

Ambient Light Sensor LXD/GB5-A1DPZ(SMD-1206)



■ Description

The LXD/GB5-A1DPZ(SMD-1206) is photoelectrical integrated optical sensor designed at $\lambda_p=520\text{nm}$, with double sensitive receiver . It is highly sensitive to visible light , and varies linearly with illumination changing. It is used in saving energy, automatic sensitivity to light , and self-adaptive control in TV , LCD back light , Digital code product, instrument ,industry device etc.

■ Feather

- Small Dark current
 - low illumination response , high sensibility
 - Spectral response close to human eye sensitivity.
 - Output current in proportion to illumination.
 - Built in double sensitive receiver and Optical filter-less, attenuate near infrared automatically .
- Two Optics material packages to choose , to permeate Visible light ,cut off ultraviolet,relative damp infrared ray, And improve optical-filter effect.
- Accord with RoHS ,standard Pb-free, Cd-free.

■ Applications

• Back light source illuminations adjust:

TV 、 Computer display、 LCD Backlight 、 Data code camera 、 MP3/MP4 、 PDA 、 Moble and GPS ;

• Energy saving:

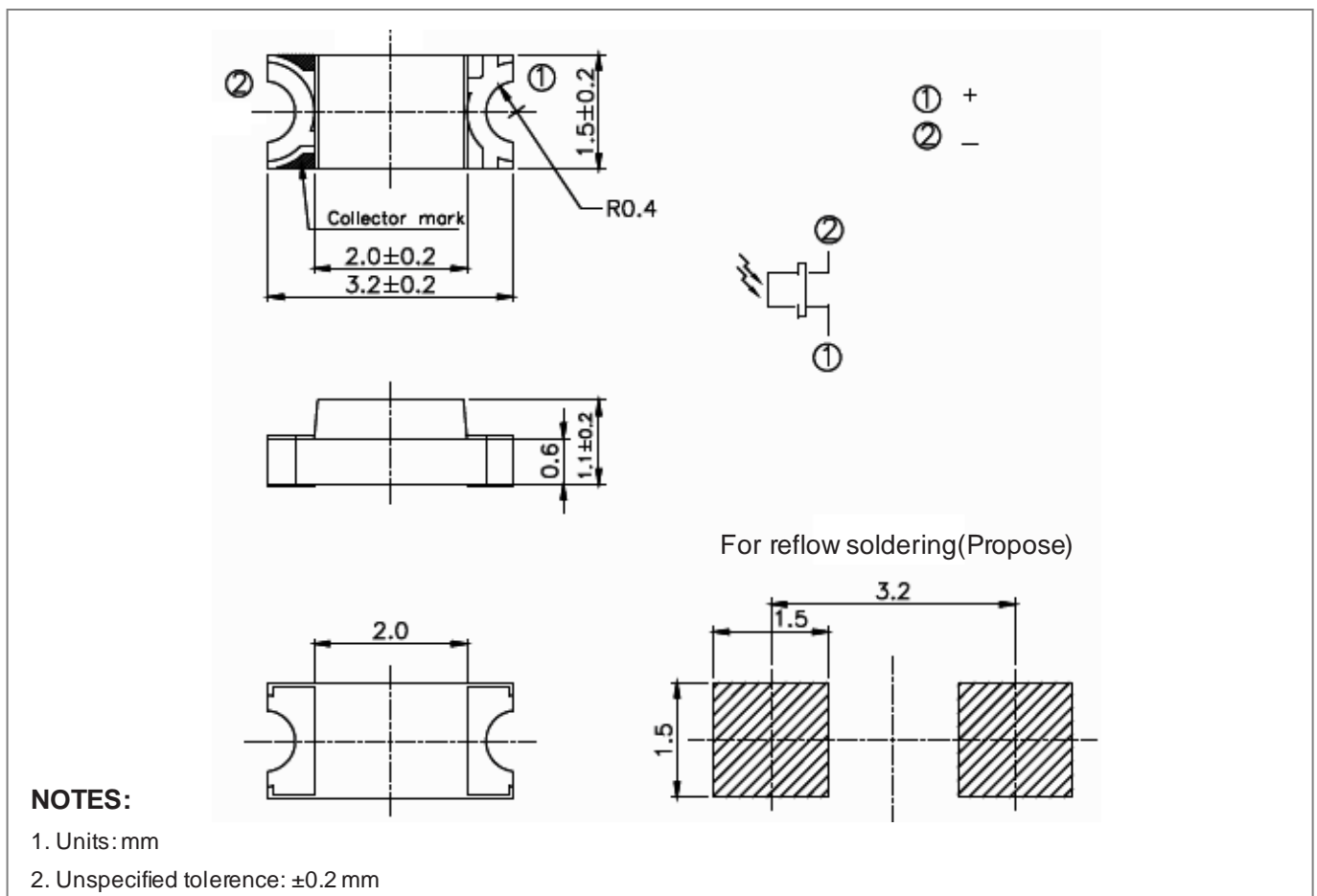
Outdoor advertisement machine、 Inductive lightening utensil、 Toy

• Instrument: Illuminometer and industrial control

• Environment protection substitute:

Substitute for light sensitive resistor, photosensitive diode , photosensitive triode ;

■ External Dimensional



■ Enclosure Material

Component	Material	Color	Characteristic	Environmental protection
Chip	Si	---	---	RoHS
Package Material	Common epoxy	Achromaticity	Light be effected by near infrared light	RoHS

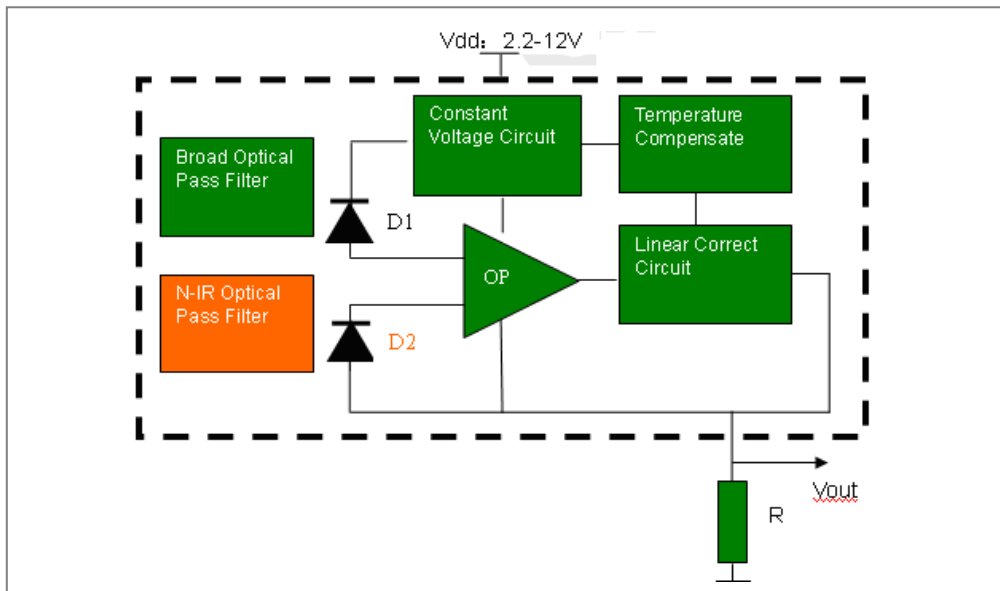
■ Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input Voltage	Vdd	2.4-12	V
Operating Temperature	Topr.	-20 to +75	°C
Storage Temperature	Tstg.	-40 to +120	°C
Soldering Temperature	Tsol.	260	°C
Static Current	I	<5	uA

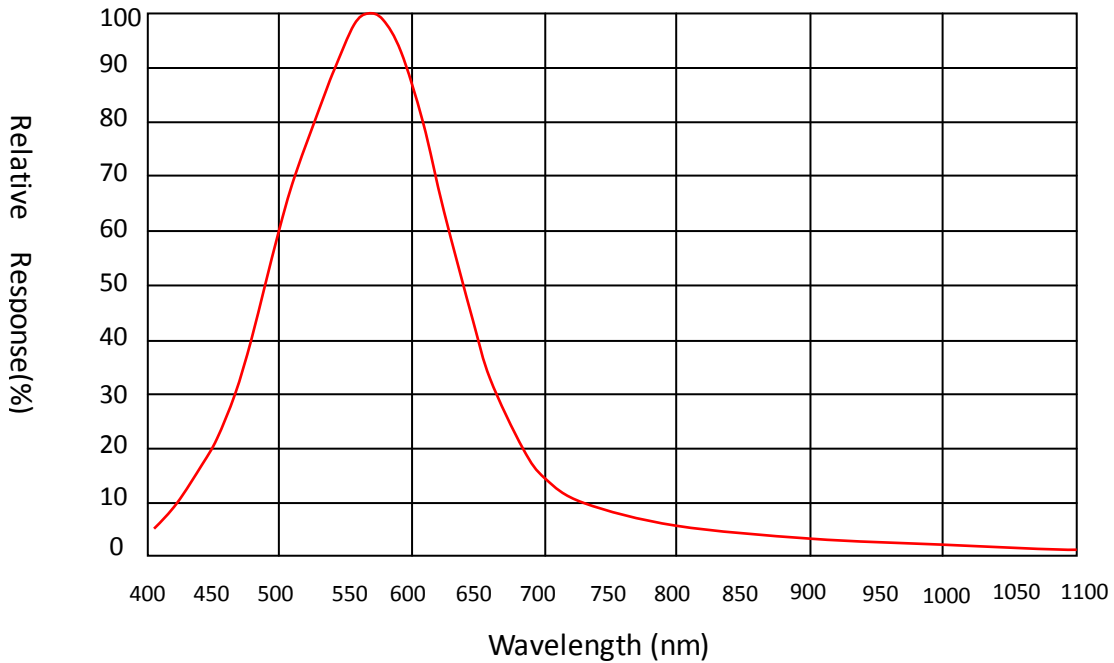
■ Electro-optical Characteristics(Typ.Ta=25°C)

Item	Symbol	Test Conditions (Vcc=5V , R=1KΩ)	Min.	Typ.	Max.	Unit
Light Current of common epoxy resin package sample	I _L	Ev=5 Lux	-	58	-	μA
		Ev=10 Lux	-	113	-	
		Ev=100 Lux	-	758	-	
		Ev=200Lux	-	1318	-	
		Ev=500 Lux	-	2620	-	
		Ev=1000 Lux	-	4060	-	
Quiescent current	I _D	Ev=0 Lux	0	0.03	4	
Typical incident wave	λ _p	---	-	520	-	nm
Responset ime	Rise time	---		2		uS
	Fall time			2		uS

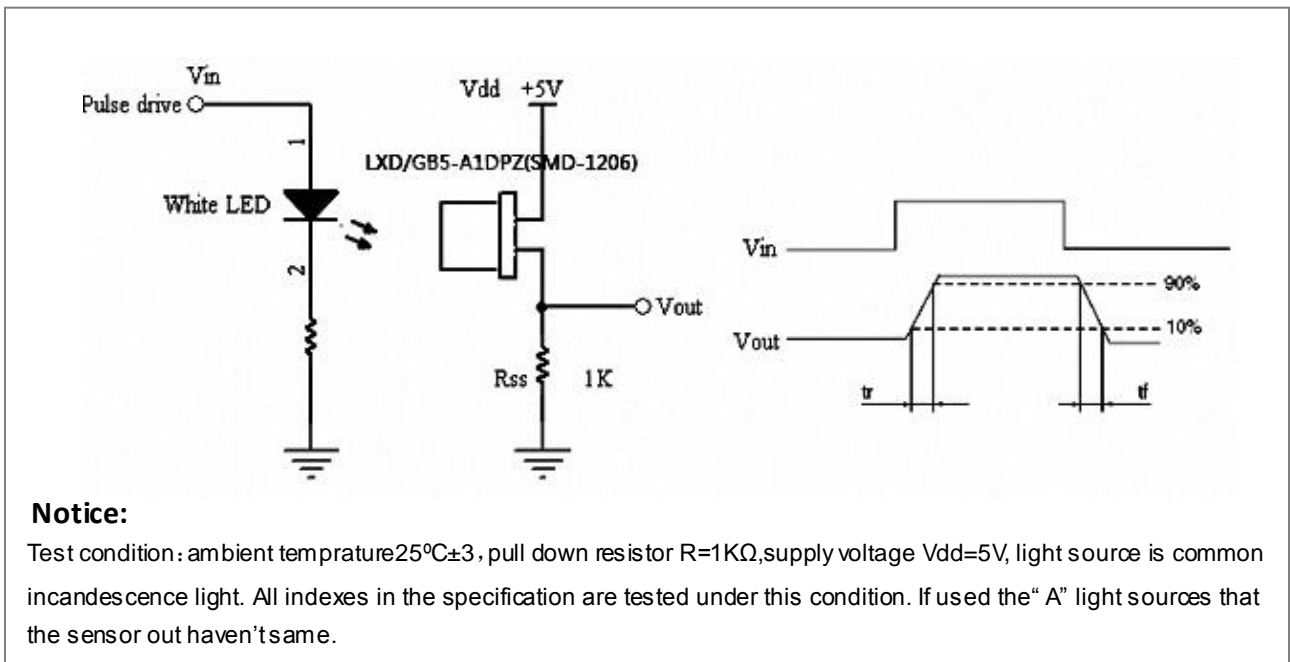
■ Ambient light sensor simplified schematic



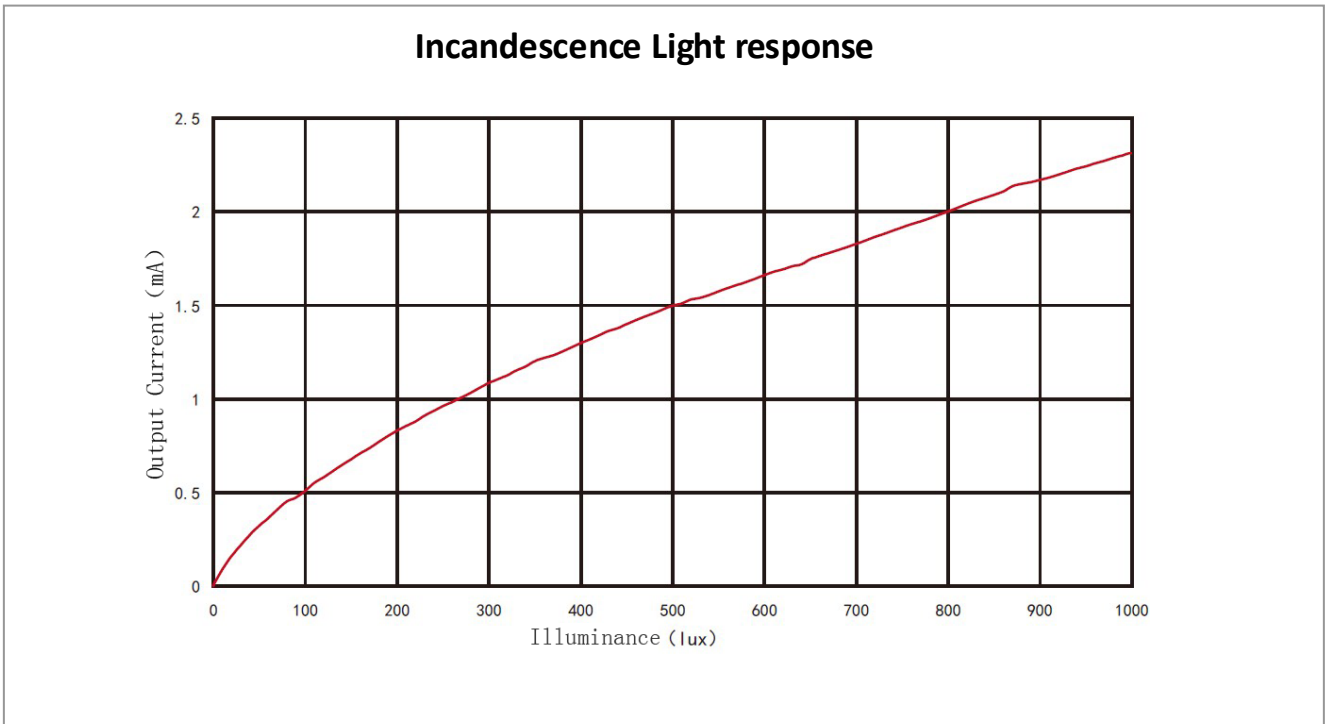
■ Spectral Sensitivity Curves



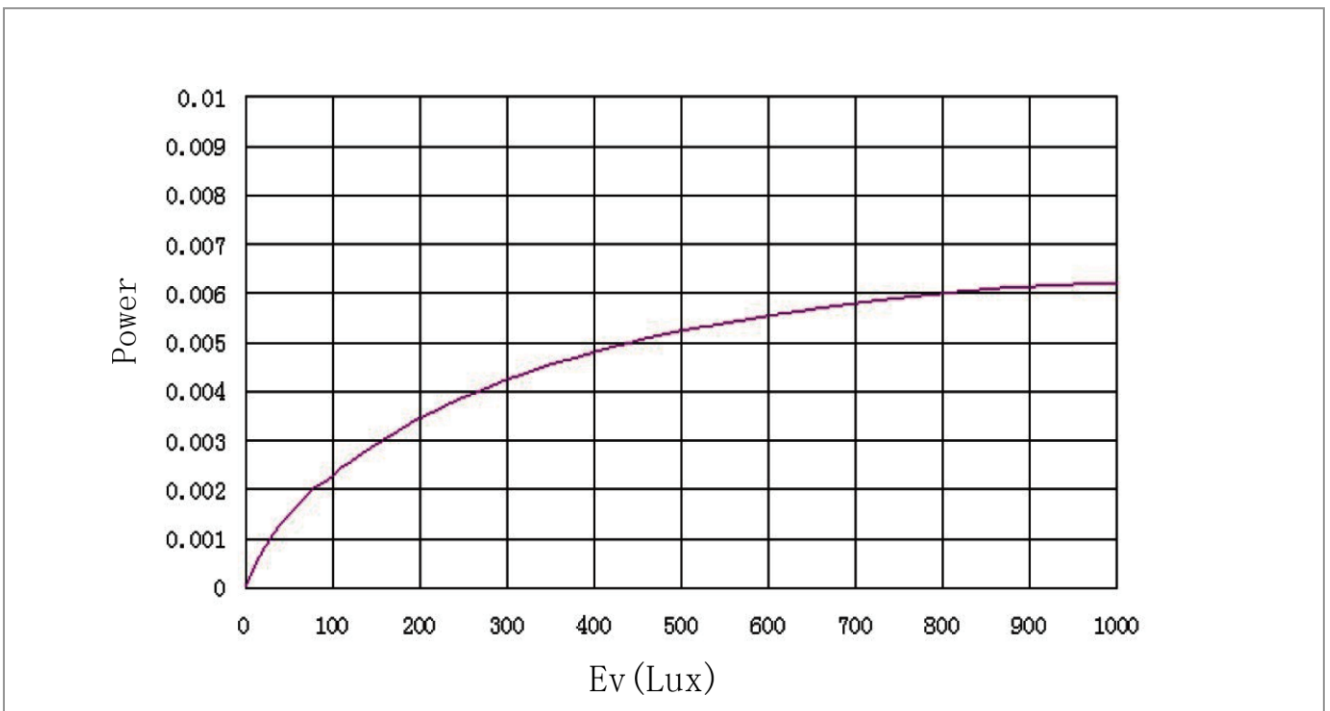
■ Test Circuit(Light Current test circuit and ON/OFF time test circuit)



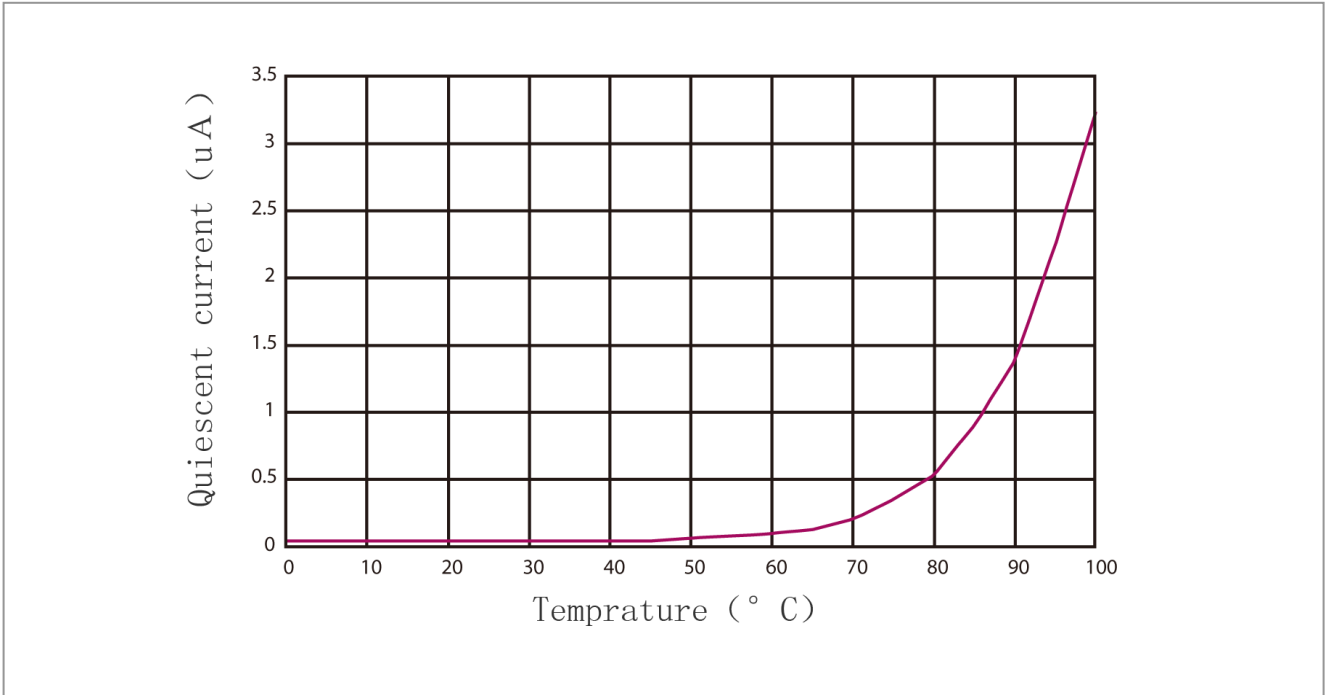
■ **Illuminance Vs. Photo Current** (“A” light sources)



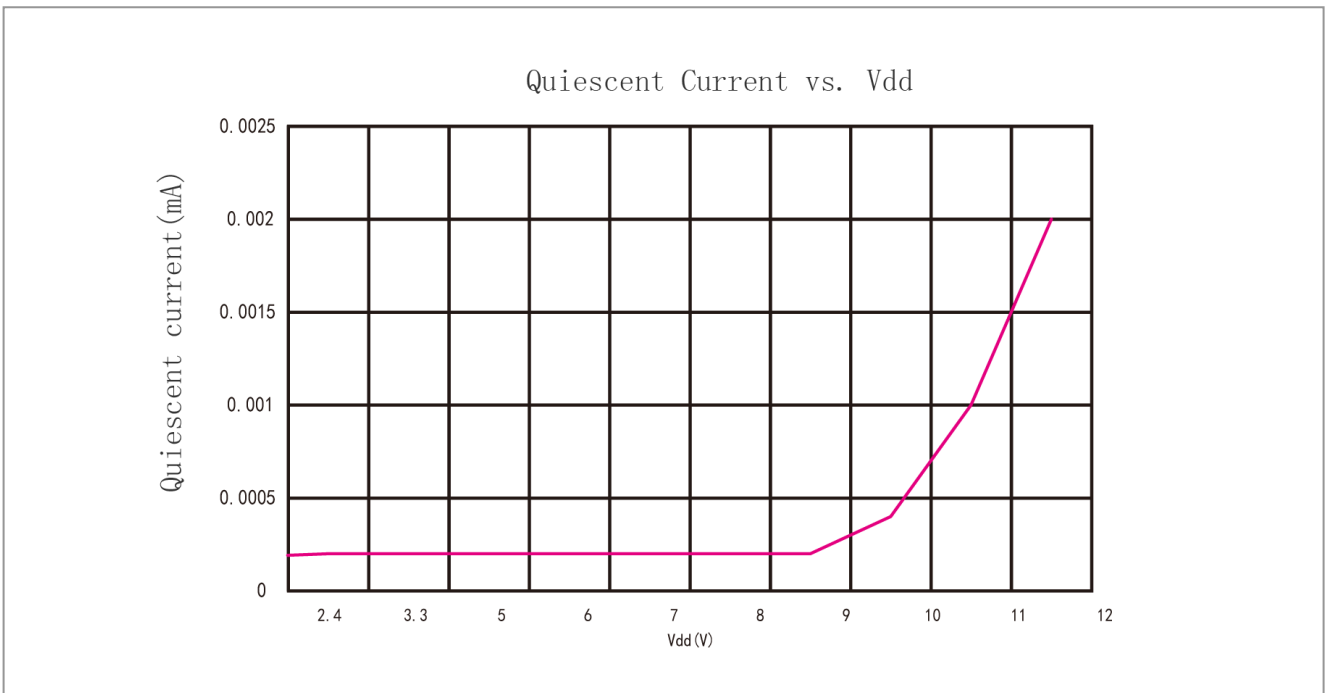
■ **Power & Ev**



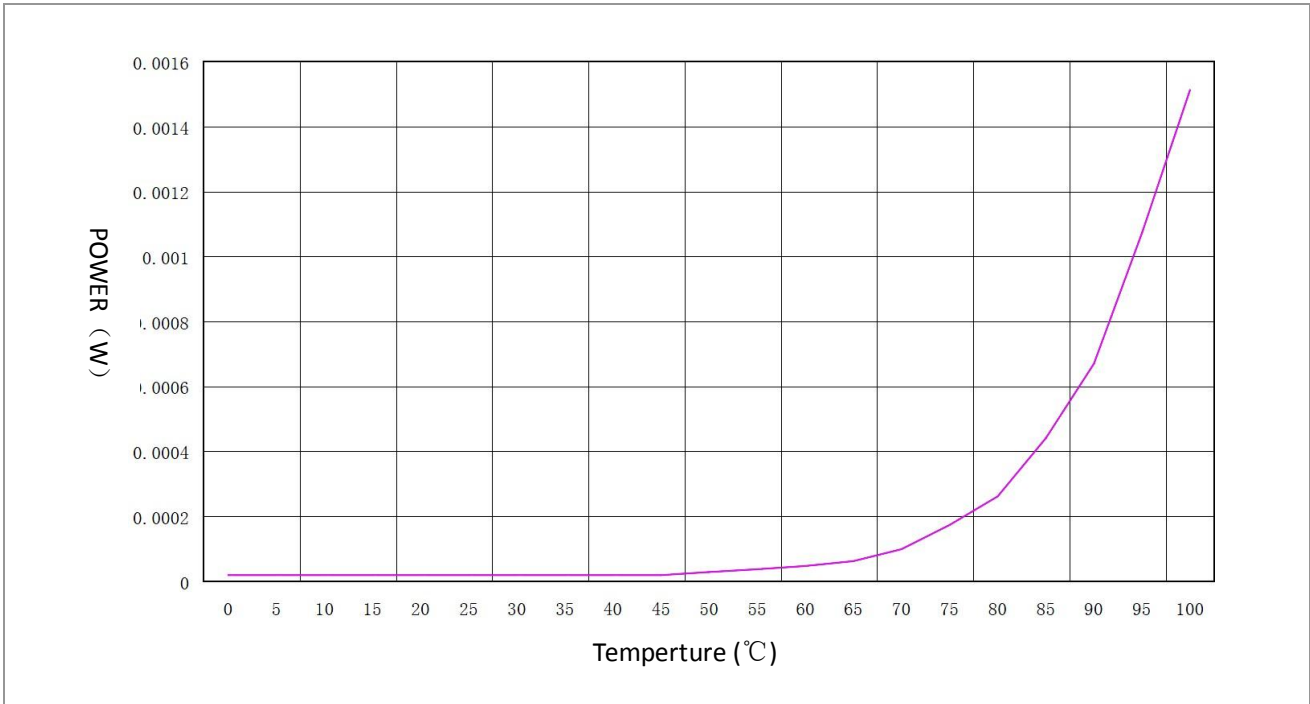
■ **Quiescent current vs. Temperature**



■ **Quiescent current & Vdd**

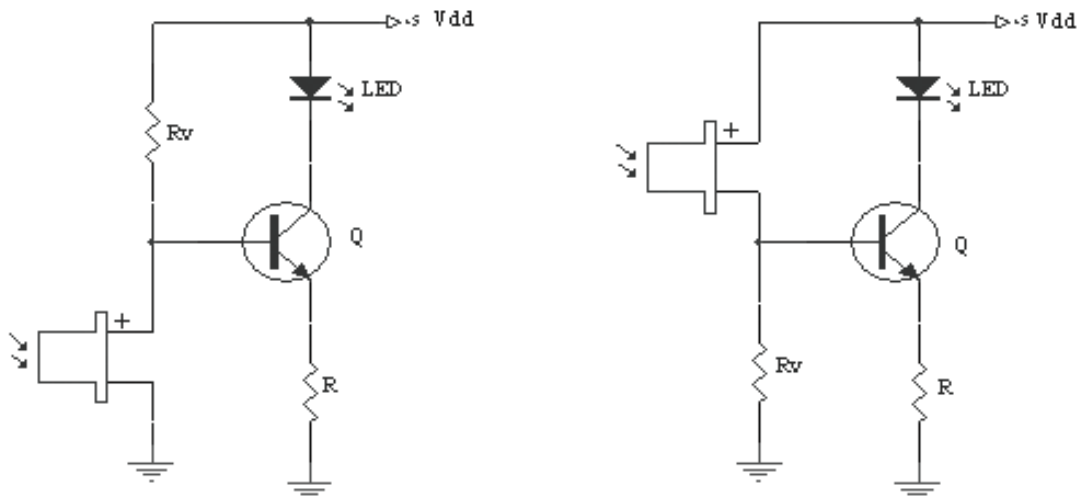


■ Power & Temperature



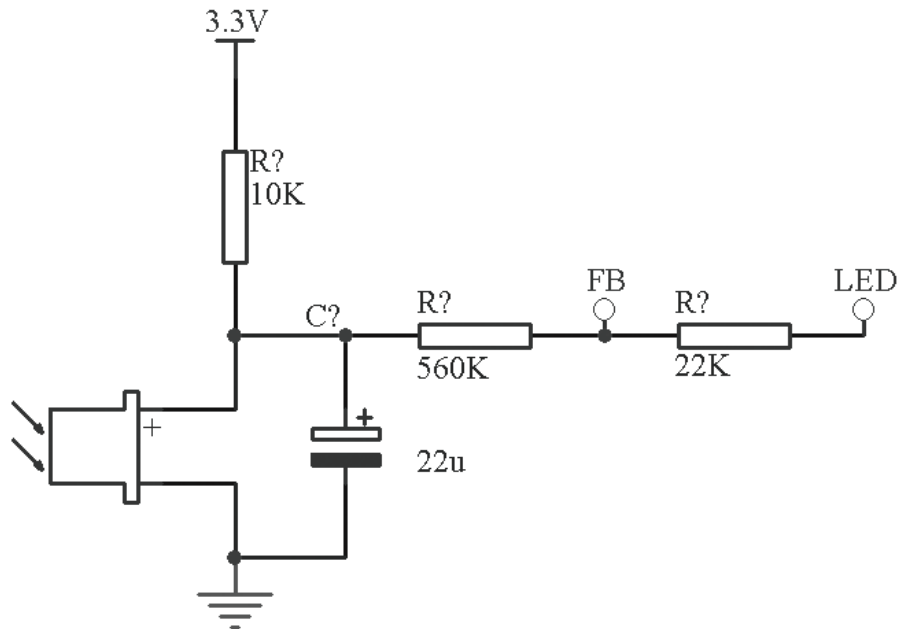
■ Typical Application Circuit

Two Typical Control Circuit of LXD/GB5-A1DPZ(SMD-1206)

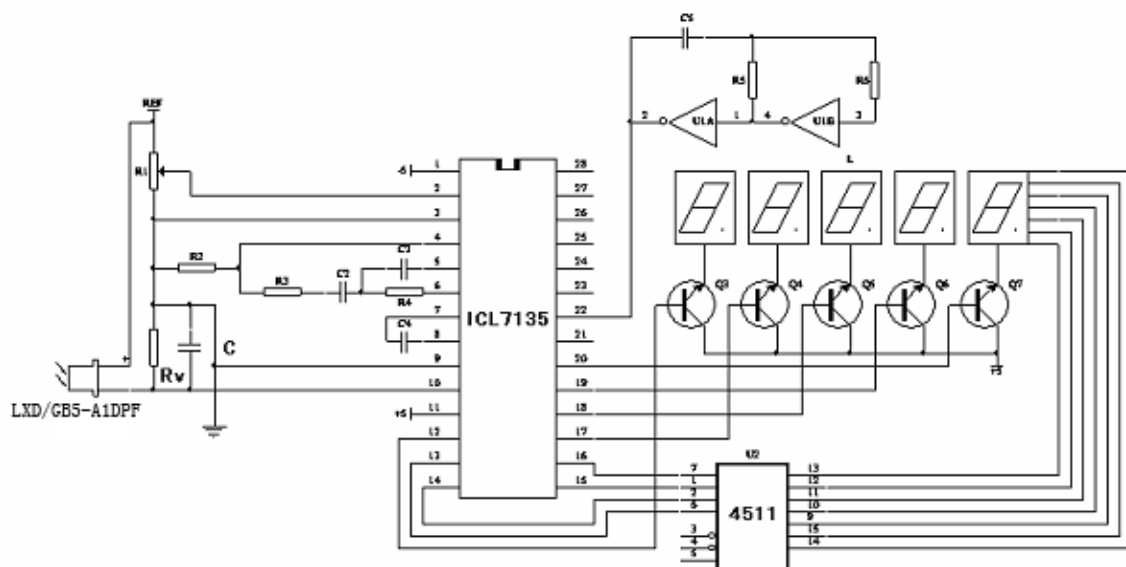


Left chart: Shut down LED by regulating R_v , i.e. to regulate E_v to a fixed value;
 Right chart: Turn on LED by regulating R_v , i.e. to regulate E_v to a fixed value.

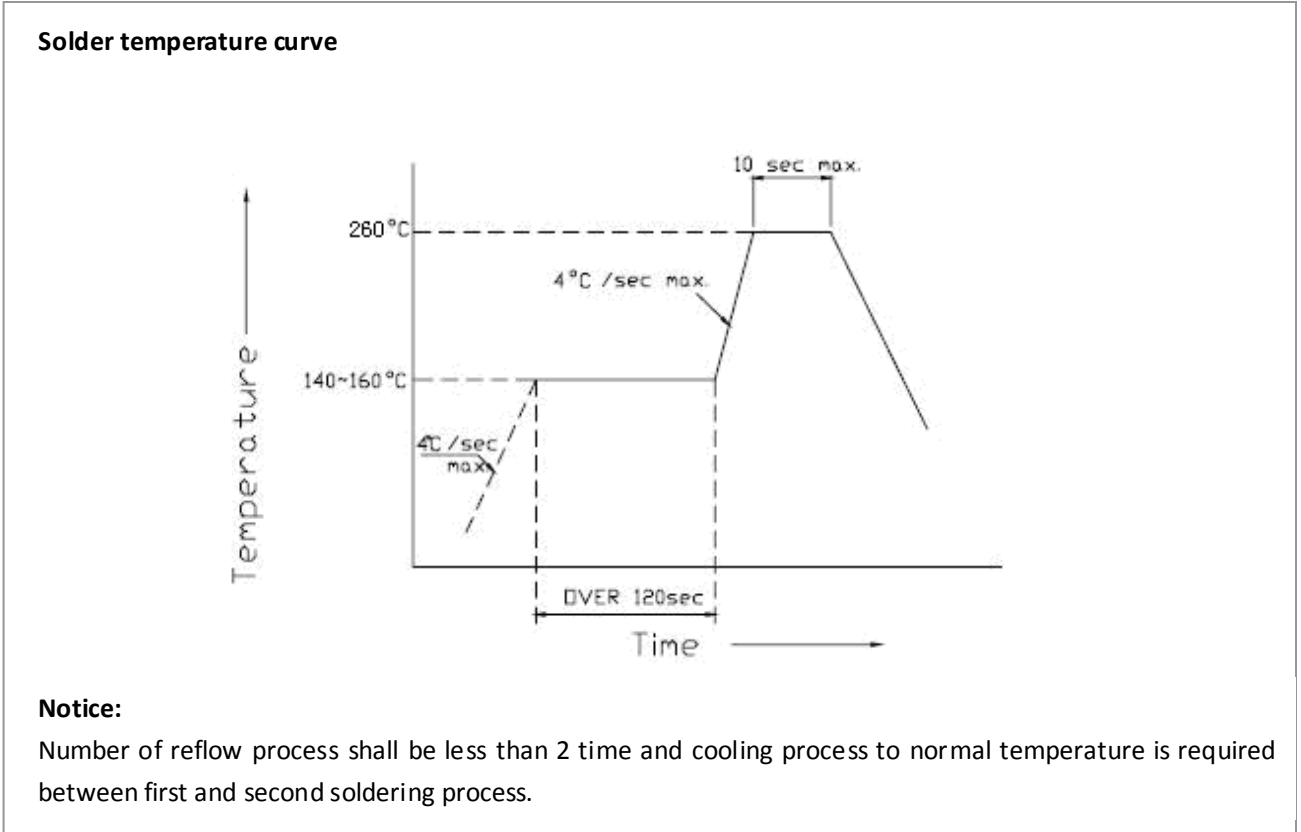
Typical LED Luminance Control Circuit LCD Display Back Light



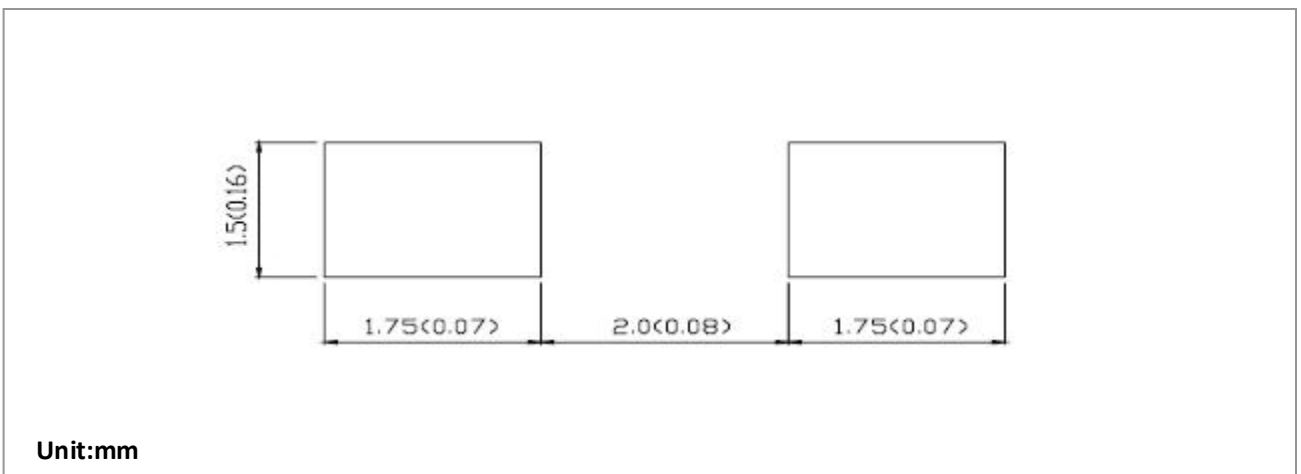
LCD Digital Illuminometer Typical Circuit



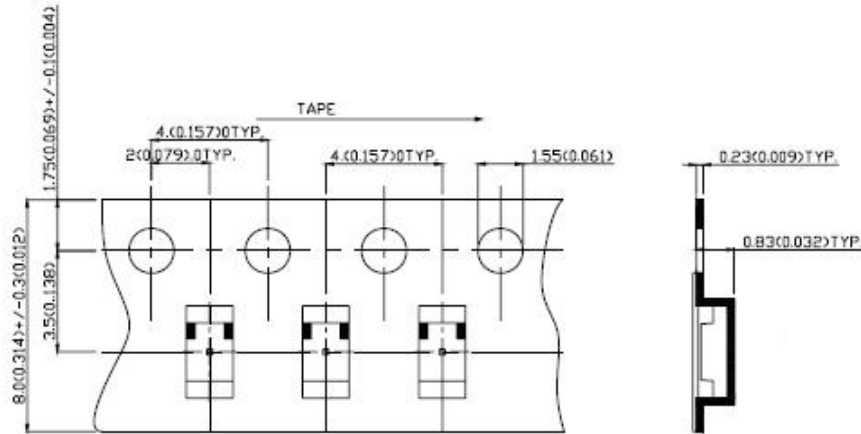
■ SMT reflow soldering instructions



■ Recommended soldering pattern



■ Tape specifications(Unit:mm)



■ Cautions for use

- ◆ We reserve the right to update products without prior notice.
- ◆ Do not use the sensors under conditions that exceed the range of its specifications.
- ◆ Application circuit diagrams and circuit constants contained herein are shown as examples of standard use and operation. Please pay careful attention to the peripheral conditions when designing circuits and deciding upon circuit constants in the set.
- ◆ CMOS IC is contained, so static electricity should be avoided .
- ◆ Be sure to perform soldering at values within the maximum ratings. Take care so that no external force is applied to the lead during and immediately after soldering. Do not perform reflow soldering.
- ◆ The product is compliant with ECC RoHS.
- ◆ The photocurrent will be influenced if the dirty or destroy on the surface.
- ◆ The sensors are small, transparent, plastic packages. They are sensitive to moisture and come in sealed, moisture proof packages.
- ◆ SMD packing as 3000PCS per tray.



SHEN ZHEN LONG XIN DA TECHNOLOGY CO.,LTD

Add.: China-GuangDong-ShenZhen-BaoAn District 44 Road Venture B,fuYang Trade Center ,Rome703

Domestic business	Export business
TEL:0755-29129090-601 29129091	0086-755-29129091-605
Fax:0755-29129092	0086-755-29129090-604
Mail: wusheng888@126.com	web@lxdcn.com
Http:// www.lxdcn.com	

The Specification are the property of Shen Zhen Long Xin Da technology Co.,LTD and shall not be copied or used as commercial purposes without permission.