



深圳成光兴光电技术股份有限公司

SHENZHEN CGX OPTOELECTRONIC TECHNOLOGY, INC.

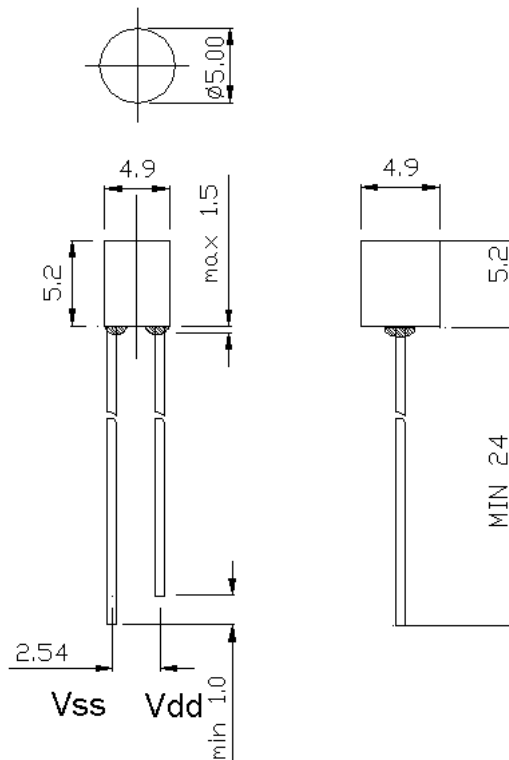
Visible Light Detector

PATR NO. : PDIC-5PLC103

FEATURES

- Near human eye photopic response
- High IR rejection – integrated optical filter
- Current output highly linear vs light level
- Temperature stable
- Integrated high gain photo-current amplifier
- Dark-current cancellation

Package Dimensions Unit : mm



DESCRIPTION

The PDIC-5PLC103 is a low cost visible light sensor, with a current output which is directly proportional to the light level. It has a built in optical filter to provide a response which is close to the human eye, or "photopic".

The output current can be converted to a voltage by connecting it in series with a resistor. The dynamic range is determined by the external resistor and power supply (10K and 5V gives a range of 0 to 160 Lux, but can be over 700 Lux with a 1K resistor). The internal dark current cancellation enables high accuracy over the full temperature range, even at low light levels. Lens color: Dark Green

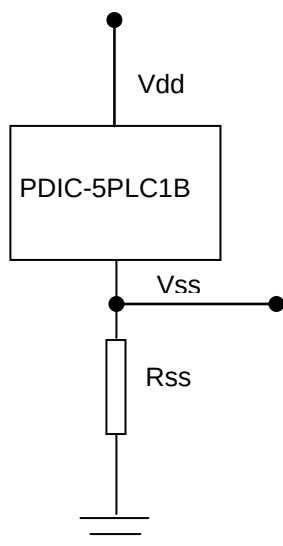
APPLICATIONS

- Dawn/dusk sensing
- Security lighting
- Display backlighting in laptops, mobile phones, LCD TVs
- Night-lights

Notes :

1. All dimensions are in millimeters
2. Protruded resin under flange is 0.5 mm max.
3. Tolerance is ± 0.25 mm unless otherwise noted.

BASIC APPLICATION



Pin Description

Vdd – Positive terminal
Vss – Negative terminal



ABSOLUTE MAXIMUM RATINGS

PARAMETER	RATING	UNITS
Supply input voltage	-0.3 to 10	V
Supply current	Internally limited	mA
Operating Temperature, T _O	-40°C to +85°C *	°C
Storage Temperature, T _S	-40°C to +100°C	°C

* The light sensor will function up to +105°C but dark current will have to be taken into consideration. Note that dark current doubles every 10°C.

ELECTRICAL SPECIFICATION

The following parameters apply over the operating temperature range -40°C to +85°C, and with R_{SS}=10 K-Ohms and V_{DD}= 5V, The table below shows the range of output currents, for specific lighting conditions

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Infra red response		900 nm	0	1	5	% of peak
Min. operating voltage	V _{DD} - V _{SS}	I _{SS} = 250μA I _{SS} = 100 μA		2.0 1.5	2.6 2	V V
Output Current	I _{SS}	10 Lux	5	12	20	μA
Dark Current (Note1)	I _{DRK}	0 Lux, T _a = 25°C 0 Lux, T _a = 85°C		5 150	30 500	nA nA
Gain Linearity			-10		10	%
Peak Spectral Response				520		nm
Sensitive Area				0.054		mm ²
Useable light range		R _{SS} & V _{DD} dependant	1	1000		Lux

(Note1) 光敏管不同于光敏电阻, 光敏管常温下暗电流很小, 但随着温度升高会升高, 大约每升高10摄氏度, 其暗电流会增大1倍, 故此, 使用光敏管时, 应注意高温时暗电流的变化来设计电路

Note that with a lower R_{SS} resistance, the linear light response range can be greatly increased.



Characteristic Curves

