

SMR12RG4-TR

Red/Green

Surface Mount LED

3.0 × 2.0 × 1.0 mm Chip LED

130° viewing angle

DWG BY:
LO / GP
04-19-12

CHK BY:
PL
04-25-12

QA:
RTD
04-20-12

REVISION LTR: E
ECR#: 041112-RTD01
04-19-12

Absolute Maximum Ratings At Ta=25°C

Parameter	Green	Red	Unit
Power Dissipation	100	100	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	120	120	mA
DC Forward Current	30	30	mA
Derating Linear From 25°C	0.6	0.6	mA/°C
Reverse Voltage	5	5	V
Operating Temperature Range	-55°C to + 85°C		
Storage Temperature Range	-55°C to + 85°C		
Wave Soldering Condition	260°C For 5 Seconds		
Infrared Soldering Condition	260°C For 5 Seconds		
Vapor Phase Soldering Condition	215°C For 3 Minutes		

Electrical / Optical Characteristics At Ta=25°C

Parameter	Symbol		Green	Red	Unit	Test Condition
Luminous Intensity	IV	MIN.	4.50	1.80	mcd	IF =20mA Note 1
		TYP.	16.0	8.0		
		MAX.				
Viewing Angle	2θ1/2	TYP.	130	130	deg	Note 2 (Fig.6)
Peak Emission Wavelength	λP	TYP.	567	632	nm	Measurement @Peak (Fig.1)
Dominant Wavelength	λd	TYP.	572	619	nm	IF =20mA Note 3
Spectral Line Half-Width	Δλ	TYP.	30	43	nm	
Forward Voltage	VF	TYP.	2.2	2.0	V	IF =20mA
		MAX.	2.6	2.6		
Reverse Current	IR	TYP.	10	10	μA	VR = 5V
Capacitance	C	TYP.	35	20	PF	VF=0, f=1MHZ
Chromaticity Coordinates	X		0.46	0.69		IF =20mA
	Y		0.53	0.31		

Notes: 1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
 2. θ 1/2 is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
 3. The dominant wavelength, λd is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

Bin Code List

Luminous Intensity		Color : <u>Green</u> , Unit : mcd @20mA	
Bin Code	Min.	Max.	
J	4.50	7.10	
K	7.10	11.2	
L	11.2	18.0	
M	18.0	28.0	

Tolerance on each Intensity bin is +/-15%

Luminous Intensity		Color : <u>Red</u> , Unit : mcd @20mA	
Bin Code	Min.	Max.	
G	1.80	2.80	
H	2.80	4.50	
J	4.50	7.10	
K	7.10	11.2	

Tolerance on each Intensity bin is +/-15%

Typical Electrical / Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)

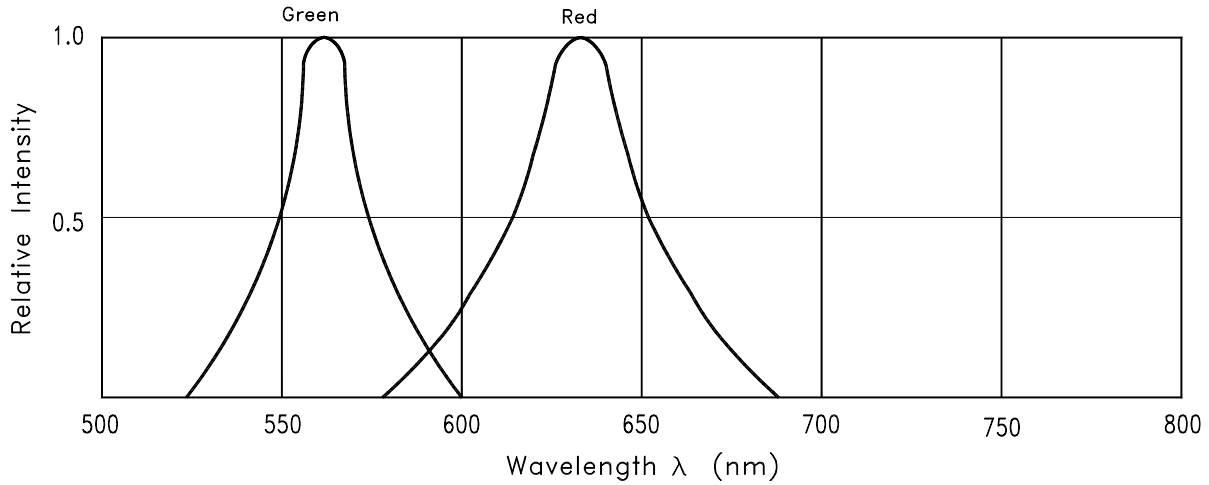


Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

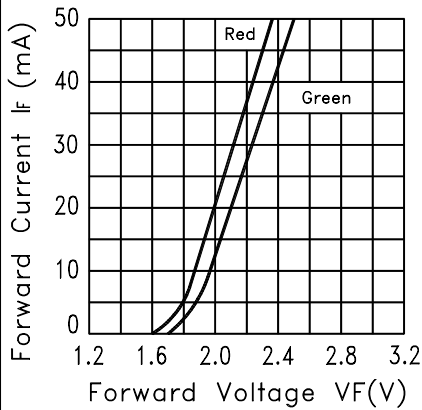


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

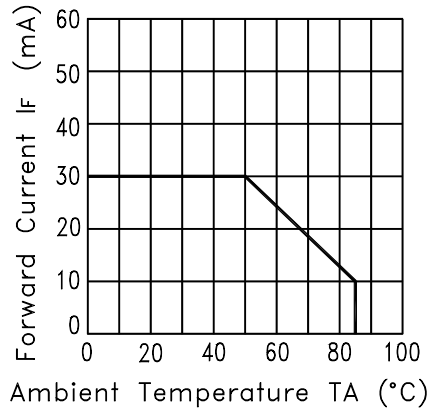


Fig.3 FORWARD CURRENT DERATING CURVE

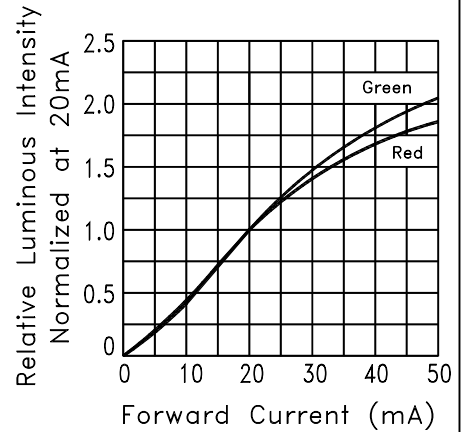


Fig.4 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

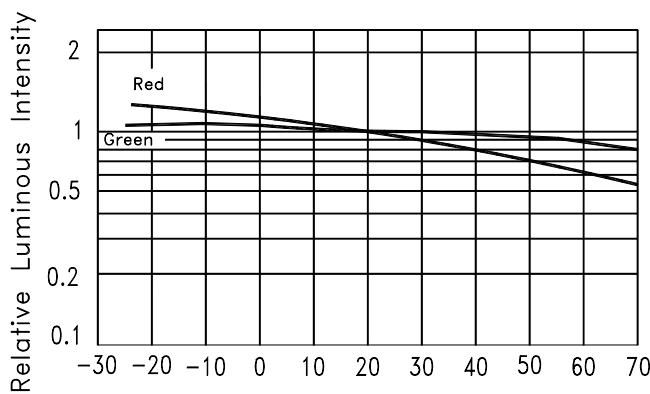


Fig.5 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

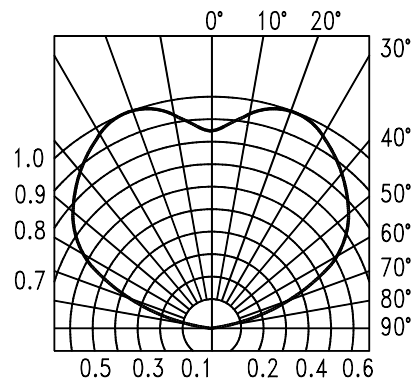
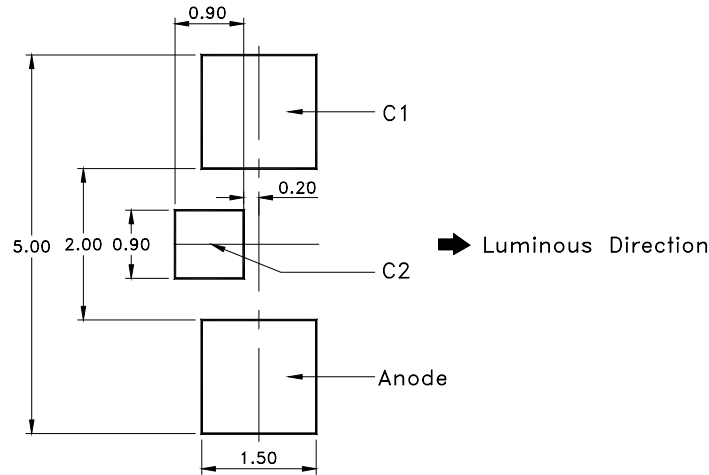


Fig.6 SPATIAL DISTRIBUTION

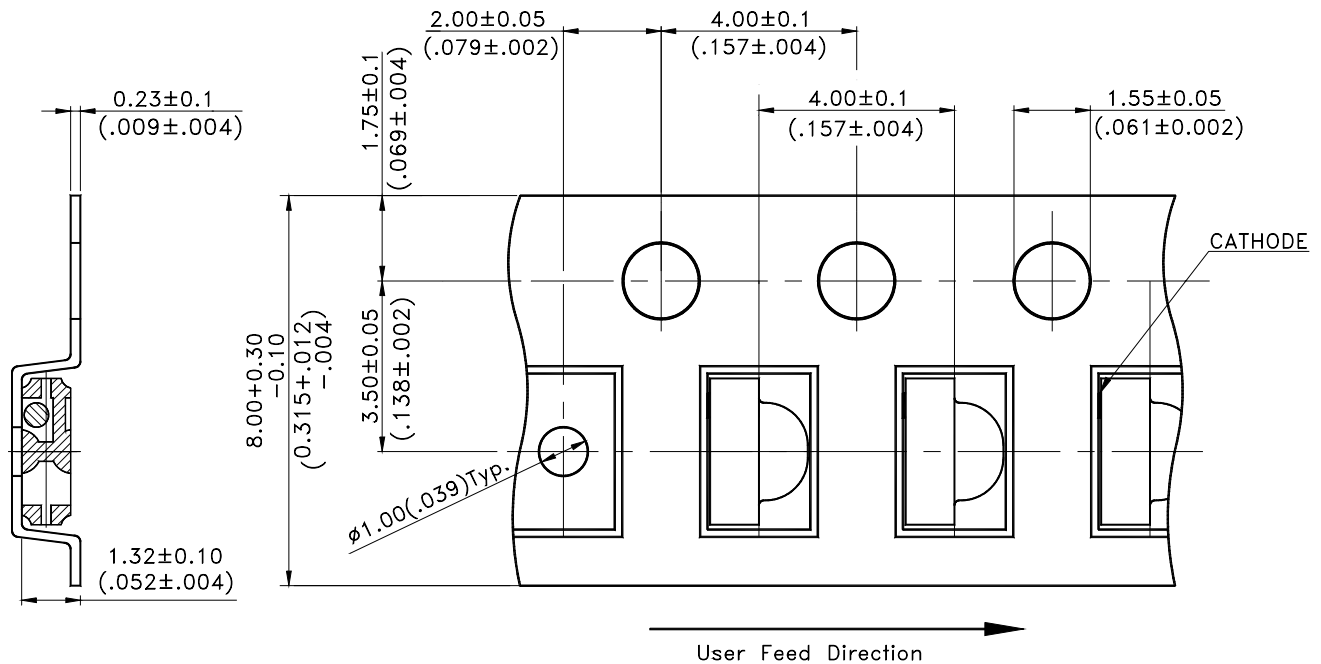
Cleaning

Do not use unspecified chemical liquid to clean LED they could harm the package.
 If clean is necessary, immerse the LED in ethyl alcohol or in isopropyl alcohol at normal temperature for less one minute.

Suggest Soldering Pad Dimensions

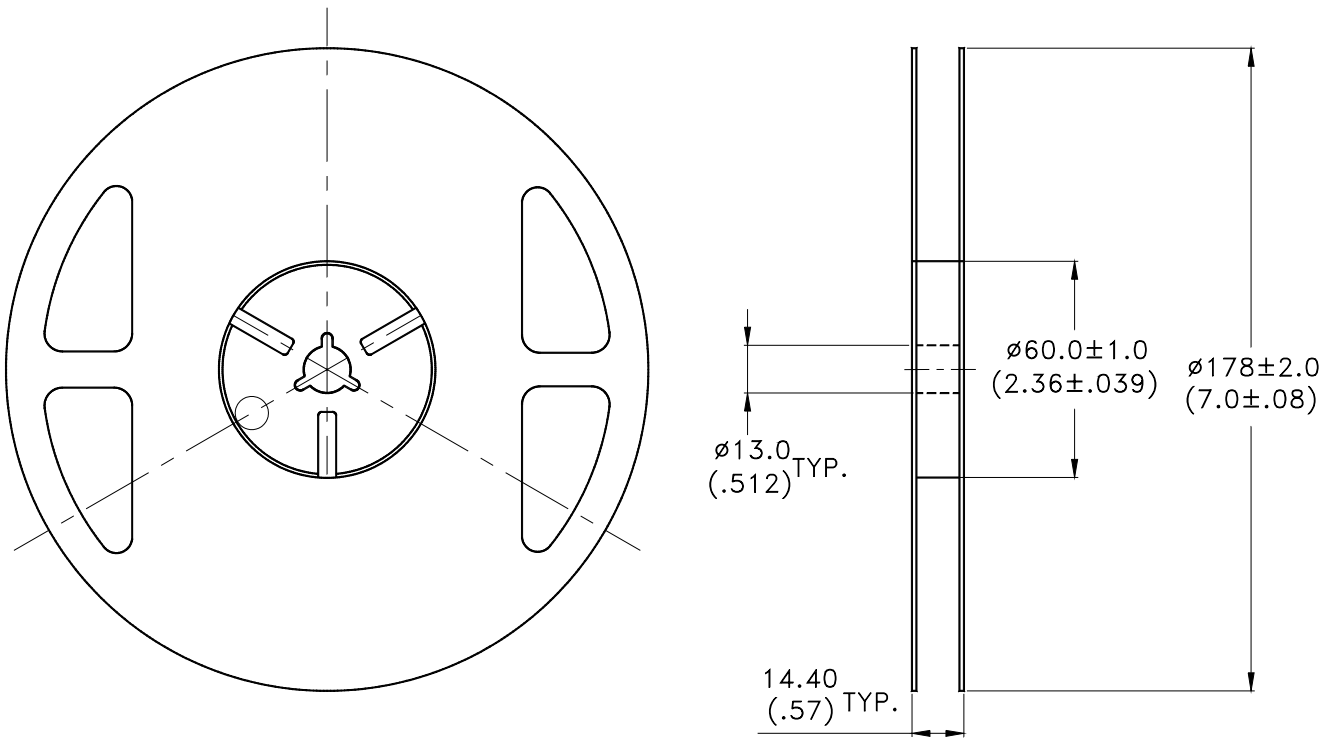


Package Dimensions Of Tape And Reel



Notes:

1. All dimensions are in millimeters (inches).

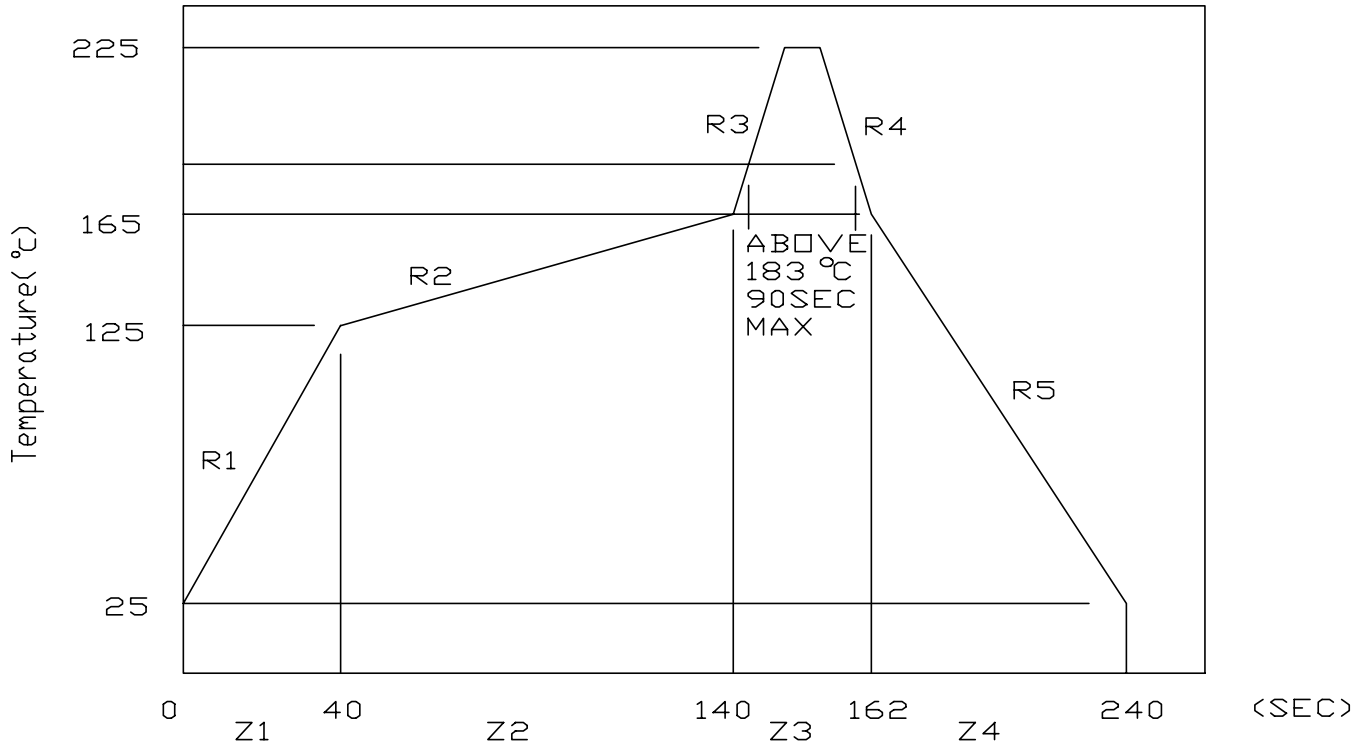


Notes:

1. Empty component pockets sealed with top cover tape.
2. 7 inch reel-3000 pieces per reel.
3. Minimum packing quantity is 500 pcs for remainders.
4. The maximum number of consecutive missing lamps is two.
5. In accordance with ANSI/EIA 481-1-A-1994 specifications.

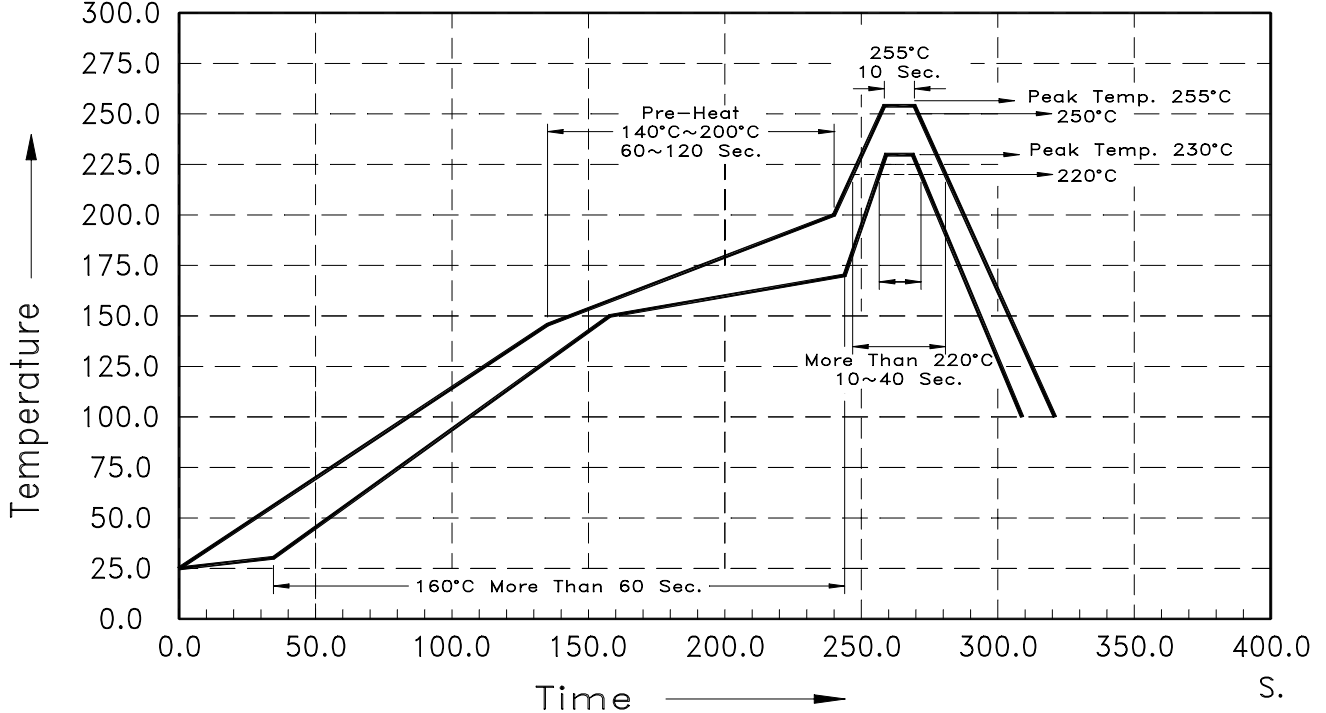
Suggestion Profile:

(1) Suggestion IR Reflow Profile For Normal Process



(2) Suggestion IR Reflow Profile For Pb Free Process

Degree C. Recommended Profile Between Assemble And Heat-Resistance Line



The Profile is available that must to use SnAg_(x=3.3~3.8) Cu_(y=0.2~0.7) solder paste