



Specification for JT LED Module

Model: 01 Series SMD Modules

Document No: TECH-JT-SLS01X-E
Model No: 01Series Waterproof Module
Version No: 03
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Confirmed by Customer: _____

Date: _____

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01 Series SMD Modules



Introduction:

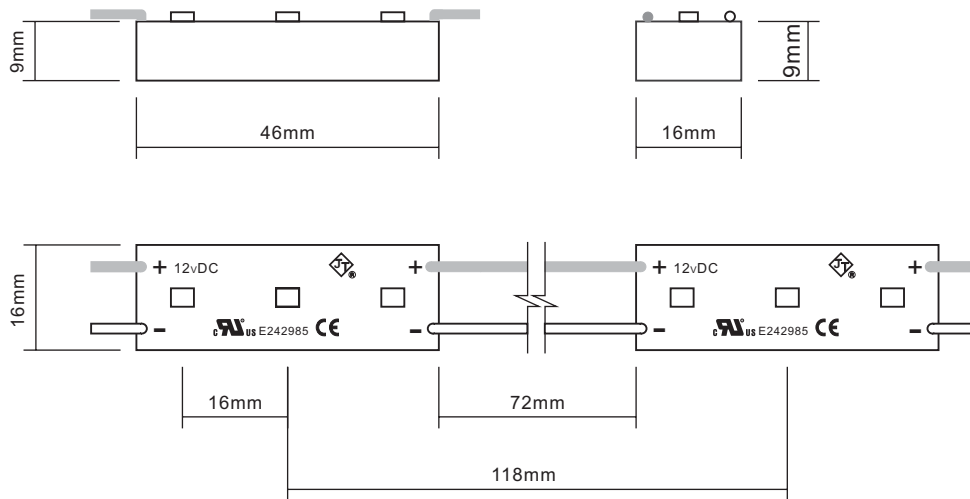
01 series LED modules are designed for smallest illumination projects to obtain the most cost-effective even light. Also 01 series LED modules perfectly replace neon lamps to achieve halo effects. Unlike High Power LED modules, these can be used for low thin profile channel letters illumination or halo lighting.



Features:

- Long lifetime, more than 50,000 hours
- High luminous flux output
- 70% lumen maintenance at 50,000 hours (L70)
- Waterproof design, IP65 ratings
- Single power supply runs any color LED modules
- Wide 120 degree viewing angle
- Shock and vibration resistant
- Environmentally friendly, RoHS compliant
- Energy efficient

Dimensions:



Rules of Naming Products:

Code	Color	Operating Voltage	Rated Current	Rated Power	Dimension	Beam Angle	Luminous Flux	Wave Legth	Working Temp.	IP Rank
JT-SLS011R-0.3	Red	12V DC	20mA	0.24W	46×16×9mm	120	1400mcd×3	625-640nm	-50~+80°C	IP 65
JT-SLS012A-0.3	Yellow	12V DC	20mA	0.24W	46×16×9mm	120	900mcd×4	585-590nm	-50~+80°C	IP 65
JT-SLS013B-0.3	Blue	12V DC	20mA	0.24W	46×16×9mm	120	700mcd×3	460-475nm	-50~+80°C	IP 65
JT-SLS014G-0.3	Green	12V DC	20mA	0.24W	46×16×9mm	120	700mcd×3	505-530nm	-50~+80°C	IP 65
JT-SLS015W-0.3	White	12V DC	28mA	0.3W	46×16×9mm	120	3000mcd×3	—	-50~+80°C	IP 65
JT-SLS015WW-0.3	Warm White	12V DC	28mA	0.3W	46×16×9mm	120	2500mcd×3	—	-50~+80°C	IP 65

Electro-optical characteristics

1. Absolute maximum ratings at Ta=25°C

Parameter	Symbol	Value	Unit
Power dissipation	Pd	150	mW
Forward current	If	40	mA
Reverse voltage	Vr	5	V
Operating temperature range	Top	-40 ~+100	°C
Storage temperature range	Tstg	-40 ~+100	°C
Pulse Forward Current	Ifp	100	mA
Electrostatic Discharge	ESD	1000(HBM)	V

2. Electro-optical characteristics at Ta=25°C

Parameter	Symbol	Test Condition	Value			Unit
			Min.	Typ.	Max.	
Forward voltage	Vf	If=20mA	2.8	--	3.5	V
Luminous intensity	Iv	If=20mA	1200	--	2100	mcd
Viewing angle at 50% Iv	2 θ 1/2	If=20mA	--	120	--	Deg
Reverse current	Ir	Vr=5V	--	--	10	μ A
Chromaticity CIE	If=20 mA	J01-J04	(0.3114, 0.3084) (0.3058, 0.3372) (0.3148, 0.3198) (0.3181, 0.3178)			
		J05-J08	(0.3181, 0.3178) (0.3148, 0.3198) (0.3223, 0.3603) (0.3243, 0.3265)			
		J09-J12	(0.3243, 0.3265) (0.3223, 0.3603) (0.3298, 0.3708) (0.3305, 0.3352)			

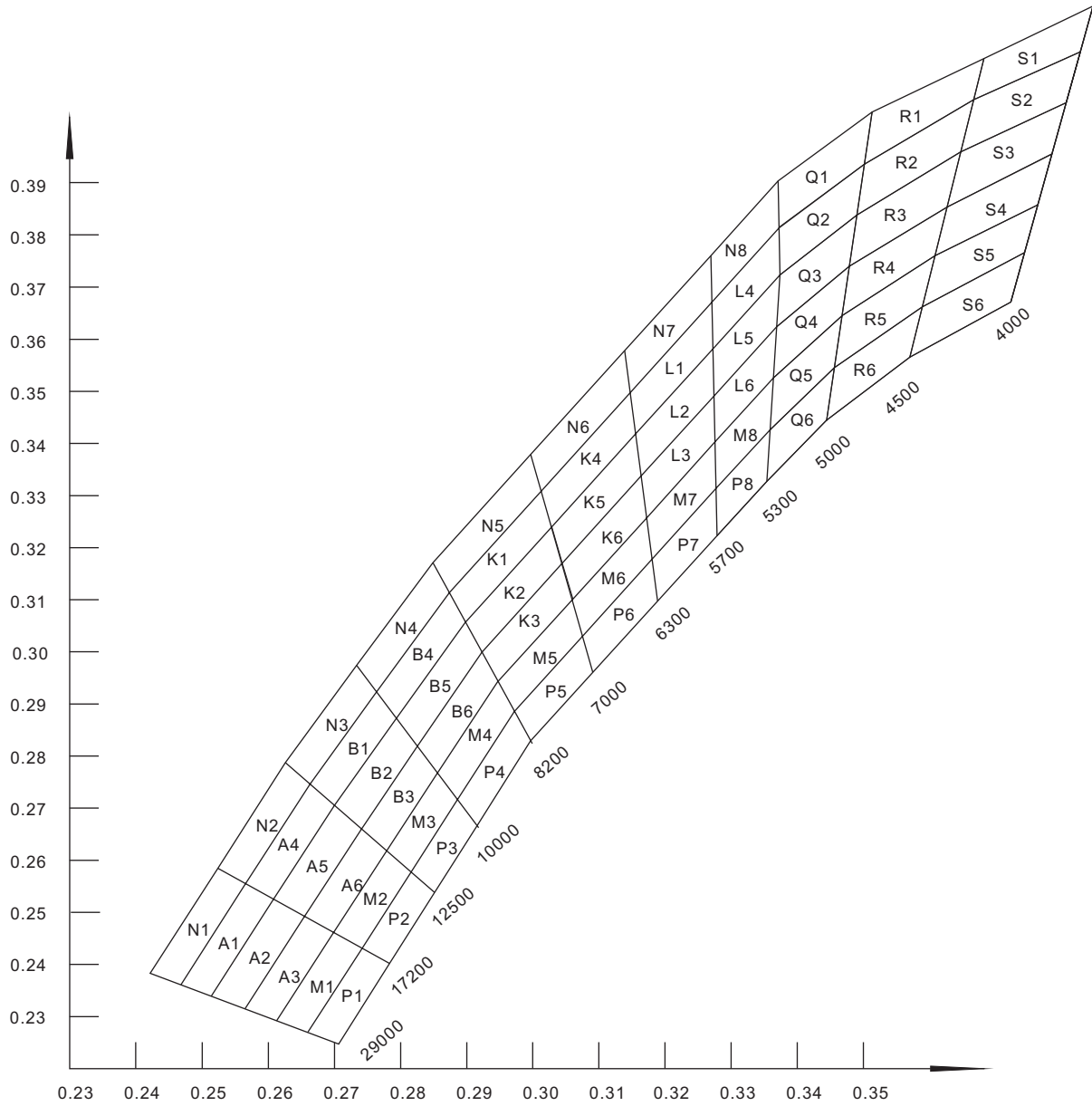
NOTE: (Tolerance: Iv ±10%, Vf ±0.05V, X, Y ±0.01)

IFP Conditions: Pulse Width ≦ Q10msec. and Duty ≦ Q1/10.

3. Ranking

Item	Symbol	Test Condition	Min.	Max.	Unit
Luminous intensity	Iv	If=20mA	1200	1500	mcd
	Iv	If=20mA	1500	1800	mcd
	Iv	If=20mA	1800	2100	mcd

CIE Chromaticity Diagram:



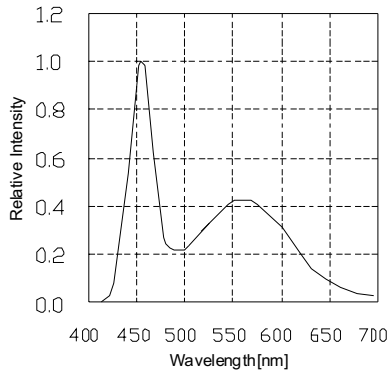
NOTE:

Tolerance: $I_v \pm 10\%$, $\lambda_d \pm 2\text{nm}$, $V_f \pm 0.05\text{V}$, $X, Y \pm 0.01$
 IFP Conditions: Pulse Width $\leq 10\text{msec}$ and Duty $\leq 1/10$.

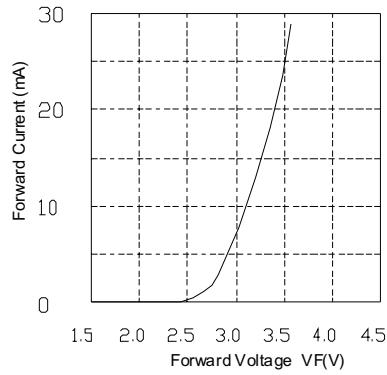
Spectral Distribution:

Spectral Distribution

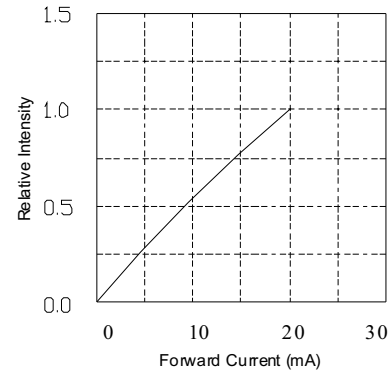
Relative Intensity vs. Wavelength (Ta=25 °C)



Forward Voltage vs. Forward Current (Ta=25 °C)

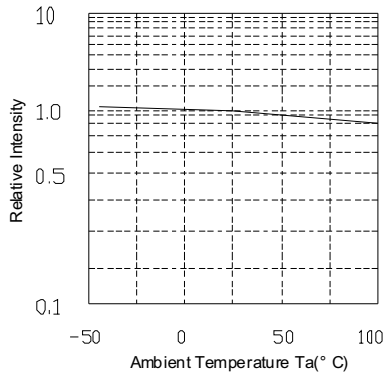


Relative Intensity vs. Forward Current (Ta=25 °C)

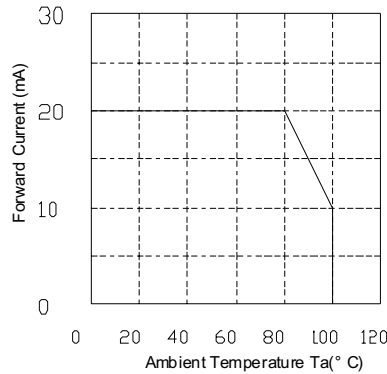


Derating

Relative Intensity vs. Ambient Temperature



Ambient Temperature vs. Maximum Forward Current



Forward Current vs. Chromaticity (Ta=25 °C)

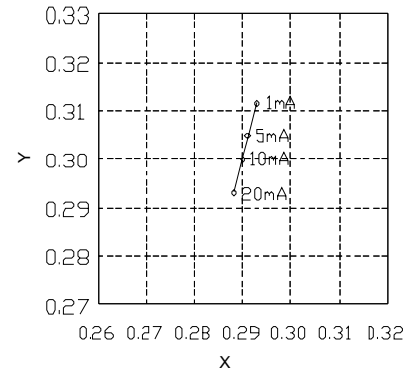
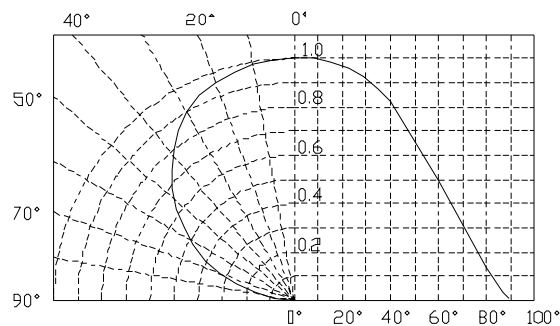


Diagram characteristics of radiation



Reliability / 可靠性:

1.TEST ITEMS AND RESULTS / 测试项目及判定

Type 类型	Test Item 测试项目	Ref.Standard 参考标准	Test Conditions 测试条件	Note 注释	Number of Damaged 死灯数量
Environmental Sequence 环境顺序	Resistance to Soldering Heat (reflow Soldering) 回流焊耐热测试	JESD22-B106	TsId=260°C.10sec	2 times	0/22
	Temperature Cycle 温度循环	JESD22-A104	-40°C 30min ↑↓5min 100°C 30min	1000 cycle	0/100
	Thermal Shock 冷热冲压	JESD22-A106	-40°C 15min ↑↓ 100°C 15min	1000 cycle	0/100
	High Temperature Storage 高温储存	JESD22-A103	Ta=100°C	1000 hrs	0/100
	Low Temperature Storage 低温储存	JESD22-A119	Ta=40°C	1000 hrs	0/100
	Power Temperature Cycling 间断点亮测试	JESD22-A105	On 5min -40°C>15min ↑↓ ↑↓<15min Off5min 100°C>15min	100 cycle	0/100
Operation Sequence 操作顺序	Life Test 老化寿命测试	JESD22-A108	Ta=25°C If=40mA	1000 hrs	0/100
	High Humidity Heat Life Test 高温高湿老化测试	JESD22-A101	60°C RH=90% If=30mA	1000 hrs	0/100

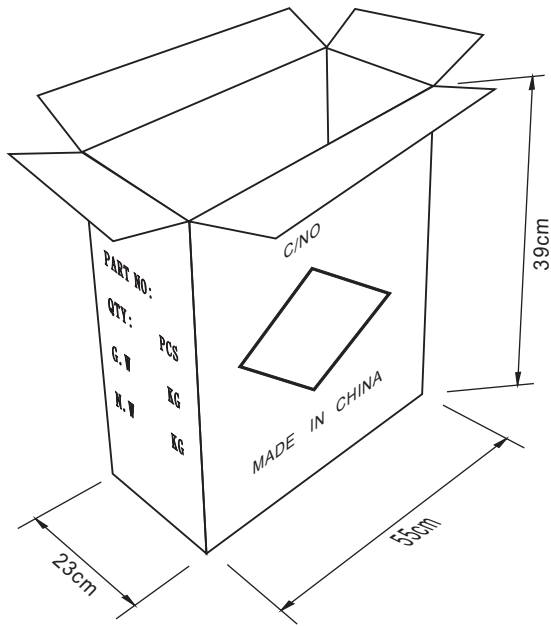
1.CRITERIA FOR JUDGING THE DAMAGE / 失效判断标准

Item / 项目	Symbol / 符号	Test Conditions 测试条件	Criteria for Judgement / 判断标准	
			Min. / 最小	Max. / 最大
Forward Voltage 正向电压	VF	If=15mA	—	U.S.L*)×1.1
Reverse Current 反向漏电流	IR	VR=5V	—	U.S.L*)×2.0
Luminous Intensity 亮度	IV	If=15mA	L.S.L*)×0.7	—

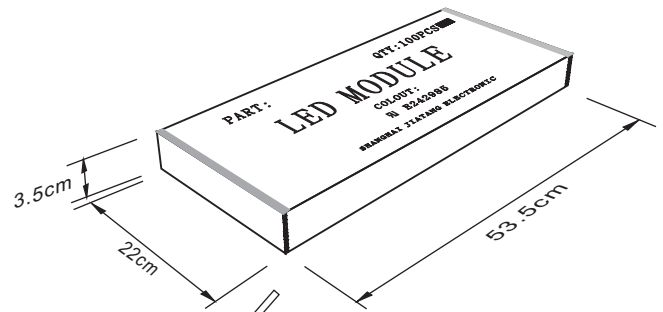
U.S.L.:Upper Standard Level
标准上限

L.S.L.:Lower Standard Level
标准下限

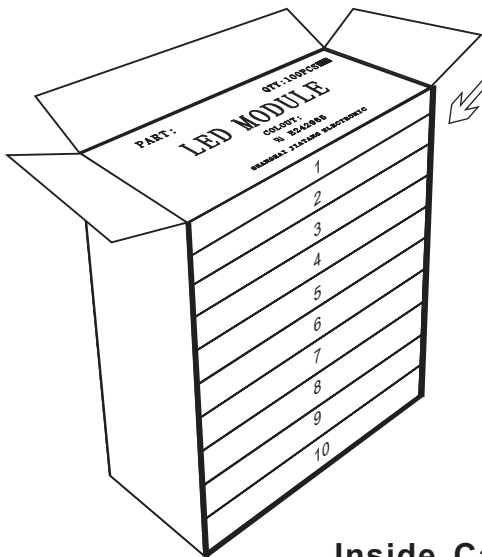
Packing List:



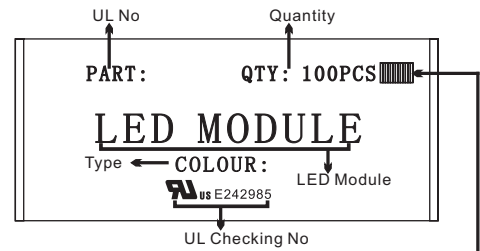
Carton



Box



**Inside Carton
Max. Ten boxes**



1. Carton Size: 550mm × 230mm × 390mm
2. Ten boxes included in one carton (Quantity: 1000 pcs/carton)
3. Each box contains 100pcs, size 535mm × 220mm × 35mm
4. Product name and bar code are on both the box and the side of the carton
5. Gross Weight: 15KG