



Data Sheet

Customer: _____
Part No: CL-SPD150PT-02
Sample No: _____
Description: 3216 SMD Photo Transister
Item No: _____

Customer			
Check	Inspection	Approval	Date

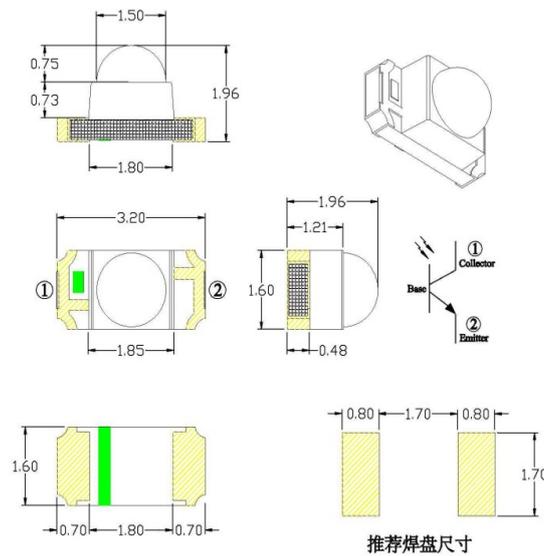
Features

- 1.Outline Package:3.2x1.6x1.96mm
- 2.Emitted Color: non-luminance
- 3.Lens Appearance: Black
- 4.Comply with RoHS
- 5.PACKAGE: 2000PCS / REEL

Applications

1. Applicable to all kinds of mechanical keyboard launch requirements
2. Suitable for all kinds of infrared transmitting and receiving equipment
3. Infrared remote control transmitter is suitable for all kinds of electronic products
4. Applicable to all kinds of small household electrical appliance products for reflection application

Package Outline Dimensions



NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are $\pm 0.2\text{mm}$ (0.008inch)

Absolute maximum ratings at Ta=25°C

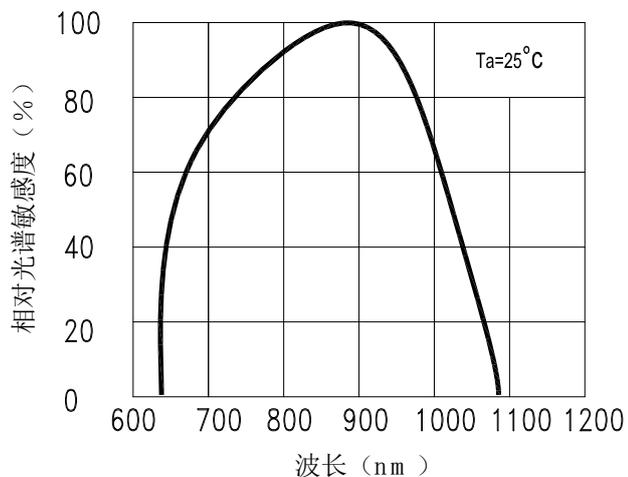
Parameter	Symbol	Value	Unit
Power dissipation	Pd	100	mW
Collector-Emitter Voltage	Vceo	30	V
Emitter-Collector Voltage	Veco	5	V
Operating temperature range	Top	-30 ~ +85	°C
Storage temperature range	Tstg	-40 ~ +100	°C
Soldering Temperature	Tsol	Max. 260° C for 8 sec Max.	
Electrostatic Discharge	ESD	2000 (HBM)	V

Electrical-optical characteristics at Ta=25°C

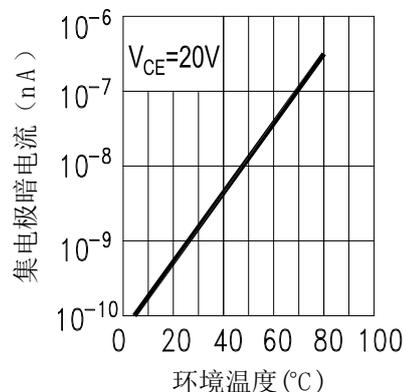
Parameter	Test Condition	Symbol	Value			Unit
			Min.	Typ.	Max.	
Collector-Emitter Breakdown Voltage	$I_R=100\mu A$ $E_e=0mW/cm^2$	Bvceo	85	--	--	V
Emitter-Collector Breakdown Voltage	$I_R=100\mu A$ $E_e=0mW/cm^2$	Bveco	8.2	--	--	V
Collector Emitter Saturation voltage	$I_c=2mA$ $E_e=0.5mW/cm^2$	Bvc(sat)		--	0.3	V
Rise Time	VCE=5V IC=1Ma RL=1KΩ	Tr		10	--	us
Fall Time	VCE=5V IC=1Ma RL=1KΩ	Tf	--	10	--	us
Collector Dark Current	VCE=20V $E_e=0mW/cm^2$	ICEO	--	--	30	nA
On State Collector Current	VCE=5V $E_e=1mW/cm^2$ $\lambda=940nm$	ICEO	5	--	6	mA
Radiation intensity	$E_e=1mW/cm^2, \lambda$ $p=940nm$ VCE=5V	MW/SR	20	22	24	uA

Typical optical characteristics curves

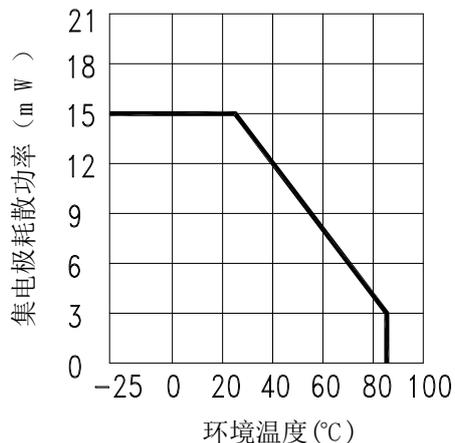
图一：光谱敏感度曲线



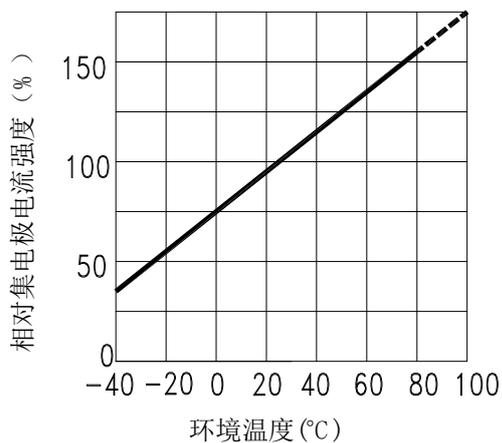
图二：集电极暗电流VS环境温度曲线



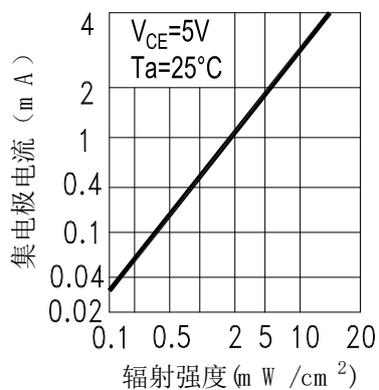
图三：耗散功率VS环境温度曲线



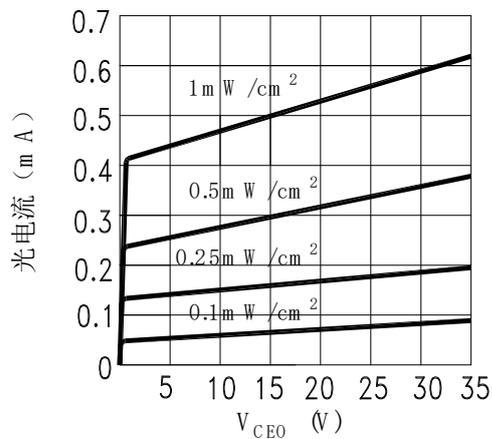
图四：相对集电极电流强度VS环境温度曲线



图五：集电极电流VS辐射照度



图六：光电流VS VCE0 曲线



RELIABILITY

NO	TEST ITEM	Guideline	Test conditions	Duration	Samples QTY	Acceptance level (unqualified
						number/total number of samples))
1	temperature cycle	JEITA ED-4701	-40°C~25°C~ 100°C~ 25°C 30 MINUTE 5 MINUTE 30 MINUTE 5 MINUTE	Loop 100 rounds	50	0/50
2	Thermal shock	MIL-STD-202G	-40°C~100°C 15 分钟 15 分钟	Loop 500 rounds	50	0/50
3	high temperature storage	JEITA ED-4701 200 201	T _a =100°C	1000 hour	50	0/50
4	LOW temperature storage	JEITA ED-4701 200 201	T _a =-40°C	1000 hour	50	0/50
5	Normal temperature life test		T _a =25±5°C I _F =20mA	1000 hour	50	0/50
6	High temperature and humidity life test		T _a =60°C RH=85% I _F =20mA	1000 hour	50	0/50
7	Solderability (reflow soldering)	JEITA ED-4701 300 303	T _{sol} =235°C±5°C , 5 seconds use flux	Solder once, 5 seconds	10	0/10
8	Solder resistance (reflow soldering)	JEITA ED-4701 300 301	T _{sol} =260°C, 10 seconds Pretreatment: 35°C 95%RH 96 hours	Weld twice, 10 seconds each time	10	0/10
NOTE	If the above test items are different from the customer's test requirements or special customers have special requirements, they can be trial-made according to the customer's requirements according to the actual situation.					

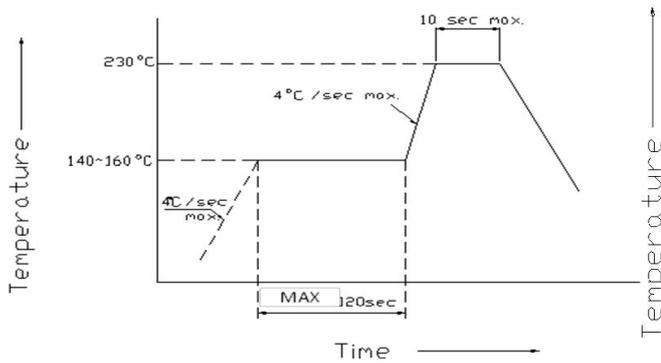
Cautions

(1) Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and Second soldering process.

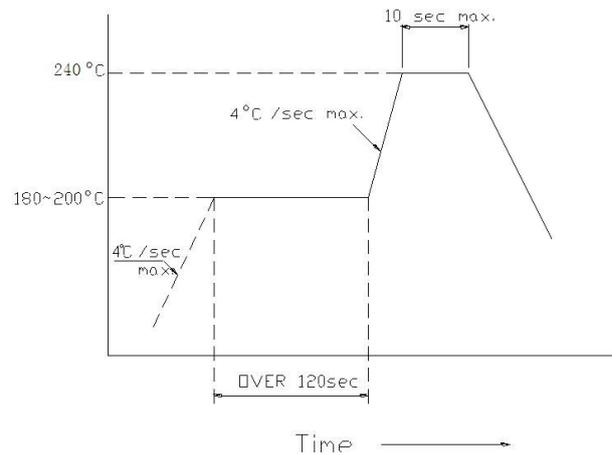
(Recommended soldering conditions)

回流焊接 Reflow Soldering		手工焊接	
预热温度 Pre-heat temperature	有铅 Lead Solder	无铅 Lead-free Solder	温度 Temperature
预热时间 Pre-heat time	140 ~ 160° C 120 sec. Max.	180 ~ 200° C 120 sec. Max.	焊接时间 Soldering time
峰值温度 Peak temperature	230° C Max. 10 sec. Max.	240° C Max. 10 sec. Max.	350° C Max. 3 sec. Max. (one time only)
焊接时间 Soldering time	参考下图	参考下图	
条件 Condition			

Lead Solder



Lead-Free Solde



(2) Static Electricity

It is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.

All devices, equipment and machinery must be properly grounded.

Damaged LEDs will show some unusual characteristics such as the forward voltage becomes lower, or the LEDs do not light at the low current. Criteria : ($V_F > 2.0V$ at $I_F=0.5mA$)

(3) Moisture Proof Package

It is recommended that moisture proof package be used .

(4)

Cautions:

4.1.

Please check if there is air leak before opening the package, if so, please return the goods back to take drying process for later using.

4.2

Products can be used within 15days after packaging, after that, they must be:

4.2.1

Soldered within 24 hrs

4.2.2

Used in the condition: $30^{\circ}C$ within and 60%RH below

4.2.3

Stored in 30%RH for moisture below.

4.3.

Products cannot be used for and over 15days after being packaged unless opening the package and take drying our process in $85^{\circ}C/6H$.

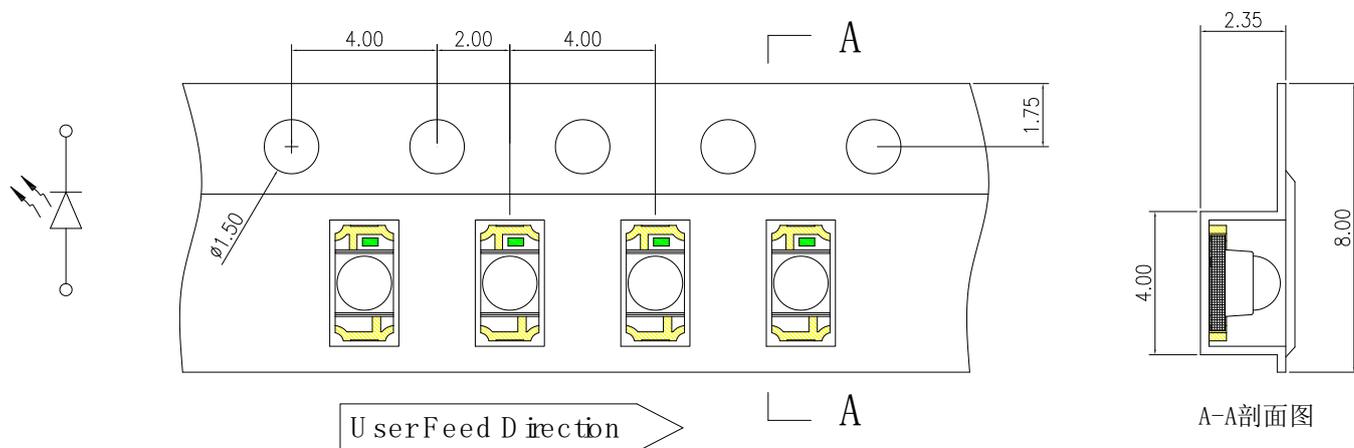
4.4.

Products not be used for or over 60days after being packaged please return back to take drying out and packaging process for forward using.

4.5.

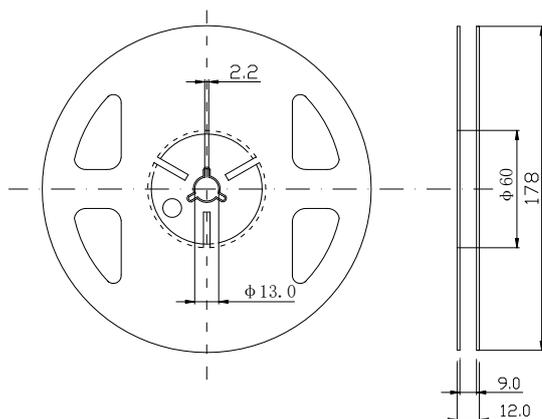
Products not be used after opening the package need to be dried out for $85^{\circ}C/6H$

PACKAGING

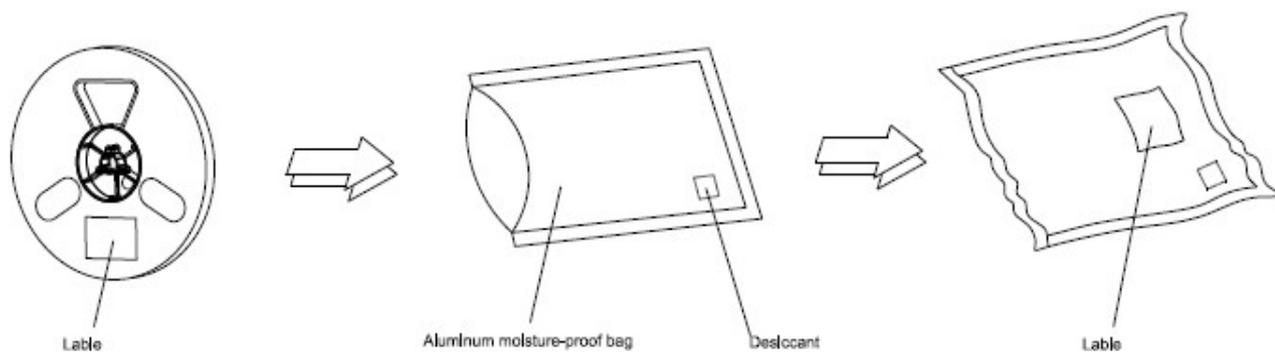


The LEDs are packed in cardboard boxes after taping.

Reel Dimensions



Moisture Resistant Packaging



Note: The tolerances unless mentioned is ± 0.1 mm, Unit: mm