

Product Specification Report

Customer Name :					
Customer NO.:					
Product Name :			CL-SF681USD-660-02		
Product Type :			SMD3528		
Date Prepared :					
Development	Approved	Marketing Dept	Confirmed by	Approved	Purchasing Dept
Judge outcome			Judge outcome		

Features

- Package Size: 3.5(L) × 2.8(W) × 1.9(T)mm
- Silicone Packed
- Suitable for different working environment
- Super long lifetime: 50000HRs
- Anti UV
- Wide viewing angle ($2\theta = 120^\circ$)

Device Selection Guide

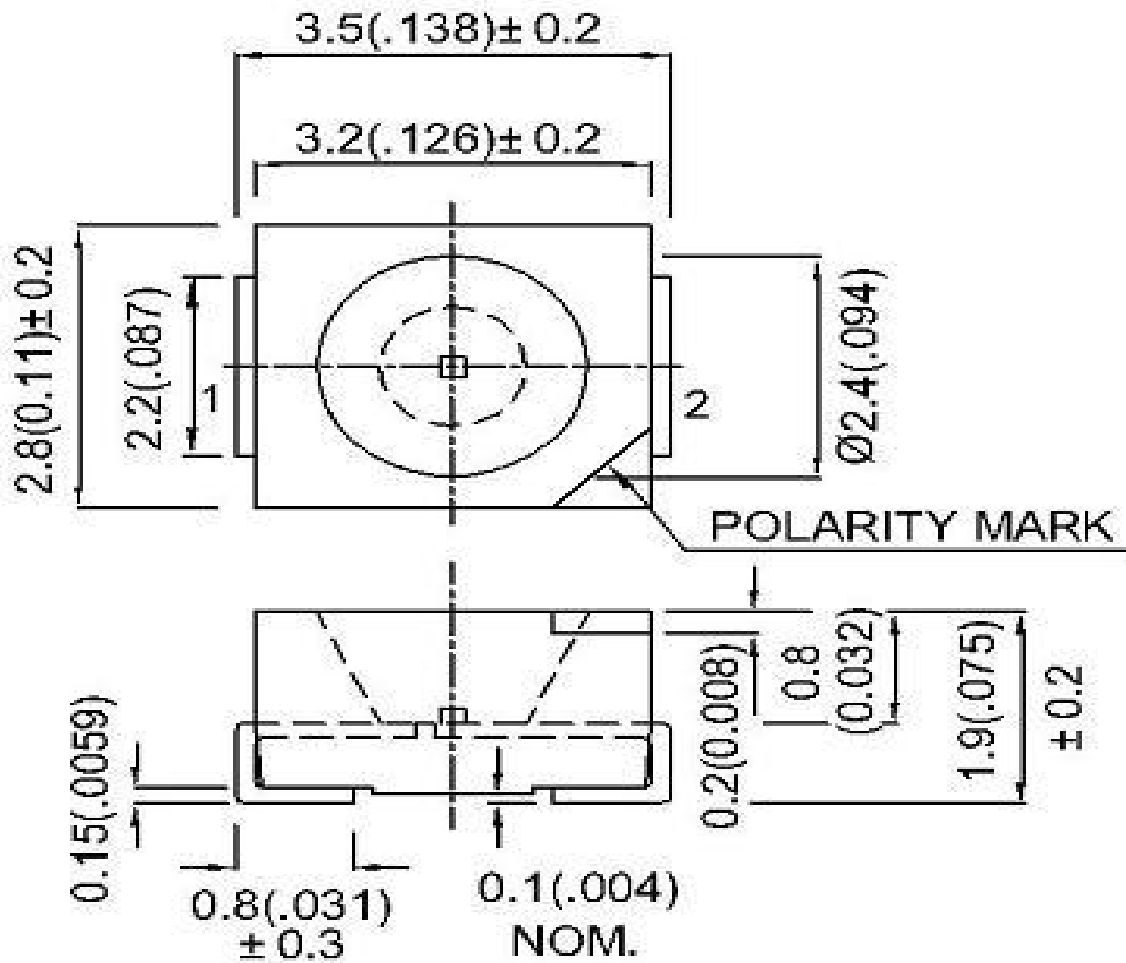
ITEM	MATERIALS
Resin	Silicon
Bonding wire	25 Em Au
Lens color	Water Clear
Dice	InGaN

Applications

- Indoor lighting: Fluorescent lamp, tube
- Commercial illumination and displays: Advertising words, light box
- LCD Backlighting
- Decorative lighting: light strip
- Automotive interior auxiliary lighting
- Other illumination and displays

REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

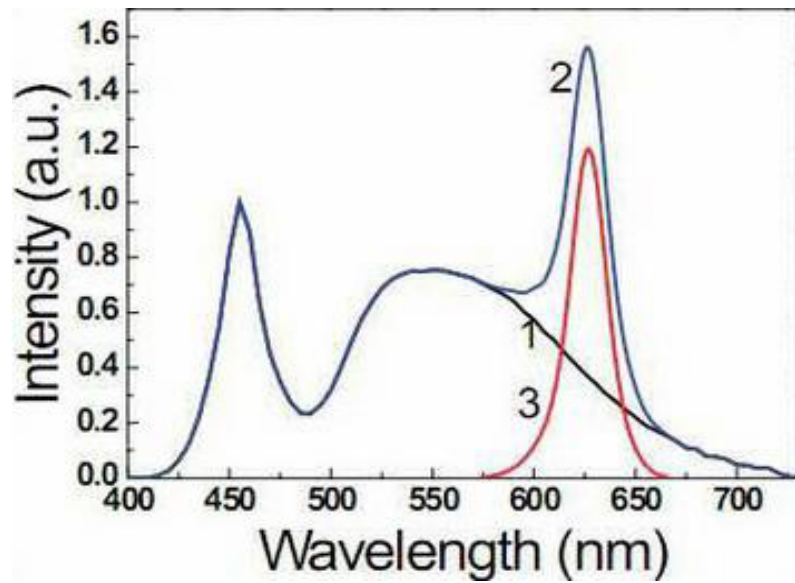
HighPerformanceSMDSingle -Color Top LEDs



NOTES:

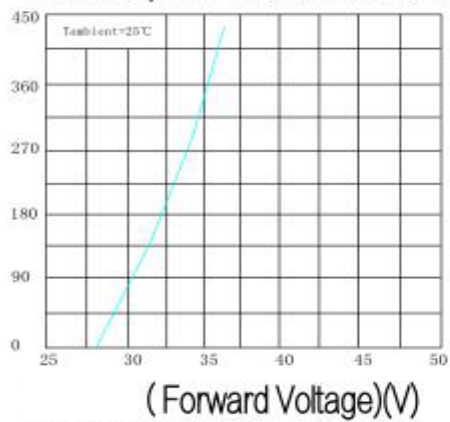
All dimensions are in millimeters (inches)
 Tolerances are 0.2mm (0.008 inch) unless
 otherwise noted

Part Number: CL-SF681USD-660-02						
Absolute maximum ratings (TA=25℃)						
Paramete			Symbol	Rat	Unit	
Forward current			I F	20	mV	
Reverse voltage			VR	5	V	
Power dissipation			Pd	0.06	W	
Operating Temperature			TOP	-20 ~+80	℃	
Storage Temperature			Tstg	-40 ~+80	℃	
Peak Forward Current (Duty1/10@1KHz)			IFP	20	mA	
Lead Soldering Temperature (5mm From Body)			TSOI	260℃ For 5 Seconds)/℃		
Electro-optical characteristics (T A =25℃)						
Parameter	Test Condition	Symbo	Value			Unit
			Min	Avg	Max	
CIECoordinates	I F =20mA	X				
		Y				
Forwardvoltage	I F =20mA	Vf	1.9	2.0	2.1	V
Wavelength	I F =20mA	nm	656	658	660	nm
Radiant Intensity	I F =20mA	I F	30		60	mW/sr
Luminousintensity	IF=20mA	Iv	500	600	700	mcd
ViewingAngle	////////	201/2	////////	120	////////	deg
ReverseCurrent	////////	IR	////////	////	10	EA

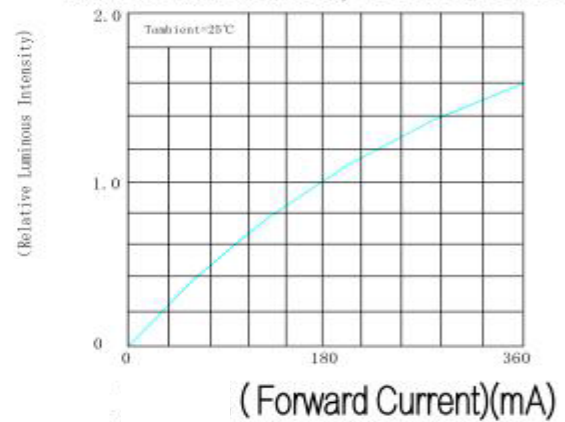


Optical-Electrical Characteristic

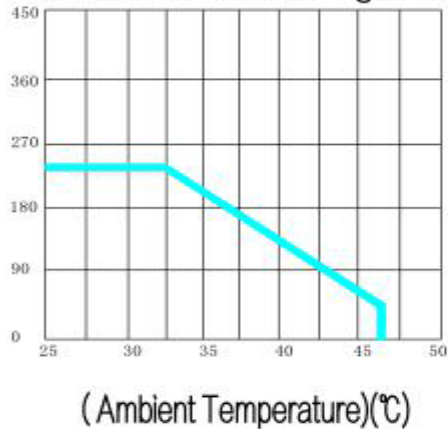
Volt-Ampere Characteristics



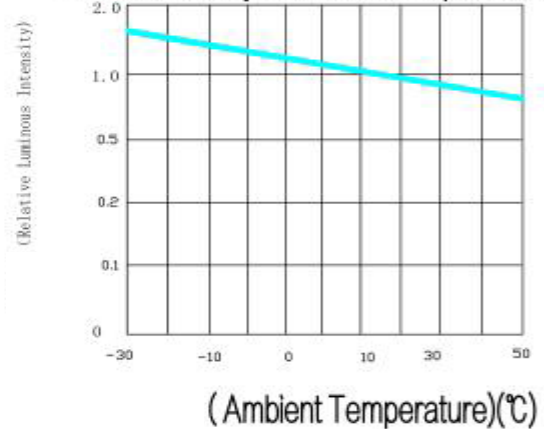
Relative Luminous Intensity VS Forward Current



Forward Current Derating Curve



Luminous Intensity VS Ambient Temperature



Reliability Test Items And Conditions

TestItems	Reference	TestConditions	Time	Quantity	Criterion
ThermalShock	MIL-STD-202G	-40℃ (30min) -100℃ (30min)	100 Cycles	22	0/22
Temperature	JEITA ED-4701 200 203	-10℃~65℃; 0%~90%RH	10 cycles	22	0/22
High temperature	JEITA ED -4071 200 201	Ta=100℃	1000H	22	0/22
Low temperature	JEITA ED -4071 200 202	Ta=-40℃	1000H	22	0/22
High temperature storage	JEITA ED -4071 100 103	Ta=60℃ RH=90%	1000H	22	0/22
High temperature life	JESD22-A108D	Ta=80℃	1000H	22	0/22
Room temperature life test	JESD22-A108D	Ta=25℃ IF=150mA	1000H	22	0/22
Resistance welding heat	GB/T4937, II, 2.2&2.3	Tsol*=(240±5)℃ 10secs	2times	22	0/22

Criteria For Judging Damage

TestItems	Symbol	TestConditions	Criteria For Judging Damage
ForwardVoltage	V F	IF=IFT	Initial Data±10%
ReverseCurrent	I R	V R =5V	I R ≤10uA
LuminousIntensity	IV	IF=IFT	The average IV Attenuation ≤30%; Single IV attenuation 50%

*NoteTsol-Temperatureoftinliquid

Useful hint:

Hand Soldering

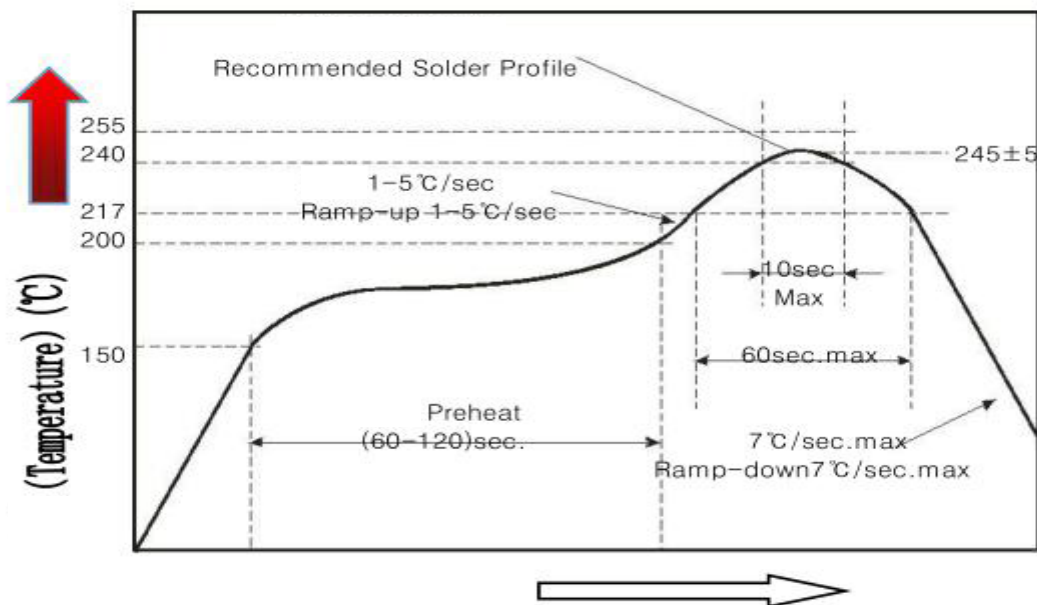
A soldering iron of less than 20W is recommended to be used in Hand Soldering.

Please keep the temperature for the soldering iron under 360°C while soldering.

Each terminal for the LED is to go for less than 3 second and for one time only.

Be careful because the damage of the product is often started at the time of the hand soldering.

Reflow Soldering: Use the conditions shown in the under Figure of Pb-Free Reflow Soldering



Reflows soldering only allowed to do once

Stress on the LEDs should be avoided during heating in soldering process

After soldering ,do not deal with the product before its temperature drop down to room Temperature.

Precautions(1)

Storage

Moisture proof an danti-electrostatic package with moisture absorbent material isused, to keep moisture to aminimum Before opening the package , the products hould be kept at 30°C or less and humidity less than 60% RH ,and beused within a year. After opening the package, the product should be stored at 30°C or less and humidity less than 10%RH, and be soldered within 24hours (1day). It is recommended that the product be operated at the work shop condition of 30 °C or less and humidity less than 60%RH.

If the moisture absorbent material has fade away or the LED shave exceeded the storage time, baking treatment should be performed based on the following condition: $(70 \pm 5)^{\circ}\text{C}$ for24hours.

Static Electricity

Staticelectricityorsurgevoltagedamages theLEDs.DamagedLEDswillshowsomeunusual characteristicsuchastheforwardvoltagebecomeslower,orthetheLEDsdonotlightatthelowcurrent. evennotlight.Alldevices,equipmentandmachinerymustbeproperlygrounded.Atthesametime,itis recommendedthatwristbandsoranti-electrostaticgloves,anti-electrostaticcontainersbeused whendealingwiththeLEDs.

Precautions(2)

Vulcanization

LED curing is due to sulfur being in bracket and the +1 price of silver in the chemical reaction generated Ag_2S in the process. It will lead to the capacity of reflecting of silver layer reducing, light color temperature drift and serious decline, seriously affecting the performance of the product. So we should take corresponding measures to avoid vulcanization, such as to avoid using sulphur volatile substances and keeping away from high sulphur content of the material.

Safety Advice For Human Eyes

Viewing direct to the light emitting center of the LEDs, especially those of great Luminous Intensity will cause great hazard to human eyes. Please be careful.