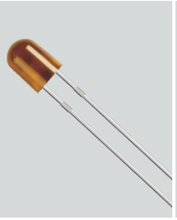
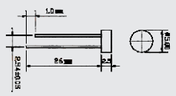
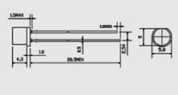
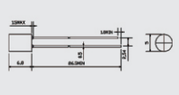
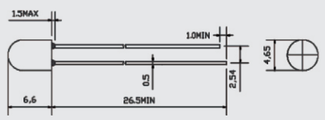
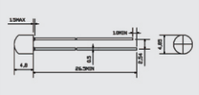
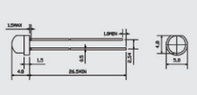
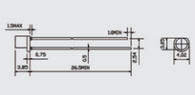
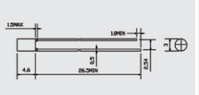
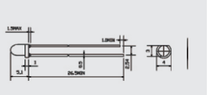
SENBA OPTOELECTRONIC

光敏傳感器
LIGHT SENSOR

Size 外觀尺寸		Φ5 Flat-Head/平頭			Φ5 Round / 圓頭		Φ5 Straw-Hat/草帽		Φ3 Flat-Head /平頭		Φ3 Bullet 子彈頭
Photo 圖片											
Type 型號		LBCETC1-60	LLS05-A有卡	LS06-MΦ5	LS07-CΦ5咖啡色	LS07-AΦ5	LS06-SΦ5	LS06-BΦ5	LS06-SΦ3	LS06-BΦ3	LS07-AΦ3
Dimensions (mm) 膠體尺寸		5.0*2.5	5.0*4.3	5.0*6.8	4.65*6.6	4.8*4.8	4.85*4.8	4.8*4.8	3.05*3.85	3.0*4.6	3.0*5.1
Lens Color 膠體顏色		Water Clear	Water Clear	Water Clear	Coffee Diffused	Water Clear	Water Clear	Water Clear	Water Clear	Water Clear	Water Clear
Collect Light Current(μA) 光電流(典型值)	Vdd=5v Ev=10Lux	50	10	40	35	25	25	50	25	70	100
Dark Current (μA)C-E 暗電流	Vdd=5v Ev=0Lux	<100μA	<50 μA	<50 μA	<50 μA	<50μA	<50μA	<10μA	<10μA	<10μA	<50μA
C-E breakdown Voltage 擊穿電壓	100μA IB=0	30	7.5	70	10	30	70	70	70	70	30
E-C breakdown Voltage 擊穿電壓	100μA IB=0	6.5	5	7	7	6.5	7	7	7	7	6.5
Response 响应光谱		450~1050	450-700	450-1050	450-1050	450-1050	450-1050	450-1050	450-1050	450-1050	450-1050
Half Angle 半角度		100°	80°	80°	30°	30°	80°	80°	60°	60°	30°
Dimensions 尺寸图											

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光敏傳感器
LIGHT SENSOR

Applications 典型應用

- Replacement of Photoresistor (CdS). 替代传统光敏電阻 (CdS)
- Control of backlight brightness for LCD Monitors,TV sets, PDA ,Cameras and Mobile Phones. 自动調節背景光，如：LCD 顯示器，電視，PDA，照相機和移動電話等
- Switch for lighting equipments and Toys. 控制家用、商用照明設備以及玩具
- Various types of infrared detection equipment. 各类红外线检测等设备
- Various types of security products.各类安防产品

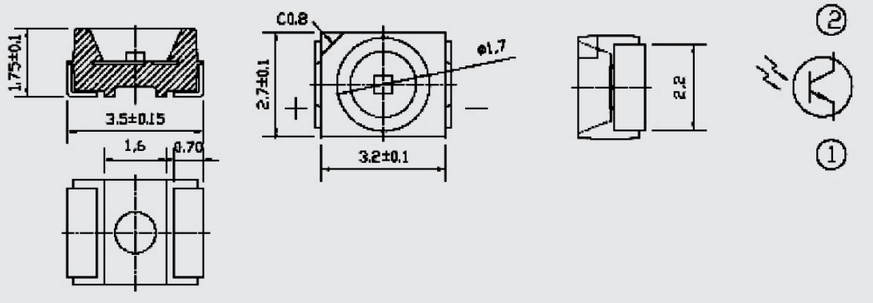
Features 特性

- Linear output conforming to illuminance. 輸出隨光照度線性變化
- Built-in optical filter for spectral response similar to that of the human eye. 内置的光学滤波器的光谱响应类似于人类的眼睛
- High Gain Photocurrent Amplifiers IC. 高增益光電流放大IC
- Temperature Stable. 具有一定的温度穩定性
- Low dark current and Low working Lux. 低暗電流，高靈敏度
- RoHS Compliant / Pb-free / Cd-free. 符合RoHS指令 / 無鉛 / 無鎘等

Cautions 使用說明

- 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.
- Small packing for 1000PCS, Big packing for 10000PCS.

- 不要在超出產品規格範圍的情況下使用本產品。
- 本說明提到的應用電路僅作爲標準使用範例。 請根據外圍設施來設計電路並調整參數設置。
- 本產品內置CMOS IC，應避免靜電產生而導致的破壞。
- 注意保證焊接溫度不能超過額定範圍. 在焊接過程中或焊接完畢時應避免有外力作用于引腳，不可重復焊接。
- 本產品符合歐盟RoHS環保指令。
- 產品表面的損傷和污染均會影響光電流。
- 本產品採用微型透明塑膠封裝，避免在过于潮湿环境中使用。
- 小包裝1000支，大包裝10000支。

Type 型號		SF35TC5TA-5	SF35TC5TFH-10	SF35TC5ZB-20	SF35TC5ZA-30	SF35TC5ZC-40	SF35TC5FH-60	SF35TC5FH0-70	SF35TC5FH-90	SF35TC5FH0-140
Photo 圖片										
Dimensions(mm) 膠體尺寸		3.5*2.8	3.5*2.8	3.5*2.8	3.5*2.8	3.5*2.8	3.5*2.8	3.5*2.8	3.5*2.8	3.5*2.8
Lens Color 膠體顏色		Water Clear	Water Clear	Water Clear	Water Clear	Water Clear	Water Clear	Water Clear	Water Clear	Water Clear
Collect Light Current(μA) 光電流	Vdd=5v Ev=10Lux	10	15	30	40	50	60	70	90	145
Dark Current (μA)C-E 暗電流	Vdd=5v Ev=0Lux	<100μA	<100μA	<100μA	<100μA	<100μA	<100μA	<100μA	<100μA	<100μA
C-E breakdown Voltage 擊穿電壓	100μA IB=0	7.5	30	70	70	70	30	30	30	30
E-C breakdown Voltage 擊穿電壓	100μA IB=0	5	6.5	7	7	7	6.5	6.5	6.5	6.5
Response 响应光谱		450-700	450-1050	450-1050	450-1050	450-1050	450-1050	450-1050	450-1050	450-1050
Half Angle 半角度		120°	120°	120°	120°	120°	120°	120°	120°	120°
Dimensions 尺寸图										

①Emitter
②Collector

①晶體管發射極
②集電極

Notes:
1.All dimensions are in millmeters
2.Tolerances unless dimensions ±0.1mm

備注：
1.所有的尺寸單位是毫米
2.正負公差在0.1毫米

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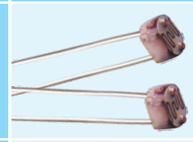
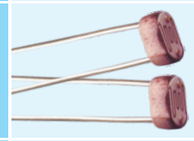
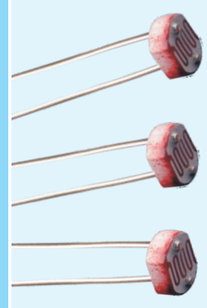
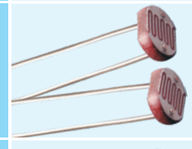
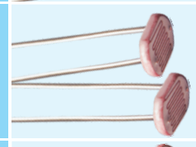
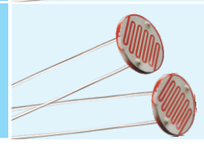
SENBA OPTOELECTRONIC

光敏電阻
LDR SENSOR

Specification 規格	Photo 圖片	Type 型號	Max.Voltage 最大電壓(VDC)	Max.Power 最大功耗(MW)	Spectrum Peak Value 光譜峰值(nm)	Light Resistance 亮電阻(KΩ)	Dark Resistance 暗電阻(MΩ)	γ_{10}^{100}	Response Time 回應時間(ms)	
									Increase 上升	Decrease 下降
Φ3 Series/系列		GL3516	100	50	540	5–10	0.6	0.5	30	30
		GL3526	100	50	540	10–20	1	0.6	30	30
		GL3537–1	100	50	540	20–30	2	0.6	30	30
		GL3537–2	100	50	540	30–50	3	0.7	30	30
		GL3547–1	100	50	540	50–100	5	0.8	30	30
Φ4 Series/ 系列		GL4516	150	50	540	5–10	0.6	0.5	30	30
		GL4526	150	50	540	10–20	1	0.6	30	30
		GL4537–1	150	50	540	20–30	2	0.6	30	30
		GL4537–2	150	50	540	30–50	3	0.7	30	30
		GL4548–1	150	50	540	50–100	5	0.8	30	30
Φ5 Series/系列		GL5516	150	90	540	5–10	0.5	0.5	30	30
		GL5528	150	100	540	10–20	1	0.6	20	30
		GL5537–1	150	100	540	20–30	2	0.6	20	30
		GL5537–2	150	100	540	30–50	3	0.7	20	30
		GL5539	150	100	540	50–100	5	0.8	20	30
		GL5549	150	100	540	100–200	10	0.9	20	30
		GL5606	150	100	560	4–7	0.5	0.5	30	30
		GL5616	150	100	560	5–10	0.8	0.6	30	30
		GL5626	150	100	560	10–20	2	0.6	20	30
		GL5637–1	150	100	560	20–30	3	0.7	20	30
		GL5637–2	150	100	560	30–50	4	0.8	20	30
		GL5639	150	100	560	50–100	8	0.9	20	30
		GL5649	150	100	560	100–200	15	0.95	20	30
Φ7 Series/系列		GL7516	150	100	540	5–10	0.5	0.6	30	30
		GL7528	150	100	540	10–20	1	0.6	30	30
		GL7537–1	150	150	560	20–30	2	0.7	30	30
		GL7537–2	150	150	560	30–50	4	0.8	30	30
		GL7539	150	150	560	50–100	8	0.8	30	30
Φ10 Series/系列		GL10516	200	200	560	5–10	1	0.6	30	30
		GL10528	200	200	560	10–20	2	0.6	30	30
		GL10537–1	200	200	560	20–30	3	0.7	30	30
		GL10537–2	200	200	560	30–50	5	0.8	30	30
		GL10539	200	200	560	50–100	8	0.8	30	30
Φ12 Series/系列		GL12516	250	200	560	5–10	1	0.6	30	30
		GL12528	250	200	560	10–20	2	0.6	30	30
		GL12537–1	250	200	560	20–30	3	0.7	30	30
		GL12537–2	250	200	560	30–50	5	0.7	30	30
		GL12539	250	200	560	50–100	8	0.8	30	30
Φ20 Series/系列		GL20516	500	500	560	5–10	1	0.6	30	30
		GL20528	500	500	560	10–20	2	0.6	30	30
		GL20537–1	500	500	560	20–30	3	0.7	30	30
		GL20537–2	500	500	560	30–50	5	0.7	30	30
		GL20539	500	500	560	50–100	8	0.8	30	30

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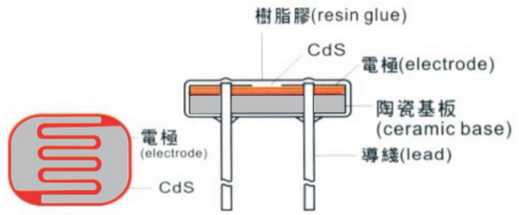
光敏電阻
LDR SENSOR

Introduction 簡介

LDR Sensor is a resistor which made of semi-conductor material, and the conductance changes with luminance variation .
LDR Sensor can be manufactured with different figures and illuminated area based on this characteristic.LDR Sensor is widely used in many industries, such as toys,lamps,camera,etc.

光敏電阻是一種半導體材料製成的電阻，其電導率隨著光照度的變化而變化。利用這一特性製成不同形狀和受光面積的光敏電阻。光敏電阻廣泛應用於玩具、燈具、照相機等行業。

Schematic Drawing 結構示意圖



Performances and Features 性能及特點

- Coated with epoxy 環氧樹脂封裝
- Good reliability 可靠性好
- High sensitivity 靈敏度高
- Small volume 體積小
- Fast response 反應速度快
- Good spectrum characteristic 光譜特性好

Applicaion 應用範圍

- Switch 光控開關
- Light control 室內光線控制
- Electronic toy 電子玩具
- Light control lamp 光控燈
- Photoelectric contro 光電控制
- Industrial control 工業控制
- Camera automatic photometry 照相機自動測光
- Alarm 報警器

Test Conditions 測試條件

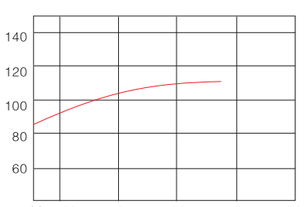
- Light resistance: Irradiated by 400–600Lux light for two hours, then test with 10Lux under standard light source A(as colour temperature 2856K).
- 亮電阻： 用400–600Lux 光照射2 小時後，在標準光源（色溫2856K）10Lux 光下的測試值；
  Dark resistance: Refer to the resistance ten seconds after the 10Lux light is shut up.
- 暗電阻： 關閉10Lux 光照後第10 秒的阻值；
- γ value: Logarithm of the ratio of the standard resistance value under 10Lux and that under 100Lux. γ值： 10Lux 照度和100Lux 照度下的標準電阻值之比的對數。

$$\gamma=\frac{Lg(R10/R100)}{Lg(100/10)}=Lg(R10/R100)$$

- R10,R100 are the resistances under 10Lux and 100Lux respectively
  R10、R100 分別爲10Lux、100Lux 照度下的電阻值（γ的公差爲±0.1）
- Max. power consumption: Maximum power at the environmental temperature 25℃.
  最大功耗： 環境溫度爲25℃時的最大功耗；
- Max. external voltage: Maximum voltage to be continuously given to component in the dark.
  最大外加電壓：在黑暗中可連續施加給元件的最大電壓；

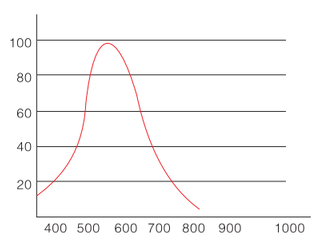
Main Characteristics Curve and Dimensions 主要特性曲線

Relative Resistance(%)
電阻變化率（%）



Temperature–Property 温度特性曲綫

Relative Response(%)
相對靈敏度（%）



Spectrum Response Characteristic 光譜回應特性曲綫

Illuminance–Resistance Characteristics Curve 光照度–電阻特性曲線

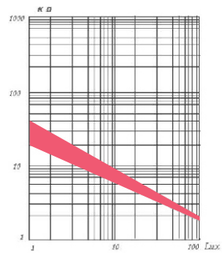


Fig. 1

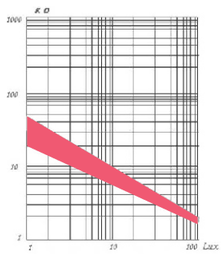


Fig. 2

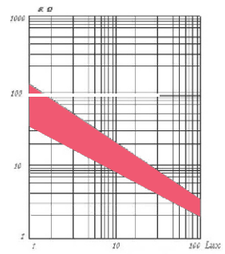


Fig.3

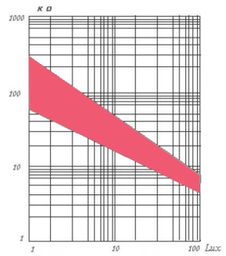


Fig.4

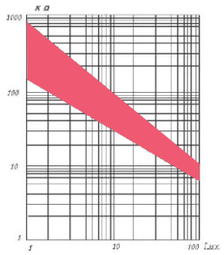


Fig. 5

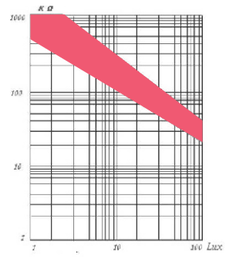
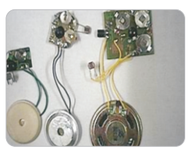
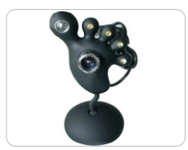
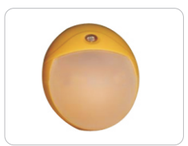


Fig.6

LDR Sensor Application 产品应用







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