March 2005

FOL675CIW_7947D
Low Profile Surface Mount LED (Preliminary)

Features

- Small package dimensions of 3.2(L) x 3.2(W) x0.8(H) mm
- InGaN technology
- Moderate viewing angle of 120°
- Available in 0.315" (8mm) width tape on 7" (178mm) diameter reel; units per reel TBD

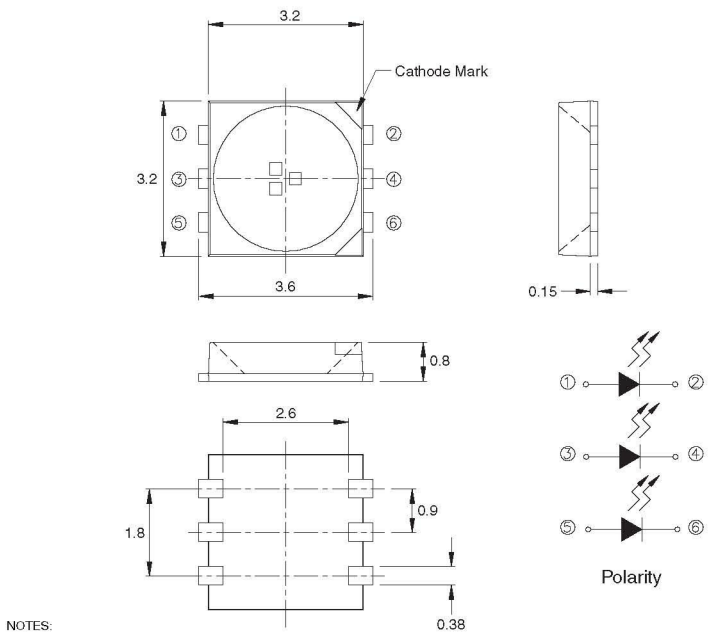
Description

This ultra bright low profile surface mount white LED offers high luminous intensity, wide viewing angle and low power consumption. It is compatible with both IR reflow and TTW (Through-the-Wave) soldering.

Applications

- Status indication for consumer electronics and office equipment
- Information display lighting
- Flash or auxiliary lighting

Package Dimensions



NOTES:

Tolerance unless mentioned is ±0.1mm, Unit = mm

Absolute Maximum Ratings (T_A = 25°C Unless otherwise specified)

Parameter	Symbol	FOL675CIW_7947D	Units
Reverse Voltage	V_R	5	V
Operating Temperature	T_{OPR}	-40 to +85	°C
Storage Temperature	T_{STG}	-40 to +100	°C
Soldering Temperature	T_{SOL}	260 for 5 sec	°C
Electrostatic Discharge	ESD	150	V
Power Dissipation(1)	P_D	110	mW
Forward Current(1)	I_F	25	mA
Peak Forward Current(1) (f = 1 KHz, Duty Factor = 1/10)	I_{FP}	100	mA

[1]The values are based on 1 die performance.

Electrical/Optical Characteristics (T_A = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I_V	1045	1500	—	mcd	I_F = 20mA(2)
		—	4000	—		I_F = 60mA(1)
Viewing Angle(2)	$2\Theta^1/_2$	—	120	—	°	I_F = 20mA
Forward Voltage(2)	V_F	—	3.5	4.0	V	I_F = 20mA
Reverse Current	I_R	—	—	50	µA	V_R = 5V
Chromatic Coordinate	λ_D		See page 3			I_F = 20mA

[1]When three LED dies are operated simultaneously.

[2]For each die.

Color Ranks (I_F = 20mA, Ta = 25°C)

	Bin a0			
x	0.280	0.264	0.283	0.296
y	0.248	0.267	0.305	0.276

	Bin b5			
x	0.296	0.311	0.307	0.287
y	0.276	0.294	0.315	0.295

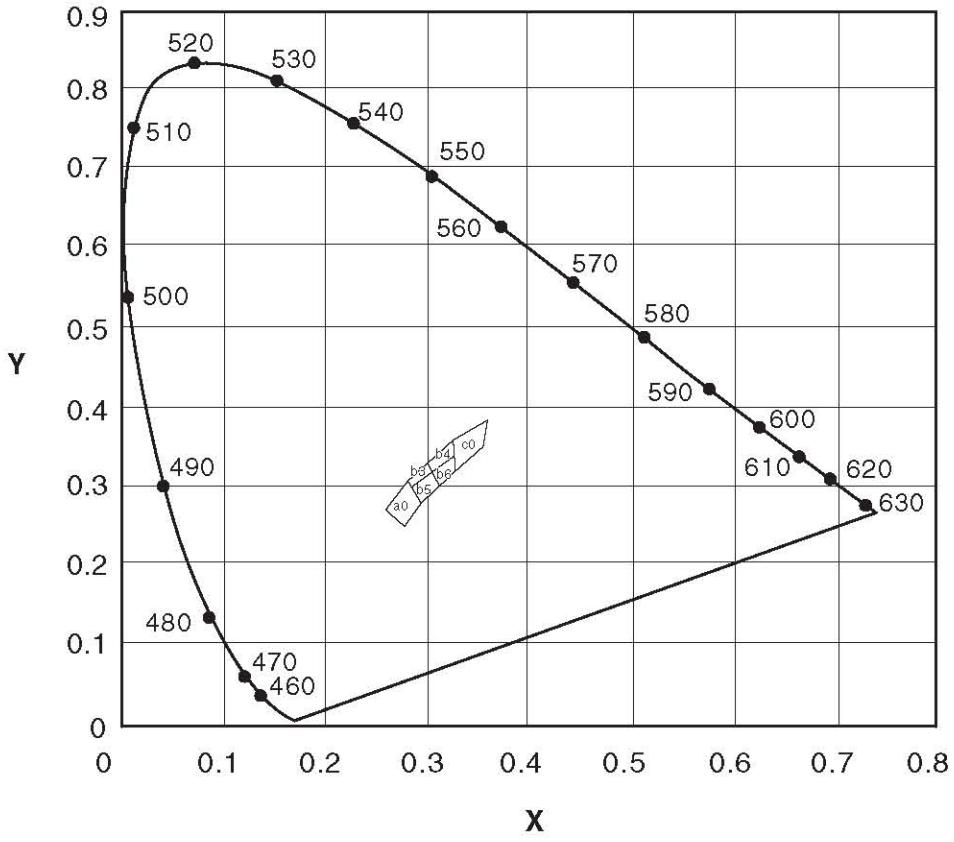
	Bin b3			
x	0.307	0.287	0.304	0.283
y	0.315	0.295	0.330	0.305

	Bin b6			
x	0.311	0.307	0.330	0.330
y	0.294	0.315	0.318	0.339

	Bin b4			
x	0.307	0.330	0.330	0.304
y	0.315	0.339	0.360	0.330

	Bin c0			
x	0.330	0.330	0.361	0.356
y	0.318	0.360	0.385	0.351

Chromaticity Diagram



Typical Performance Curves

Fig. 1 Forward Voltage*

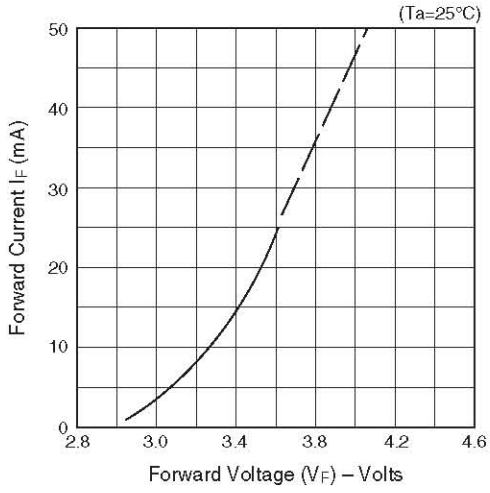


Fig. 2 Luminous Intensity vs. Forward Current*

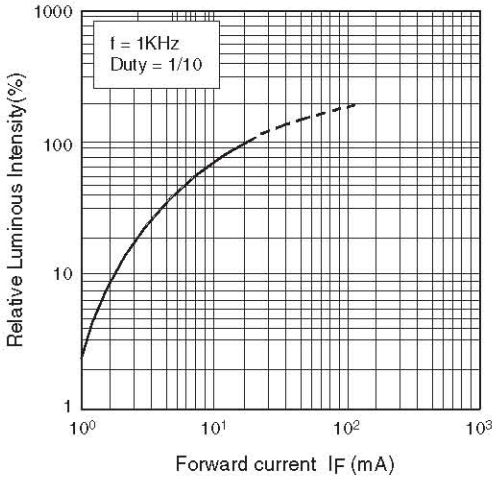


Fig. 3 Forward Current Derating Curve*

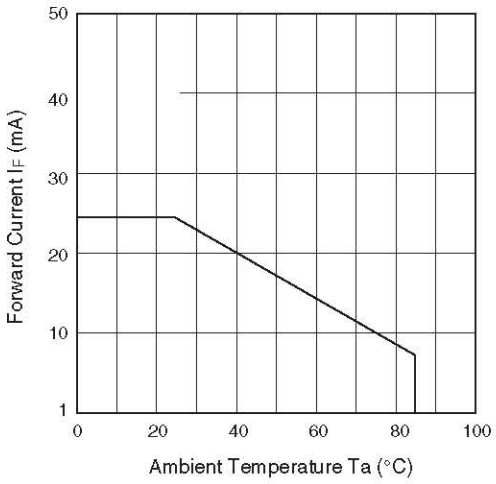


Fig. 4 Spectrum Distribution

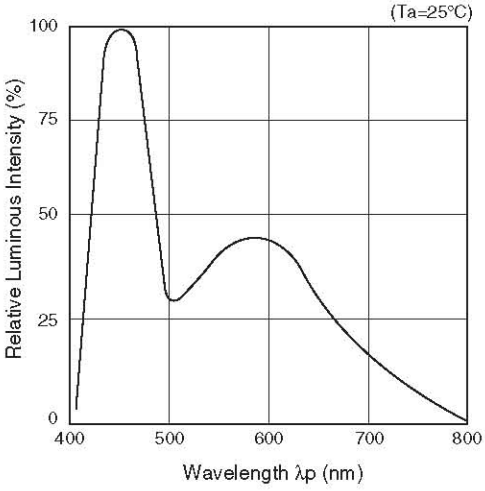


Fig. 5 Radiation Diagram

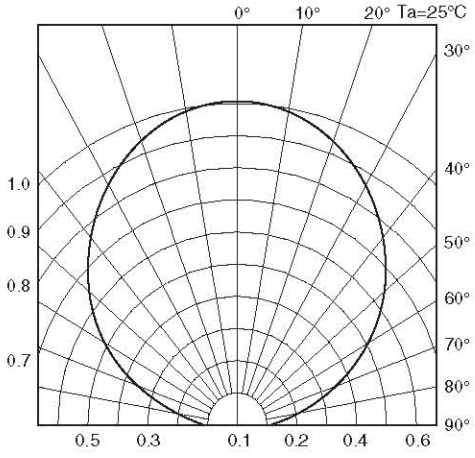
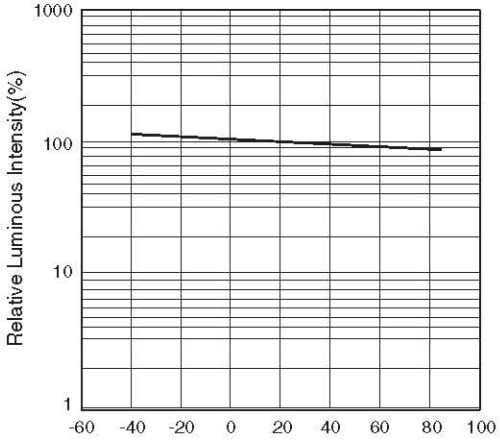
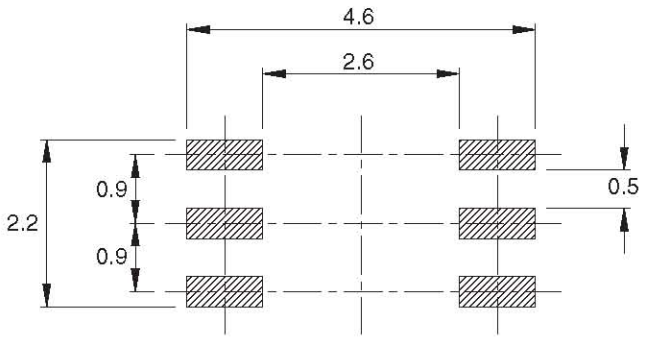


Fig. 6 Luminous Intensity vs. Ambient Temperature

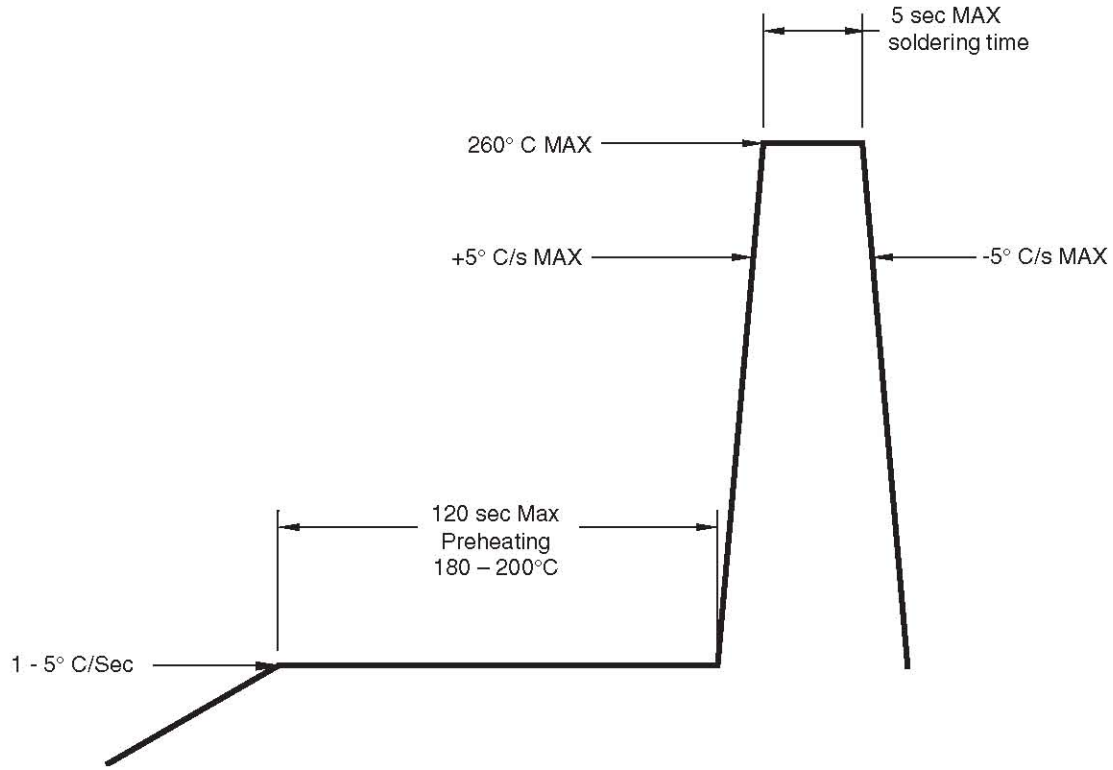


Tape and Reel Dimensions

Recommended Printed Circuit Board Pattern



Recommended IR Reflow Soldering Profile



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