



Hebei I.T. (Shanghai) Co., Ltd.
Technical Data Sheet
Lamp View LED

• Customer:

Technical Data Sheet

PN: 3751XR2D-S

For: IF=20mA



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Customer confirm	Approved by	Checked by	Issued by



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Part No.	3751XR2D-S		
Emitted Color	Red	Face Color	Red Diffused
Chip Material	AlGaN _{0.1} P	Viewing Angle	105/55

◆ Features:

Compatible with automatic placement equipment

Compatible with reflow solder process

Low power consumption

This product doesn't contain restriction Substance, comply ROHS standard.

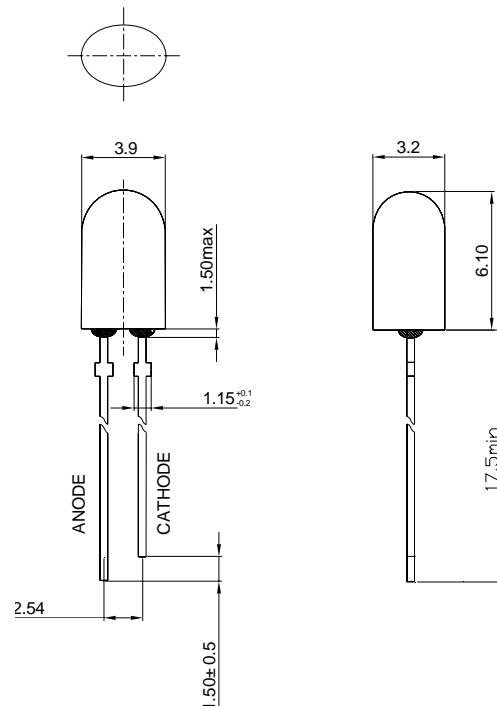
◆ Applications:

Automotive and Telecommunication

Flat backlight for LCD ,switch and symbol in telephone and fax

General use for indicators

◆ Package Dimensions:



Note:

1. All dimensions in mm tolerance is ± 0.2 mm unless otherwise noted.

2. An epoxy meniscus may extend about 1.5 mm down the leads.

3. Burr around bottom of epoxy may be 0.5 mm max.



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◆ Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Max.	Unit
Power Dissipation	P _M	100	Mw
Pulse Forward Current	I _{FP}	100	mA
DC Forward Current	I _F	30	mA
Reverse Voltage	V _R	5	V
Operating Temperature Range	Topr	-30℃ ~ 85℃	℃
Storage Temperature Range	Tstg	-40℃ ~ 100℃	℃

* I_{FP} condition: pulse width ≤ 0.1ms ,duty cycle ≤ 1/10

◆ Electrical Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min	Typ.	Max.	Unit	Test Condition
Luminous Intensity	I _V	830	--	1440	mcd	I _F =20mA
Dominant wavelength	λ _d	620	--	630	nm	I _F =20mA
Forward Voltage	V _F	1.7	--	2.5	V	I _F =20mA
Reverse Current	I _R	--	--	10	uA	V _R =5V
Viewing Angle	2 θ _{1/2}	--	105/55	--	Deg.	I _F =20mA

◆ Ranks Combination (IF = 20mA)

Rank						
WD(nm)	620-625	625-630				
Rank						
IV	830-1000	1000-1200	1200-1440			
Rank						
VF(v)	1.7-2.5					

- Notes:
- 1.Tolerance of Luminous Intensity ± 15%.
 - 2.Tolerance of Dominant wavelength ± 1nm.
 - 3.Tolerance of Forward Voltage ± 0.05V.
 - 4.Optical characteristic is measured by HB's equipment.



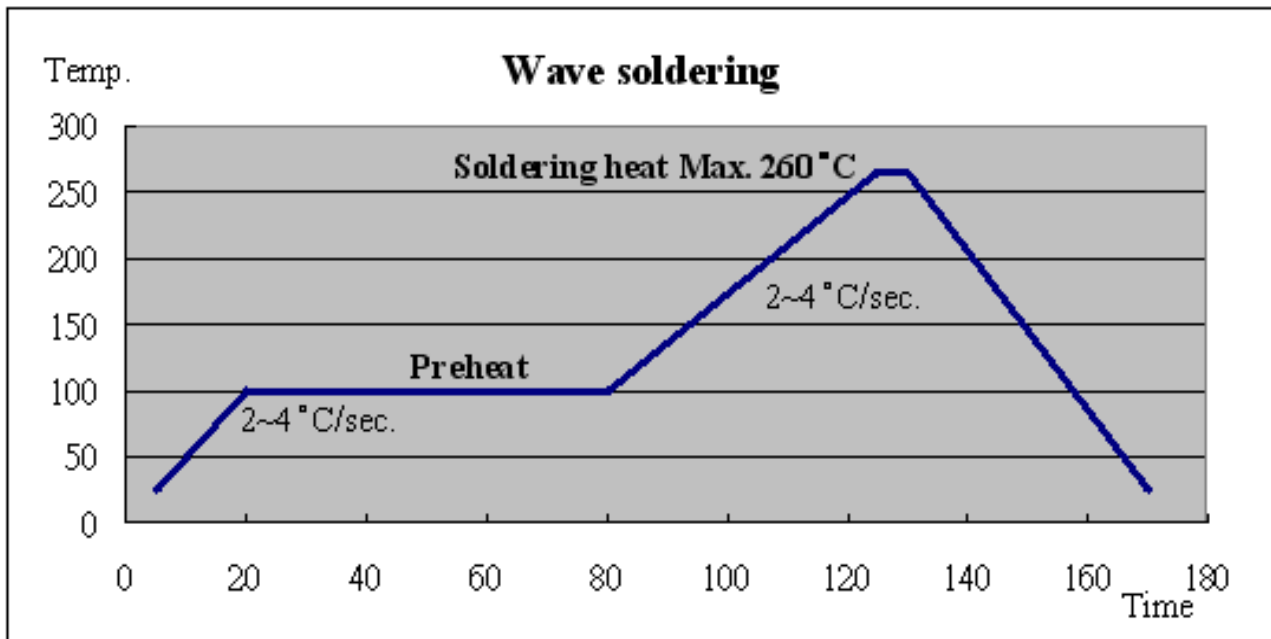
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◆ Soldering Conditions (Maximum allowable soldering conditions)

lead-free solder

mode	fixed form
Hand soldering	1. Soldering time : 3 sec MAX. 2. Distance : 3 mm MIN (from solder joint to case)
DIP soldering	1. Preheat temp : 100 °C MAX , 60 sec MAX. 2. Bath temp : 265 °C MAX. 3. Bath time : 3 sec MAX. 4. Distance : 3 mm MIN (From solder joint to case) 5. decrease temperature externally and compulsorily after dip soldering)

Lamp wave soldering profile :





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◆ Typical Electro-Optical Characteristics Curves:

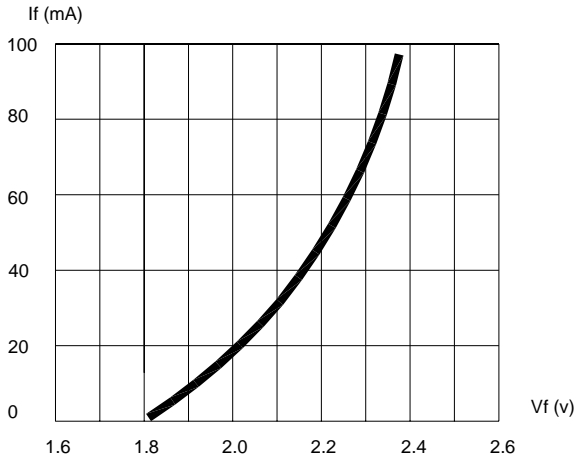


Fig.1 Forward Current vs. Forward Voltage

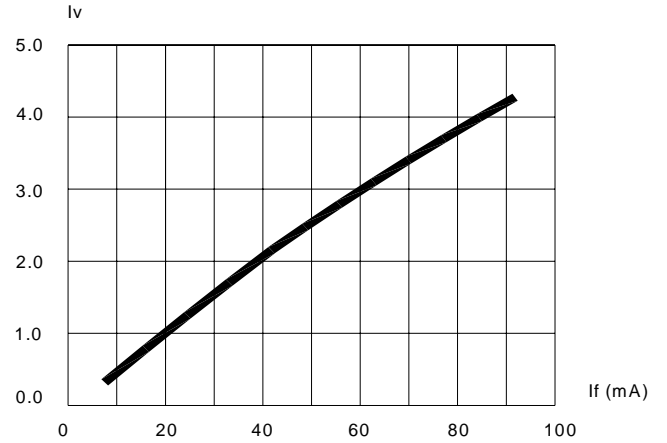


Fig.2 Relative Luminous Intensity vs. Forward Current

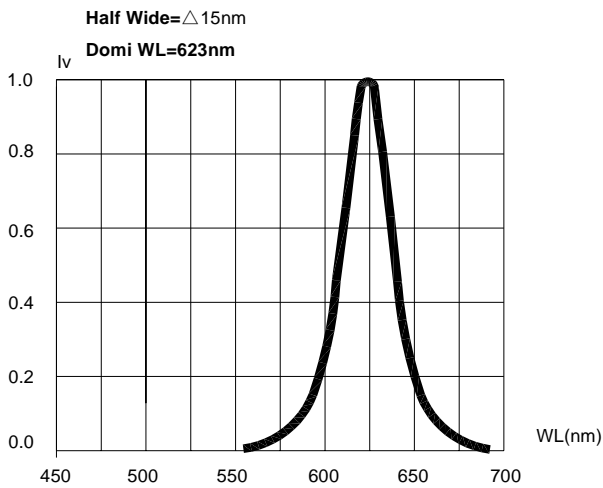


Fig.3 Relative Luminous Intensity vs. Wavelength

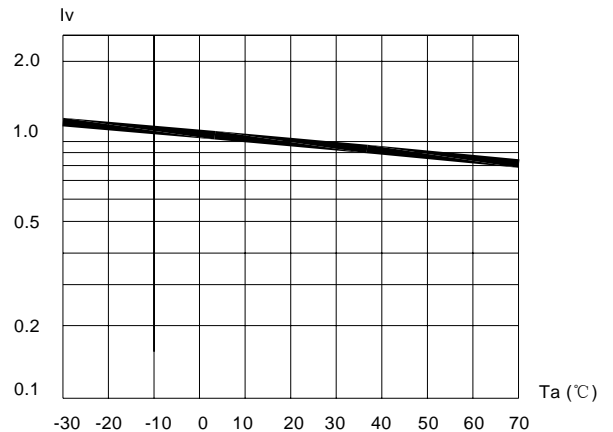


Fig.4 Relative Luminous Intensity vs. Ambient Temperature

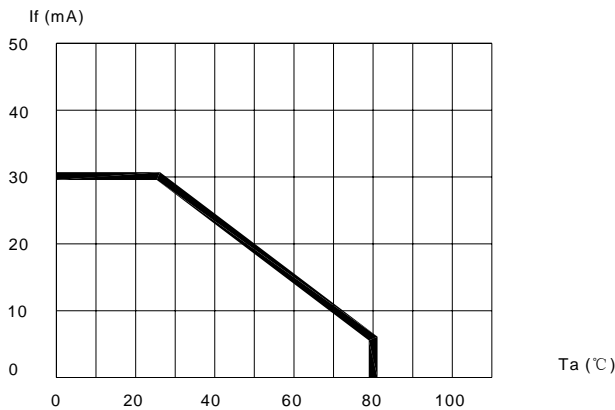


Fig.5 Maximum Forward Current vs. Ambient Temperature

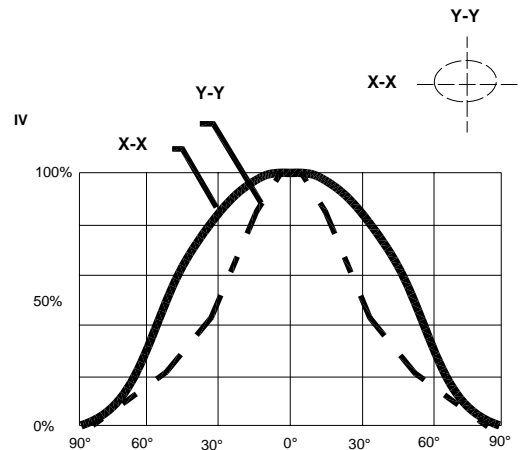


Fig.6 Relative Luminous Intensity vs. Radiation Angle



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◆ **Reliability**

(1) Test Items and Conditions

Test Item	Standard Test Method	Test Conditions	Note	Number of Damaged
Reflow Soldering	JEITA ED-4701 300 301	T _{sld} =260°C , 3 sec (pre treatment 30°C,70%,168hrs)	2 time	0/100
High Temperature Storage	JEITA ED-4701 200 201	T _A =100°C	1000 Hrs	0/100
Low Temperature Storage	JEITA ED-4701 200 202	T _A =-40°C	1000 Hrs	0/100
Temperature Humidity Storage	JEITA ED-4701 100 103	T _A =60°C , RH=90%RH	1000 Hrs	0/100
Thermal Shock Test	JEITA ED-4701 300 307	-40°C ~ 100°C 15min 15 min	100 Cycles	0/100
Temperature Cycling Test	JEITA ED-4701 100 105	-40°C~25°C~100°C~25°C 30min 5min 30min 5min	100 Cycles	0/100
Operating Life Test		T _A =25°C I _F =20mA	1000 Hrs	0/100

(2) Criteria of judging the damage

Item	Symbol	Test Conditions	Criteria for Judgment	
			Min.	Max.
Forward Voltage	V _F	I _F =20 mA	---	Initial Data × 1.1
Luminous Intensity	I _V	I _F =20 mA	Initial Data × 0.8	---
Reverse Current	I _R	V _R = 5V	---	≤ 2μA
Wave length	λD/λP	I _F =Test Current	/	Initial Data±2nm
Appearance	/	View check	No mechanical damage	



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◆ Cautions

1、 Package

When moisture is absorbed into the package it may vaporize and expand during soldering. There is a possibility that this can cause exfoliation of the contacts and damage to the optical characteristics of the LEDs. So the moisture proof package is used to keep moisture to a minimum in the package.

2、 Storage

•Before opening the package

a. Avoid the absorption of moisture, we recommended to store the LEDs in a dry box(or desiccator) with a desiccant . Otherwise, store them in the following environment: Temperature : 5℃~30℃,Humidity : 60%max.

b. The products should be used in 3 months. It is recommended that the LEDs be used as soon as possible.

•After opening the package

a. Soldering should be done right after opening the package(within 24Hrs).

b. Keeping of a fraction

-sealing

-Temperature : 5 ~ 30℃,Humidity : less than 30%

c. If the package has been opened more than 1 week or the color of desiccant changes, Components should be dried for 10-12hr at 60±5℃

3、 Lead Forming

•When the lead forming is required before soldering , care must be taken to avoid any bending and mechanical stress. The stress to the base may damage the LEDs.

•When mounting the LEDs onto a PCB, the holes on the circuit board should be exactly aligned with the leads of the LEDs.

•It is recommended that tooling made to precisely form and cut the leads to length rather than rely on hand operating.

4、 The LED electrode sections are comprised of a gold plated. The gold surface may be affected by environments which contain corrosive gases and so on. Please avoid conditions which may cause the LED to corrode or discolor. This corrosion or discoloration may cause difficulty during soldering operations. It is recommended that the User use the LEDs as soon as possible.

5、 Please avoid rapid transitions in ambient temperature, especially in high humidity environments where condensation can occur.

6、 Static Electricity

6.1、 These products are sensitive to static electricity charge, and users are required to handle with care. Particularly, if an current and or voltage which exceeds the Absolute Maximum Rating of Products is applied, the overflow in energy may cause damage to, or possibly result in electrical destruction of, the Products. The customer is requested to take adequate countermeasures against static electricity charge and surge when handling Products.

6.2、 Proper grounding of Products , use of conductive mat, conductive working uniform and shoes, and conductive containers are effective against static electricity and surge.



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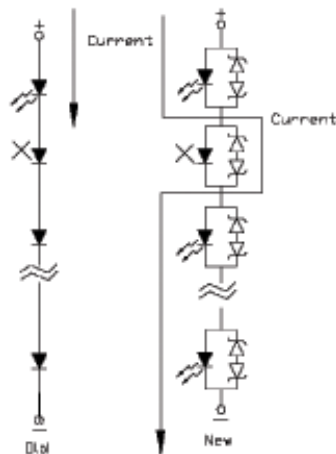
6.3、 Ground low-resistance areas where the product contacts, such as metal surfaces of the work platform, with a conductive mat (surface resistance 10^6 - $10^8 \Omega$).

6.4、 A tip of soldering iron is requested to be grounded. An ionizer should also be installed where risk of static generation is high.

7、 Circuit Protection

Below the zener reference voltage V_Z , all the current flows through LED and as the voltage rises to V_Z , the zener diode “breakdown”. If the voltage tries to rise above V_Z current flows through the zener branch to keep the voltage at exactly V_Z .

When the LED is connected using serial circuit, if either piece of LED is no light up but current can not flow through causing others to light down. In new design, the LED is parallel with zener diode, if either piece of LED is no light up but current can flow through causing others to light up.



◆ Notes:

- 1、 Above specification may be changed without notice. We will reserve authority on material change for above specification.
- 2、 When using this product, please observe the absolute maximum ratings and the instructions for the specification sheets. We assume no responsibility for any damage resulting from use of the product which does not comply with the instructions included in the specification sheets.