Cree® SMD LED
Model # LM1-PRG1-01-N2
Data Sheet

120-degree, 3.2 x 2.8-mm, SMT LED in red and green colors with water-transparent lens

Applications

- Indicators
- Illuminations
- LCD Back Lights
- Automobile Applications

Absolute Maximum Ratings (T_A = 25°C)

Items	Symbol	Absolute Maximum Rating		Unit
		R	G	
Forward Current Note 1	I_F	50	25	mA
Peak Forward Current Note 2	I_{FP}	200	100	mA
Reverse Voltage	V_R	5	5	V
Power Dissipation	P_D	125	100	mW
Operation Temperature	T_{opr}	-40 ~ +100		°C
Storage Temperature	T_{stg}	-40 ~ +100		°C
Junction Temperature	T_J	110		°C
Junction/ambient	R_{THJA}	450	400	°C/W
Junction/solder point	R_{THJS}	300	280	°C/W

Notes:
1. Pulse width ≤0.1 msec, duty ≤1/10.
2. R_{TH} test condition: mounted on PC Board FR 4 (pad size ≥16mm²)

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

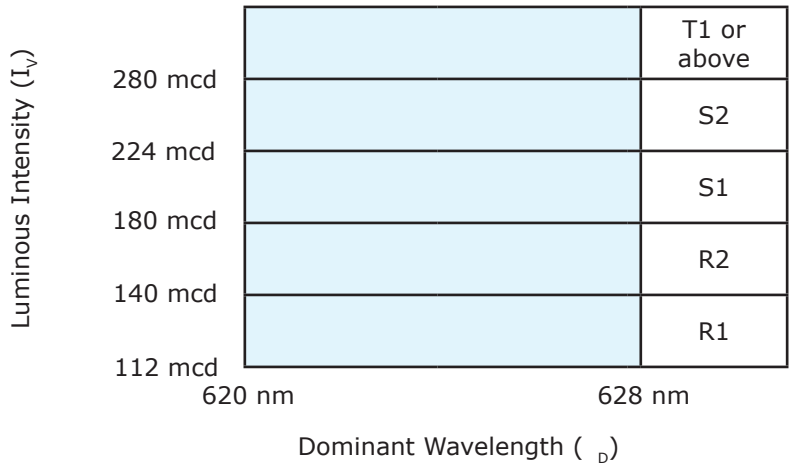
Characteristics	Condition	Symbol	Values		Unit
			R	G	
Wavelength at peak emission	I_F = 20 mA	$_{PEAK}$	624	527	nm
Dominant Wavelength	I_F = 20 mA	$_{DOM}$	620~628	520~540	nm
Spectral bandwidth at 50% I_{REL} max	I_F = 20 mA	Δ	23	38	nm
Viewing Angle at 50% I_V	I_F = 20 mA	2 ½	120	120	deg
Forward Voltage	I_F = 20 mA	$V_{F(avg)}$	2.0	3.4	V
		$V_{F(max)}$	2.5	4.0	V
Luminous Intensity	I_F = 20 mA	$I_{V(min)}$	112	280	mcd
		$I_{V(avg)}$	180	450	mcd
Reverse Current (max)	V_R = 5 V	I_R	10	10	A

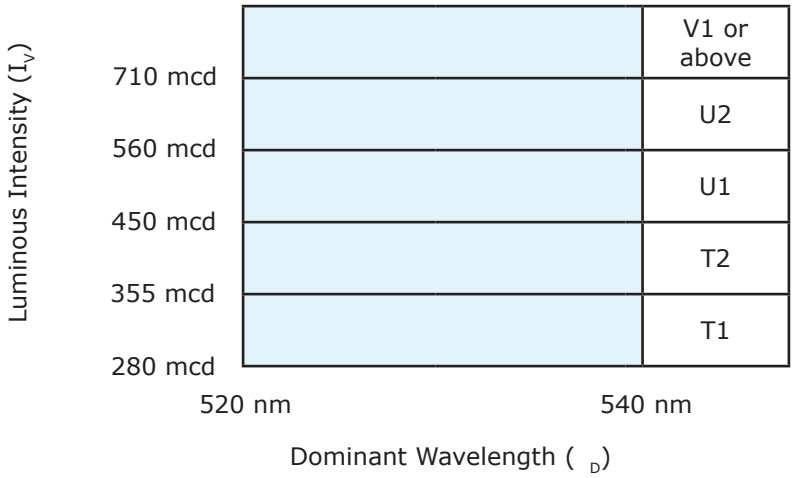
Standard Bins for LM1-PRG1-01-N2 (I_F = 20 mA)

Lamps are sorted to luminous intensity (I_V) and dominant wavelength ($_D$) bins shown.

Orders for LM1-PRG1-01-N2 may be filled with any or all bins contained as below.

All luminous intensity (I_V) and dominant wavelength ($_D$) values shown and specified are at I_F = 20 mA.





Important Notes:

1. All ranks will be included per delivery; rank ratio will be based on the dice distribution.
2. Tolerance of measurement of luminous intensity is ±10%.
3. Tolerance of measurement of the dominant wavelength is ±1 nm.
4. Tolerance of measurement of V_F is ±0.05 V.
5. Packaging methods are available for selection; please refer to the "Cree LED Lamp Packaging Standard" document.
6. Please refer to the "Cree LED Lamp Reliability Test Standards" document for reliability test conditions.
7. Please refer to the "Cree LED Lamp Soldering & Handling" document for information about how to use this LED product safely.

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Graphs

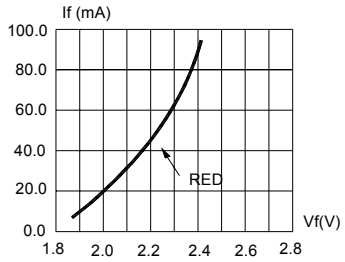
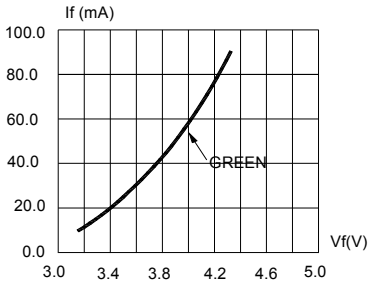


FIG.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



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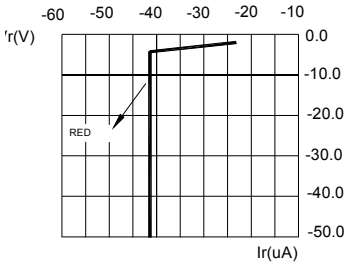
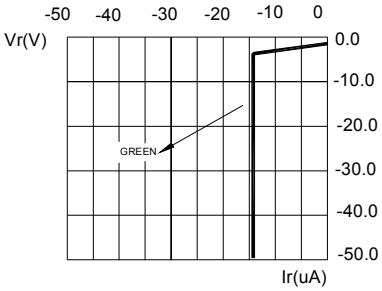


FIG.2 REVERSE CURRENT VS. REVERSE VOLTAGE.



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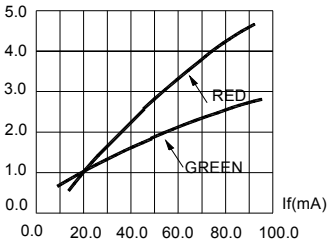

FIG.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

Half Power R: △WL= 23nm
G: △WL=38nm

Domi R: WL= 624nm
G: WL=527nm

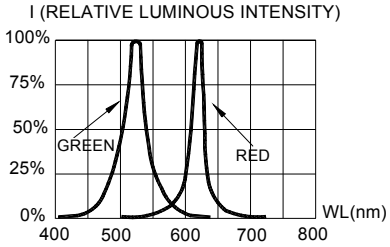

FIG.4 RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH.

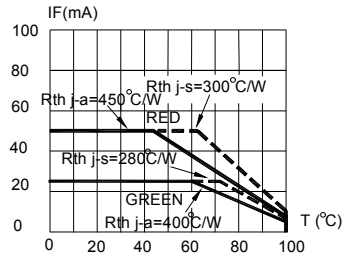

FIG.5 MAXIMUM FORWARD DC CURRENT VS TEMPERATURE. DERATING BASED ON Tjmax=110℃

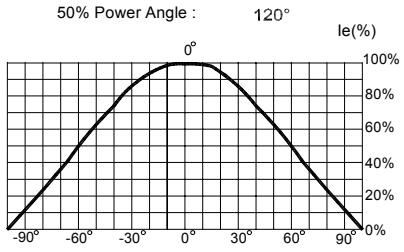

FIG.6 SPATIAL DISTRIBUTION.

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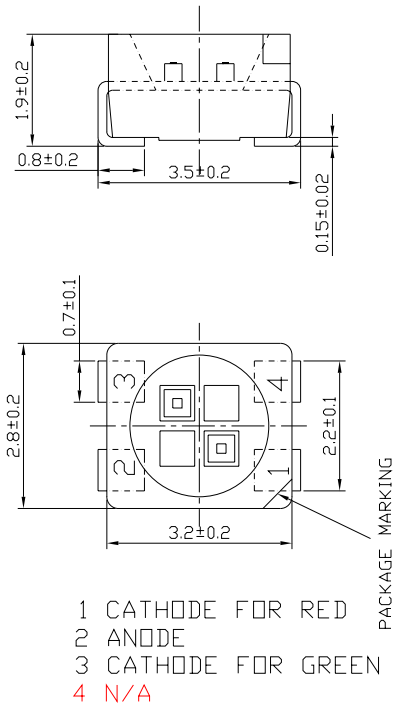
Mechanical Dimensions

All dimensions are in mm.



Notes

RoHS Compliance

The levels of environmentally sensitive, persistent biologically toxic (PBT), persistent organic pollutants (POP), or otherwise restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), as amended through April 21, 2006.

Vision Advisory Claim

Users should be cautioned not to stare at the light of this LED product. The bright light can damage the eye.

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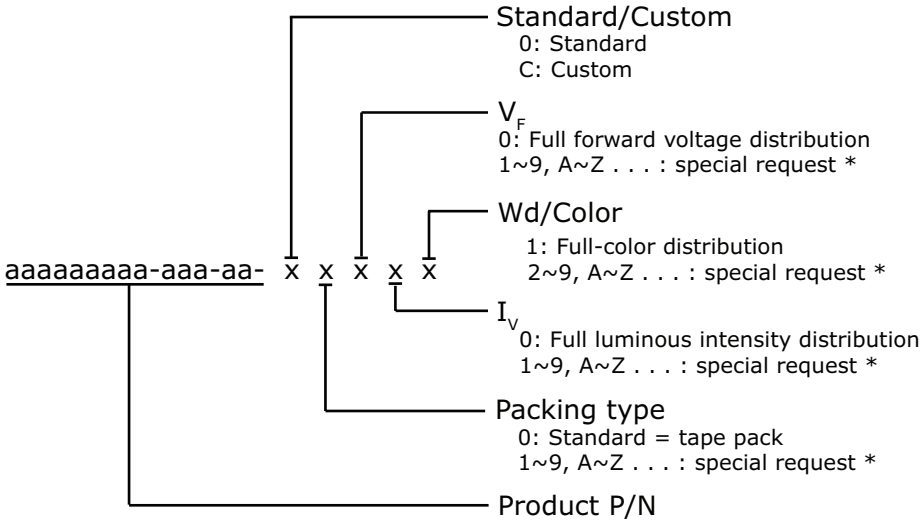
Kit Number System

Cree LED lamps are tested and sorted into performance bins. A bin is specified by ranges of color, forward voltage, and brightness. Sorted LEDs are packaged for shipping in various convenient options. Please refer to the "Cree LED Lamp Packaging Standard" document for more information about shipping and packaging options.

Cree LEDs are sold by order codes in combinations of bins called kits. Order codes are configured in the following manner:



* Contact your Cree sales representative for ordering information.

Standard Available Kits*

Kit Number	Description
LM1-PRG1-01-N2-00001	SMD 120 High Red and Pure Green, FULL RANK, Tape & Reel

* Please contact your Cree representative about the availability of non-standard kits.

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