



## YueQing Yulin Electronic Co., Ltd

Adds:F/6 No.19 Ke'aisi Road, Xiangyang industrial Zone,Liushi Town,YueQing City, Zhejiang Province, China 325600

Website: www.indicatorlight.com Tel: 0577-62768130 Fax: 0577-62768130

# SPECIFICATION FOR APPROVAL

## 规格说明书

### CUSTOMER'S CODE

本厂代码: FL-PZ-W2016-1-5

### DESCRIPTION

品名: 金属信号灯metal indicator light

### SPECIFICATION

规格: 8mm

### DATE

编制日期: 2019-12-04

### PART NO.

本厂型号: FL1M-8-CW-T-1

### REFERENCE No.

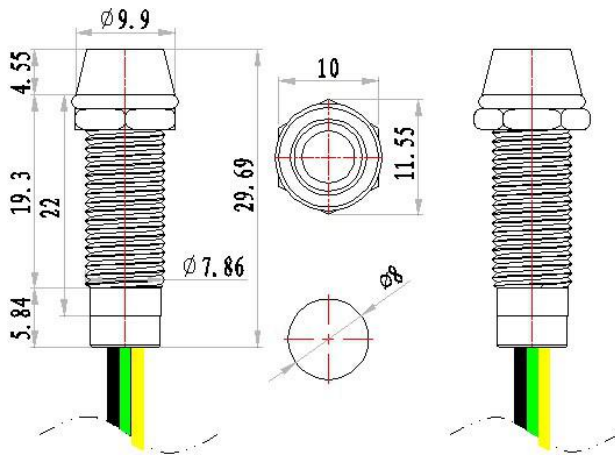
档案编号: FL-PZ-W2016-1-5-014

Approved By Customer 编制	Qualified By 审核	Form Designer 批准

### 1. 图片 Picture:



### 2. 图纸 drawing:





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### 3 配件材料 component material

### 4 性能参数 performance parameter

配件名Component name	材料material
灯罩 lens	PC 塑料 PC plastic
金属壳 Metal body	H59 黄铜 or 204 不锈钢 H59 brass or 204 stainless steel
加固垫片 wahser	T10 冷轧钢 T10 Cold Rolled Steel
防水圈 rubber ring	SIL 硅胶 SIL silica gel
螺帽 nut	H59黄铜 H59 nickel plated brass
灯座 housing	PA66阻燃尼龙 PA66 nylon
光源 Light source	三心LED LED灯
电阻 Resistor	金属膜电阻 Metal film
导线 Cable	PTFE AWG22 0.3mm <sup>2</sup>
插件 plug-in	

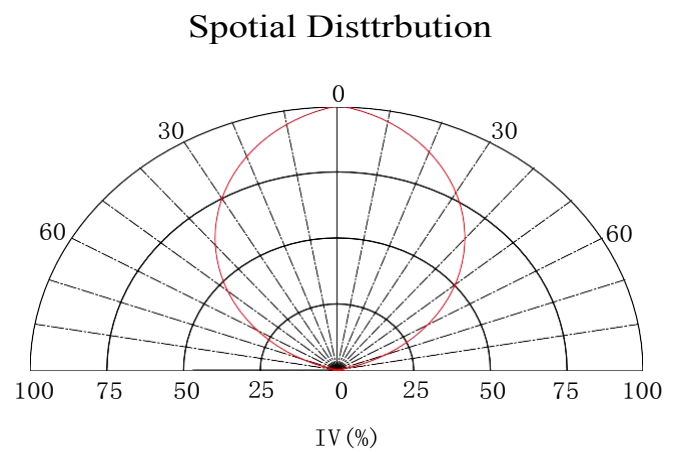
项目items	参数parameter
额定电压 Rated voltage	3V-780V DC or AC
额定电流 rated current	20mA
额定功率 rated power	0.2W
绝缘耐压 Insulation and voltage resistance	1800V
工作寿命 working life	50000h
电气寿命 electrical life	50000次
耐寒 cold-resistant	-40℃
耐热 heat-resisting	80℃

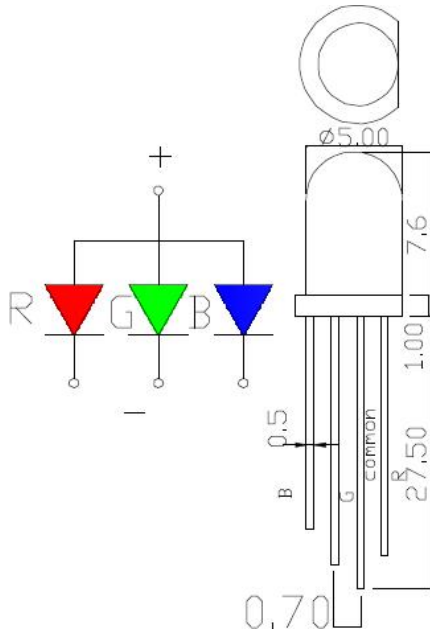
### 4. Detailed Picture :



### 5.LED Specification:

#### ■ Emitter 外型图





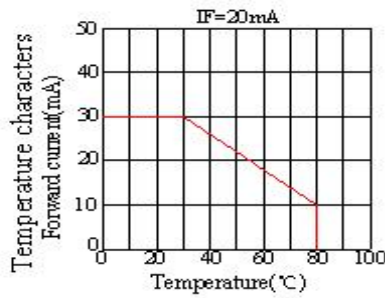
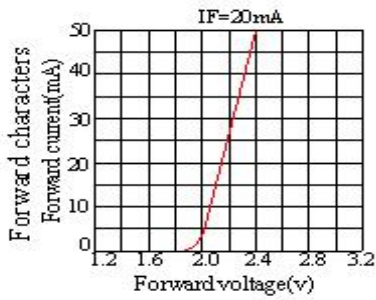
### ■ Absolute Maximum Rating 极限工作参

Item 项目	Symbol 代号	Absolute Maximum Rating 极限工作参数	Unit 单位
Forward Current 正向电流	IF	20	mA
Peak Forward Current 瞬间脉冲电流	IFP	50	mA
Reverse Voltage 反向电压	VR	5	V
Power Dissipation 消耗功率	PD	100	mw
Electrostatic discharge 静电释放	ESD	1000	V
Operation Temperature 工作温度范围	TOPR	-25~+80	°C
Storage Temperature 存放温度范围	TSTG	-40~+80	°C
Lead Soldering Temperature 最高焊接温度	TSOL	330 °C for 3sec Max。	

\*Ifp Conditions: Pulse Wide $\leq$ 10msec $\leq$ 1/10 瞬间脉冲电流

\*Tsol Conditions:3mm from the base of epoxy bulb 最高焊接温度 距胶体3mm

### Typical electrical-optical Characteristics curves

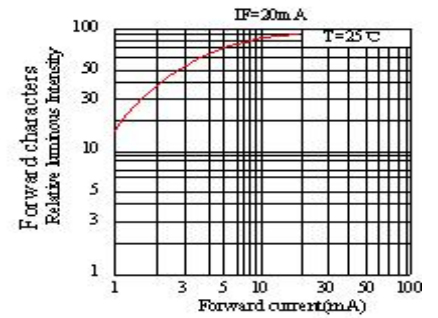
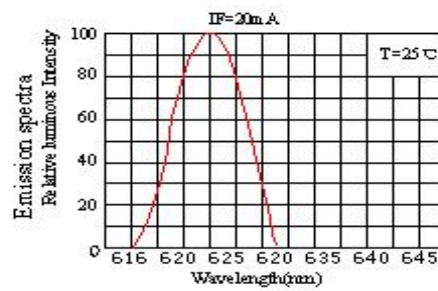
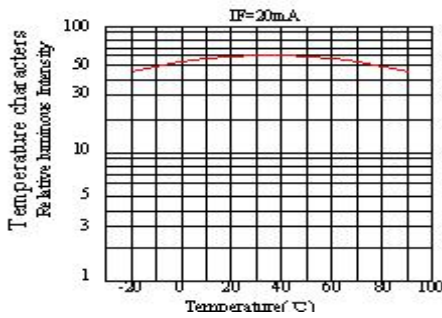


#### Notes:

The data are an typical presentation of the product,Contact customer service for details of technical information and warranty.

The product is sensitive to static antistatic operation environment is recommended

Products are shipped in either bulk bag package or taping.



## ■ Typical Optical/Electrical Characteristics 光电特性参数

Item 项目	Symbol 代号	Condition 测试条件	测试条 件	Min 最小值	Typ 典型值	Max 最大值	Unit 单位
Forward Voltage 正向电压	VF	IF=20mA	R	1.8	2.0	2.2	V
			G	3.0	3.2	3.4	
			B	3.0	3.2	3.4	
Light intensity 光强度	IV	IF=20mA	R	1500	2000	2500	mcd
			G	4000	4500	5000	
			B	1500	2000	2500	
Wavelength 波长	WD	IF=20mA	R	620	623	625	nm
			G	517	520	523	
			B	465	467	470	
Reverse current 逆向电流	IR	IF=20mA		0	/	5	uA
Viewing Angle 半光全角	2 θ 1/2	IF=20mA				20	deg
Recommend Forward Current 持续正向电流	IF(rec)	IF=20mA				20	mA

### Notes:

1. Work absolute ratings Ta=25°C humidity=60% 工作常规值 温度=25°C 湿度=60%
2. Tolerance of measurement of forward voltage±0.1V 正向电压误差范围±0.1V
3. Test Machine: SSP6612 series LED test system



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\* Refer to reliability test standard specification for in this line.

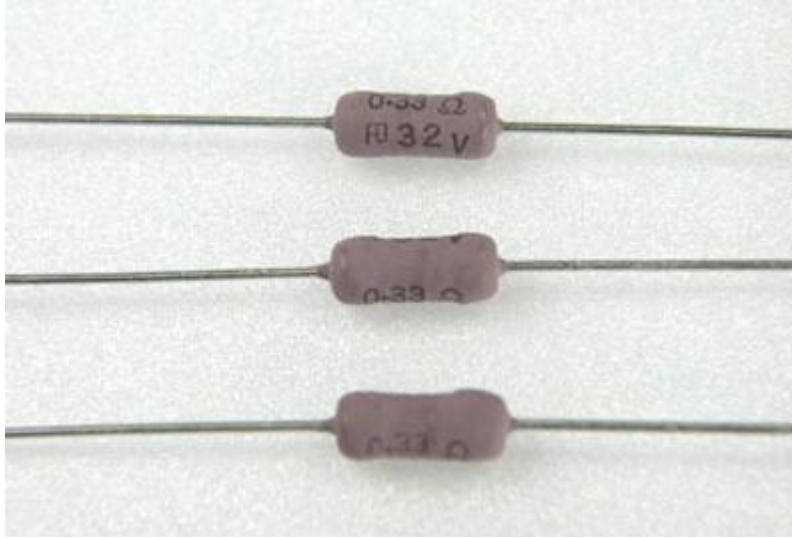
### ● Criteria for Judging The Damage

Type	Test Item	REF. Standard	Test Condition	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	JIS C 7021 (1997) A-4	-20°C→25°C→80°C→ 25°C 30mins,5mins,30mins,5mins	100 cycles	0/100
	High Humidity Heat Cycle	JIS C 7021 (1997) A-5	30°C→65°C 90%RH 24hrs/1cycle	10 cycles	0/100
	High Temperature Storage	JIS C 7021 (1997) B-10	Ta=80°C	1000hrs	0/100
	Humidity Heat Storage	JIS C 7021 (1997) B-11	Ta=60°C RH=90%	1000hrs	0/100
	Low Temperature Storage	JIS C 7021 (1997) B-12	Ta= -30°C	1000hrs	0/100
Operation Sequence	Life Test	JIS C 7035 (1985)	Ta=25°C If=20mA	1000hrs	0/100
	High Humidity Heat Life Test	*	60°C RH=90% If=20mA	500hrs	0/100
	Low Temperature Life test	*	Ta= -20°C If=20mA	1000hrs	0/100
Destructive Sequence	Resistance to Soldering Heat	JIS C 7021 (1997) A-11	Tsol=260 ± 5°C,10sec (3mm from the base of the epoxy bulb)	1 time	0/20
	Solder ability	JIS C 7021 (1997) A-2	Tsol=235 ± 5°C,5sec (Using flux)	1 time (over 95%)	0/20
	Lead Pull/Bend Test	JIS C 7021 (1997)A-11	Load 2.5N (0.25kgf) 0°→90°→0° Bending 3 times	No noticeable damage	0/20

## 6. Resistor Specification ( RMS 1/4W 200kΩ):

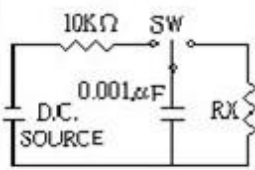
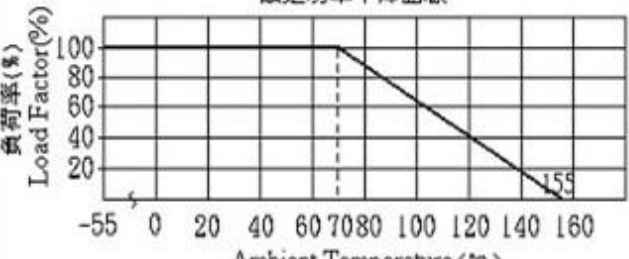
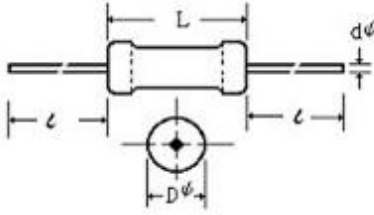
Item	Symbol	Test Condition	Criteria for Judgment	
			M in.	M ax.
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	---	Initial data x 1.1
Reverse Current	I <sub>R</sub>	V <sub>R</sub> = 5V	---	Initial data x 2.0
Luminous Intensity	I <sub>v</sub>	I <sub>F</sub> =20mA	Initial data x 0.7	---





### CHARACTERISTICS 性能

ITEM 项目	SPEC 规格	REMARKS 备注
Load life under high temperature 高温负荷寿命	±1.5%	JIS C 5201-1 (4.25.1) Rated voltage at 70°C for 1,000 hours 额定电压70°C 1,000小时
Load life under high humidity 耐湿负荷寿命	±5%	JIS C 5201-1 (4.24) Rated voltage at 40°C,95% RH for 1,000 hours 额定电压40°C,95% RH 1,000小时
Temp. coeff of resistance 温度系数	< 1K= ±500 PPM/°C ≤100KΩ=±300 ppm/°C >100KΩ=±200 ppm/°C	JIS C 5201-1 Room temp. + 100°C, 30min 室温 + 100°C, 30分钟
Short time overload 短时间过负荷	±1%	JIS C 5201-1 (4.13) 6.25 times the rated power for 5 seconds 6.25倍额定功率 5秒
Temperature cycling 温度循环	±1%	JIS C 5201-1 (4.19) 5 cycles for -25°C±3°C(30min); room temp.(30min) ~ +85°C±3°C(30min) room temp. (30min)
Resistance to soldering heat 焊锡耐热	±1%	JIS C 5201-1 (4.18) 260°C±5°C for 10 seconds(焊锡槽) 350°C±10°C for 3.5 seconds(手焊锡)
Insulation resistance 绝缘电阻	>1,000MΩ	JIS C 5201-1 (4.6.1.1) 500 volt Insulation test 1min 500 V绝缘测试电压1分钟

<p>Pulse withstanding voltage 脉冲</p>	<p>±20%</p>	<p>■The following discharge cycle is repeated in the circuit of the left fig. 2.5 sec. ON 2.5 sec. OFF 50 cycles. With following DC pulse test voltage</p> <p>■ Pulse voltage:1/6W,S1/4W: 3KV.                  ≧1/4W: 100KΩ: (3KV);                  100KΩ-620KΩ: (5KV); &gt; 620KΩ: (10KV)</p> 
<p>DERATING CURVE 额定功率下降曲线</p> 		
		<p>Various type of forming &amp; taping are available</p>
		<p>提供插装的造型与带装</p>
		<p>Coating color: RMU1/4W,RMU1/6W、dark blue, other、pink◦</p>
		<p>涂装颜色: RMU1/4W,RMU1/6W蓝色,其他粉红色◦</p>

### ■ CHARACTERISTICS 性能

Model 型号	Power Rating 额定功率 (W)	Resistance Range E-24 阻值范围 Ω	Maximum Working Voltage 最高使用 电压	Dielectric Withstandi ng Voltage 耐电压	Dimension 尺寸 (mm)			
					L	D φ	t	d φ
RMU1/4W 、 RMS1/2W	1/4,1/2	10Ω ~ <100M	1600V	700V	6±0.3	2.4±0.1	28±2	0.6±0.05