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# **SURFACE MOUNT CHIP LED LAMPS**

## **DATA SHEET**

**MODEL NO: GT5630-8W1AHXX**

**REV. : 1.0**

**DATE : 01-Apr.-2009**

## Features

- . P-LCC-2 package.
- . White package.
- . Optical indicator.
- . Colorless clear window.
- . Pb-free.
- . Wide viewing angle.
- . Computable with automatic placement equipment.
- . Suitable for vapor-phase reflow, Infrared reflow and wave solder processes.
- . The product itself will remain within RoHS compliant version



## Descriptions

The GT5630 series is available in soft orange, green, blue, and yellow. Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector. This feature makes ideal for light pipe application. The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

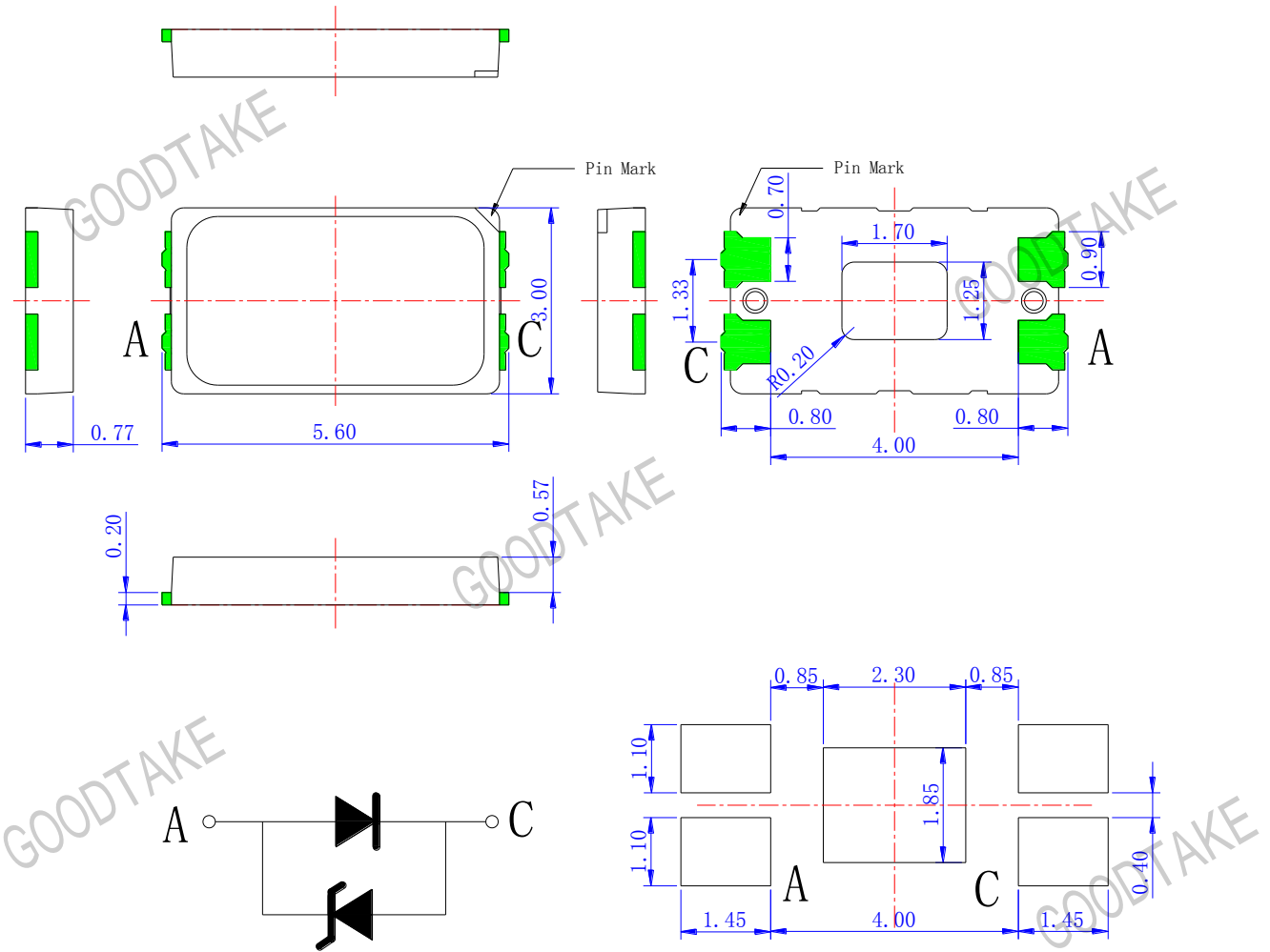
## Applications

- . Optical indicator
- . indicator and backlighting in telephone and fax.
- . Flat backlight for LCD, switch and symbol.
- . Light pipe application.
- . General use.

## Device Selection Guide

Material	Resin (mold)	Resin Color	Emitted Color
InGaN	Epoxy	Yellow Diffused	White

## Package Dimension



**Note:** The tolerances unless mentioned is  $\pm 0.1\text{mm}$ , Unit = mm  
**Absolute Maximum Rating (Ta=25°C)**

Item	Symbol	Condition	Absolute Maximum Rating	Unit
Forward Current	I <sub>F</sub>		120	mA
Power Dissipation	P <sub>D</sub>		460	mW
Operating Temperature	T <sub>opr</sub>		-40~+85	°C
Storage Temperature	T <sub>stg</sub>		-55~+100	°C
Electrostatic Discharge	ESD		2000 (HBM)	V

**Electrical and Optical Characteristics at (Ta=25°C)**

Item	Symbol	Condition	Min	Typ	Max	Unit
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =120mA	2.8	--	3.6	V
50%Power angle	2θ1/2		--	120	--	Deg
Luminous Flux	Φ <sub>v</sub>		7500	--	12500	Mcd
Chromaticity Coordinates	CIE-X		0.3782	--	0.4946	--
	CIE-Y		0.3620	--	0.4551	--
Reverse Voltage	V <sub>R</sub>	I <sub>R</sub> =5mA		0.9	1.2	V

**Luminous Flux (lm at 120mA)**

Rank	Min (mcd)	Max (mcd)
Q1	7500	8500
Q2	8500	9500
Q3	9500	10500
Q4	10500	11500
Q5	11500	12500

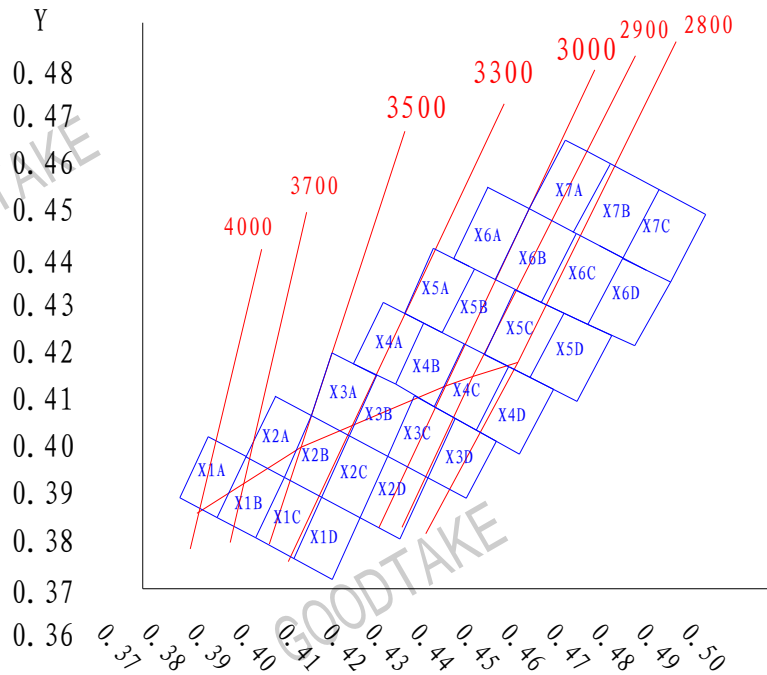
\*Measurement Uncertainty of Luminous Intensity: ±10%.

**Forward Voltage Combination (V at 120mA)**

Rank T	0	1	2	3
Forward Voltage	2.8~2.9	2.9~3.0	3.0~3.1	3.1~3.2
Rank R	0	1	2	3
Forward Voltage	3.2~3.3	3.3~3.4	3.4~3.5	3.5~3.6

\*Measurement Uncertainty of Forward Voltage: ±0.1V.

## Color Combination ( IF= 120mA)



## Color Ranks(IF=120mA,Ta=25°C)

Color Ranks		CIE			
X1A	X	0.3782	0.3864	0.3929	0.3845
	Y	0.3793	0.3751	0.3881	0.3922
X1B	X	0.3864	0.395	0.4013	0.3929
	Y	0.3751	0.3708	0.3836	0.3881
X1C	X	0.395	0.4035	0.4096	0.4013
	Y	0.3708	0.3664	0.3794	0.3836
X1D	X	0.4035	0.4119	0.4181	0.4096
	Y	0.3664	0.362	0.3751	0.3794
X2A	X	0.3929	0.4013	0.4073	0.3994
	Y	0.3881	0.3836	0.3967	0.4008
X2B	X	0.4013	0.4096	0.4157	0.4073
	Y	0.3836	0.3794	0.3924	0.3967
X2C	X	0.4096	0.4181	0.4242	0.4157
	Y	0.3794	0.3751	0.3881	0.3924
X2D	X	0.4181	0.4269	0.4331	0.4242
	Y	0.3751	0.3706	0.3835	0.3881
X3A	X	0.4073	0.4157	0.4217	0.4119
	Y	0.3967	0.3924	0.4052	0.410
X3B	X	0.4157	0.4242	0.4302	0.4217
	Y	0.3924	0.3881	0.401	0.4052
X3C	X	0.4242	0.4331	0.4391	0.4302

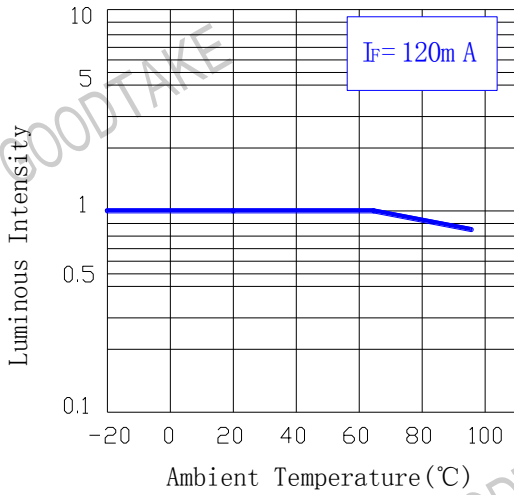
	Y	0.3881	0.3835	0.3961	0.401
X3D	X	0.4331	0.4416	0.4482	0.4391
	Y	0.3835	0.3792	0.3913	0.3961
X4A	X	0.4166	0.426	0.4321	0.4232
	Y	0.4077	0.4034	0.4163	0.4207
X4B	X	0.426	0.4345	0.4411	0.4321
	Y	0.4034	0.3986	0.4119	0.4163
X4C	X	0.4345	0.4437	0.4509	0.4411
	Y	0.3986	0.3937	0.4071	0.4119
X4D	X	0.4437	0.4533	0.4609	0.4509
	Y	0.3937	0.3885	0.4023	0.4071
X5A	X	0.4280	0.4362	0.4434	0.4343
	Y	0.4184	0.4143	0.4278	0.4322
X5B	X	0.4362	0.4456	0.4524	0.4434
	Y	0.4143	0.4097	0.4235	0.4278
X5C	X	0.4456	0.4557	0.4632	0.4524
	Y	0.4097	0.4048	0.4184	0.4235
X5D	X	0.4557	0.4661	0.4738	0.4632
	Y	0.4048	0.3997	0.4137	0.4184
X6A	X	0.4388	0.4480	0.4555	0.4464
	Y	0.4300	0.4256	0.4406	0.4451
X6B	X	0.4480	0.4582	0.4659	0.4555
	Y	0.4256	0.4207	0.4353	0.4406
X6C	X	0.4582	0.4685	0.4762	0.4659
	Y	0.4207	0.4160	0.4301	0.4353
X6D	X	0.4685	0.4789	0.4868	0.4762
	Y	0.4160	0.4115	0.4250	0.4301
X7A	X	0.4555	0.4653	0.4735	0.4635
	Y	0.4406	0.4356	0.4501	0.4551
X7B	X	0.4653	0.4762	0.4842	0.4735
	Y	0.4356	0.4301	0.4446	0.4501
X7C	X	0.4762	0.4868	0.4946	0.4842
	Y	0.4301	0.4250	0.4394	0.4446

Measurement uncertainty of the color coordinates  $\pm 0.003$

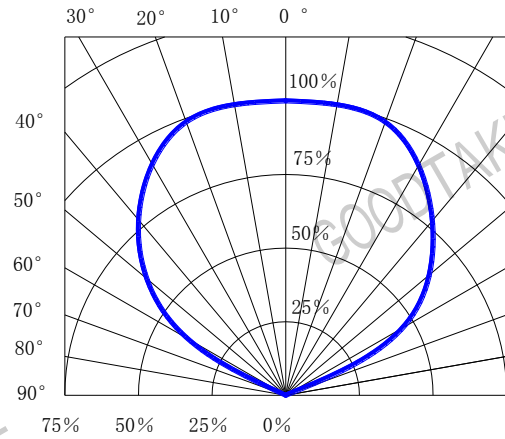
## Typical Electrical / Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)

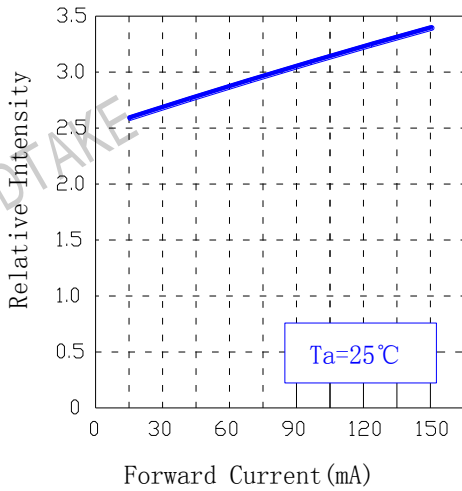
Luminous Intensity vs Ambient Temperature



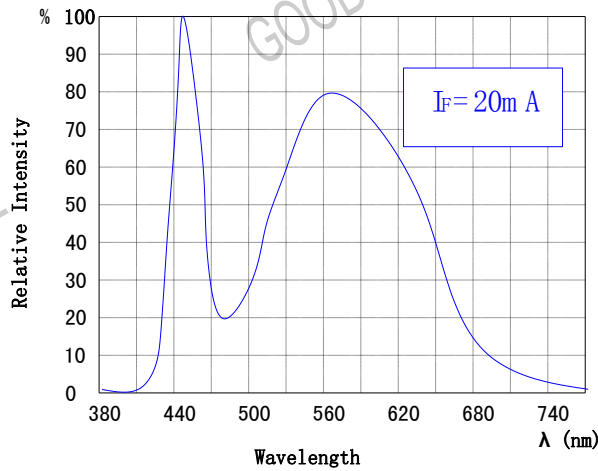
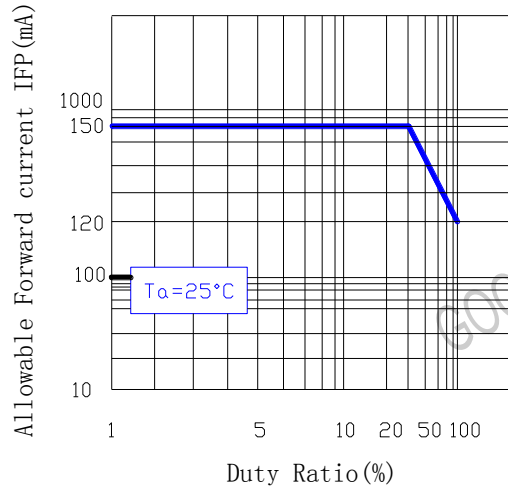
Radiation Diagram



Relative Intensity vs Forward Current (mA)



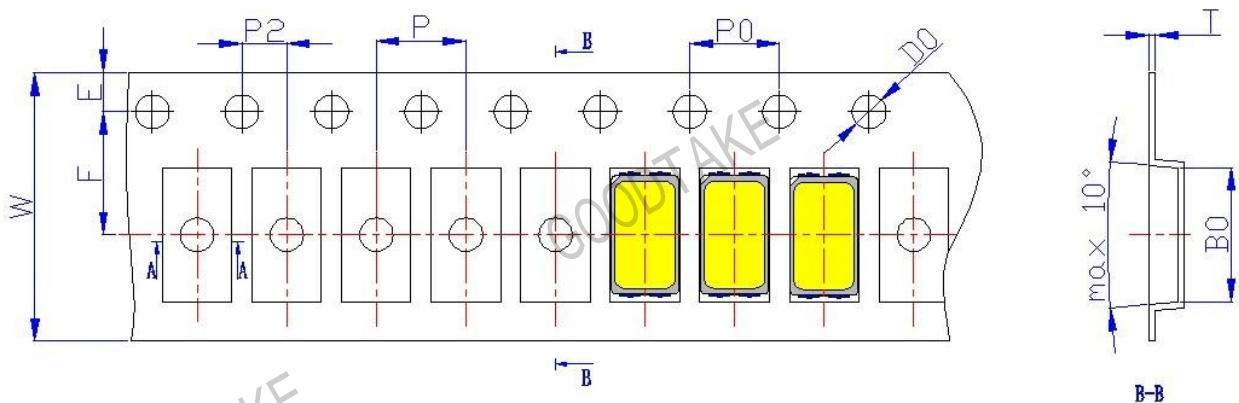
Duty Ratio vs. Allowable Forward current



## Test items and results of reliability

NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Reflow	TEMP: 260±5°C Min. 5sec.	6 MIN.	22 PCS	0/1
2	Temperature Cycle	H: +100°C 15min ↓ 5 min L: -40°C 15min	300 CYCLES	22 PCS	0/1
3	Thermal Shock	H: +100°C 5min ↓ 10 sec L: -10°C 5min	300 CYCLES	22 PCS	0/1
4	High Temperature Storage	TEMP: 100°C	1000 HRS	22 PCS	0/1
5	Low Temperature Storage	TEMP: -55°C	1000 HRS	22 PCS	0/1
6	DC Operating Life	I <sub>F</sub> = 120 mA / 25°C	1000 HRS	22 PCS	0/1
7	High Temperature / High Humidity	85°C / 85%RH	1000 HRS	22 PCS	0/1

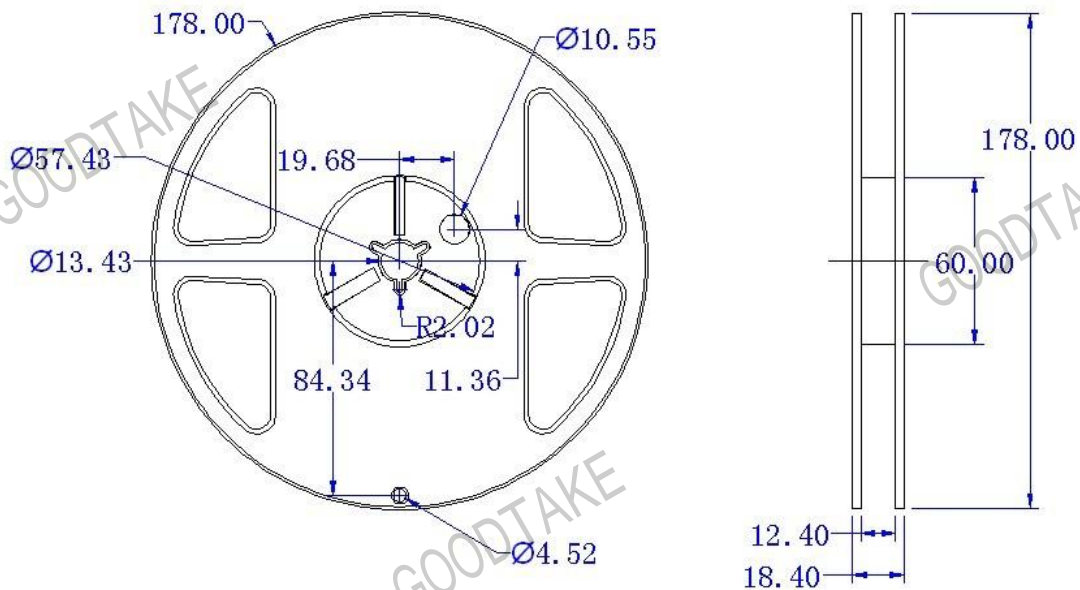
## Package Dimensions of Tape



W	12±0.3	P	4±0.1	A0	3.20±0.1
F	5.5±0.1	P0	4±0.1	B0	5.80±0.1
T	0.3±0.05	P2	2±0.1	K0	1.00±0.1
D0	1.50 <sup>+0.1</sup> <sub>0</sub>	E	1.75±0.1		



## Package Dimensions of Reel



### Notes:

1. Empty component pockets sealed with top cover tape.
2. 7 inch reel-2000 pieces per reel.
3. Minimum packing quantity is 500 pieces for remainders.
4. The maximum number of consecutive missing lamps is two.
5. In accordance with EIA-481-1-B specifications.

## Soldering Condition

1. Pb-free solder temperature profile
2. Reflow soldering should not be done more than two times.
3. When soldering, do not put stress on the LEDs during heating.
4. After soldering, do not warp the circuit board.

## Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.