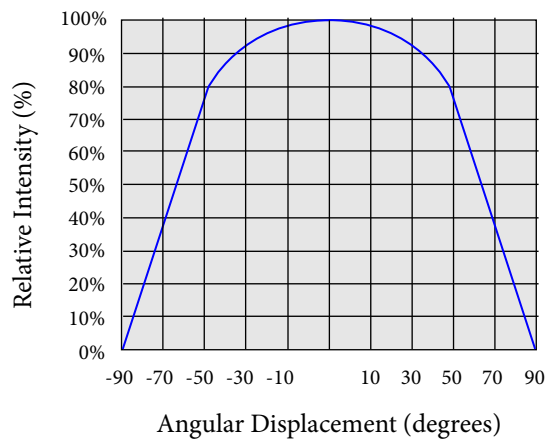
Parameter	Symbol	Value	Unit
Forward Current	I_F	750	mA
Junction Temperature	T_j	115	$^\circ\text{C}$
Operating Temperature	T_{opr}	-40~+60	$^\circ\text{C}$
Storage Temperature	T_{stg}	0~+60	$^\circ\text{C}$
ESD Sensitivity	~	+/- 2,000 V HBM	~
Temperature Coefficient of voltage	~	-5	mV/ $^\circ\text{C}$
DC Pulse Current(@ 1 KHz,10% duty cycle)	I_{FP}	1000	mA
Reverse Voltage	V_R	No reverse operation	

Notes:

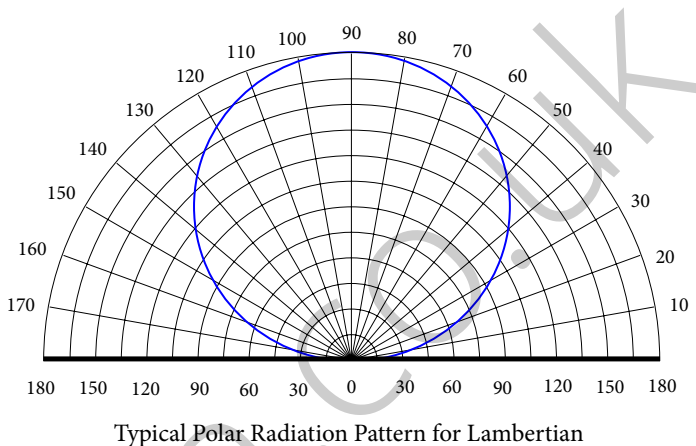
- Tolerance of Luminous Flux is +/- 3%
- Tolerance of Forward Voltage is +/- 0.1v

4. Typical Characteristic Curves

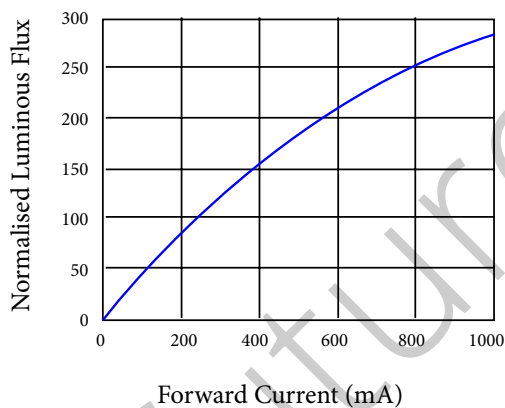
4.1 Typical Light Distribution



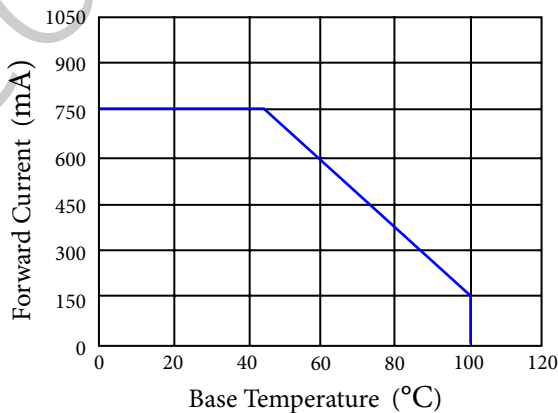
4.2 Typical Light-Emitting Angle Radiation Pattern



4.3 Forward Current vs Relative Luminous Flux Curve

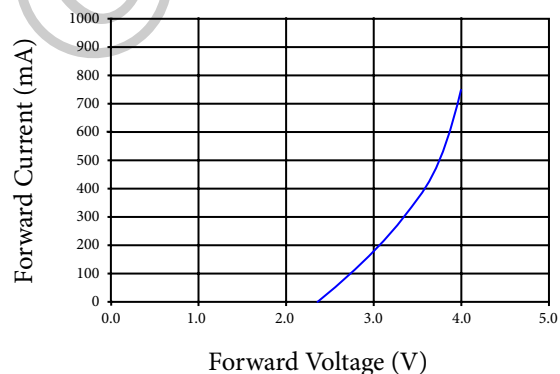


4.4 Forward Current Derating Curve, (Derating based on $t_{max} = 125^{\circ}C$)

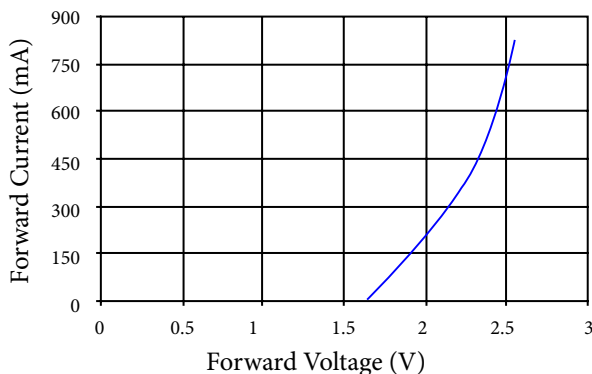


4.5 Electrical Characteristics

White, Royal Blue, Blue, Green, Violet

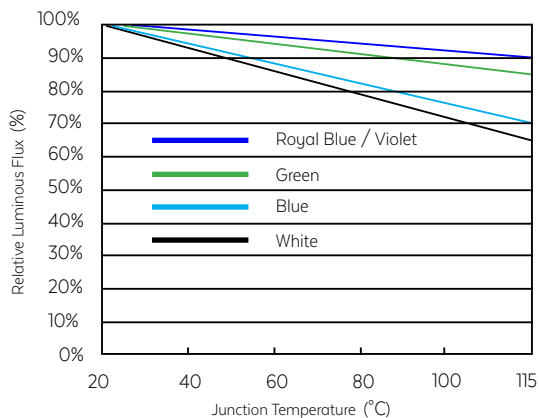


Amber, Red, Deep Red, Far Red



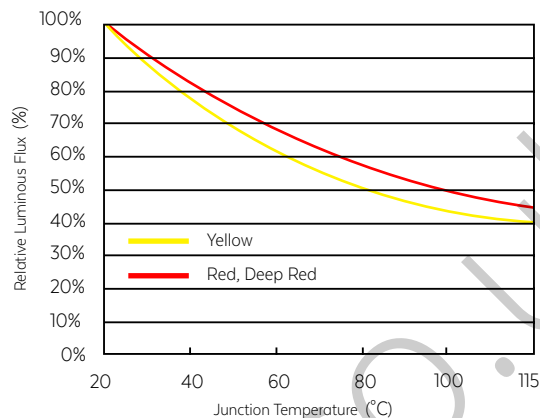
4.6 Relative Flux vs Junction Temperature (if 350mA)

White, Royal Blue, Blue, Green, Violet

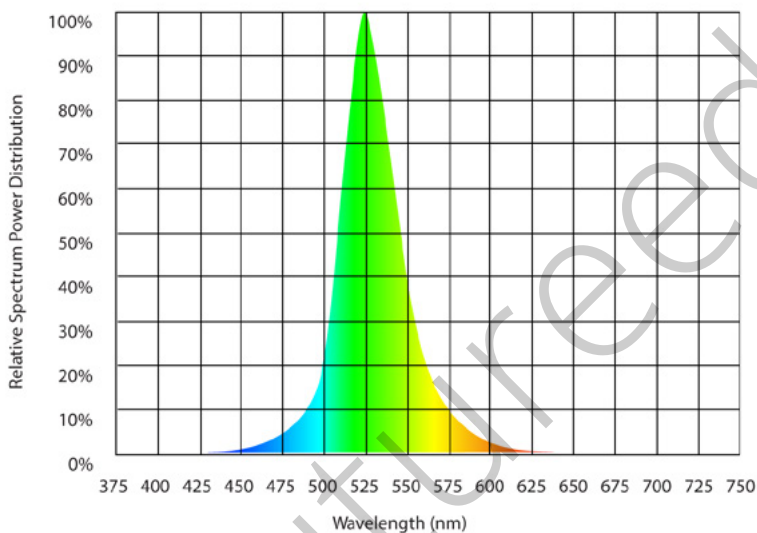


4.7 Relative Flux vs Junction Temperature (if 400mA)

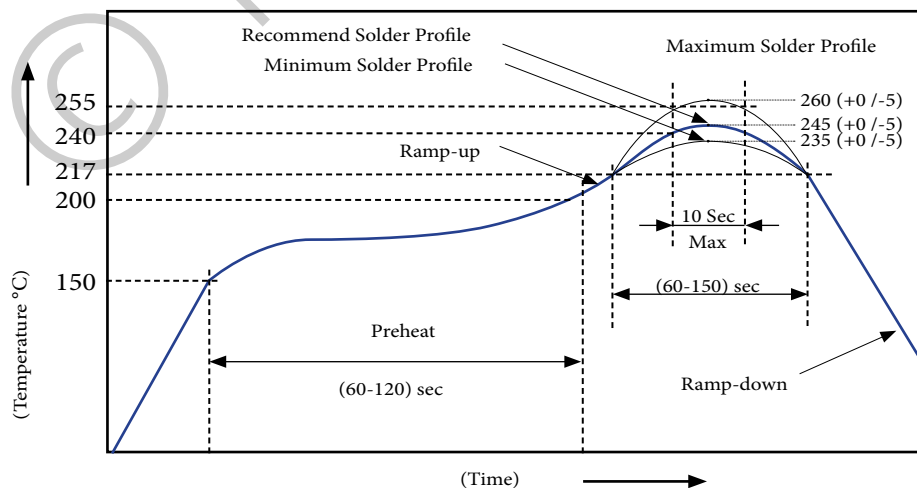
Amber, Red, Deep Red



4.8 Relative Spectral Power Distribution



4.9 Reflow Temperature Time Curve



5. Reliability Items and Test Conditions

Test Items	Test Condition	Test Hours Cycle	Sample Size	Ac/Re
DC Aging	Ta = 25 °C if 750mA	1000H	22	0/1
Hot and Cold Shock	-40°C/30min +100 °C/30min	100 Cycles	22	0/1
High Temperature Storage	Ta=100 °C	1000H	22	0/1
High Temperature High Humidity	85 °C/85%RH	1000H	22	0/1
Low Temperature Storage	Ta=-40 °C	1000H	22	0/1
ESD (HBM)	2000V HBM	1Time	10	0/1

Criteria for Judging Damage

Items	Symbol	Test Condition	Criteria for Judging Damage
Forward Voltage	VF	IF=750mA	Initial Data±10%
Reverse Current	IR	VR=5V	IR≤10μA
Luminous Flux	φv	IF=750mA	Average φv degradation ≤20% Single LED φv degradation ≤30%

6. Soldering Conditions

Reflow Soldering			Manual Welding	
	High Temperature PC	Moulding Products	Temperature	Soldering Time
Preheat	100-140 °C	180-200 °C	Highest 350°C	3sec once
Heat Up Time	120sec Max	120sec Max		
Peak Temperature	180 °C Max	260°C Max		
Condition of Soldering Time	50sec Max	10sec Max		