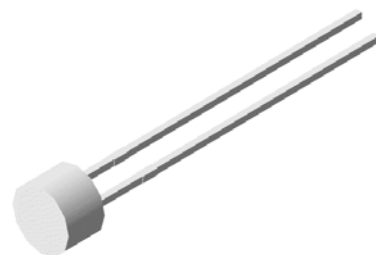


Ambient Light Sensor

OE TC289

Features

- Low sensitivity variation across various light sources
- Excellent linearity across wide illumination range
- High speed and high sensitive silicon NPN material
- High reliability standard LED package with water clear lens
- Wide supply voltage from 1.8V to 5.5V
- Remain within RoHS compliant



Applications

- Automatic residential and commercial management
- Automatic contrast enhancement for electronic signboard
- Detection of ambient light to central display backlighting



Absolute Maximum Rating $T(\text{amb}) = 25^{\circ}\text{C}$, unless otherwise specified

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	-0.7 ~ 6.5	V
Operating Temperature Range	T_{opr}	-40 ~ +85	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-40 to +100	$^{\circ}\text{C}$
Soldering Temperature	T_{sol}	260+/-10	$^{\circ}\text{C}$

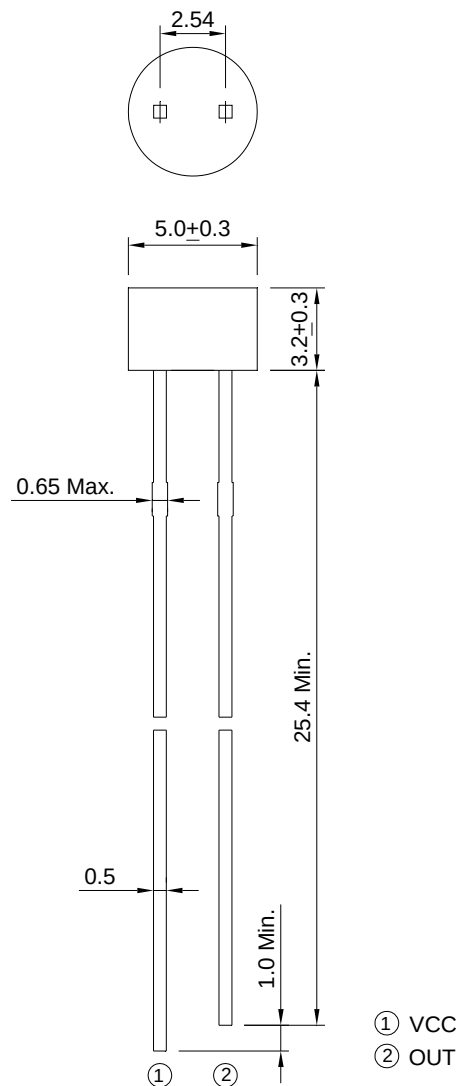
Note: Please take note the Absolute Maximum Rating values. Any operation beyond the specified ratings in this table will result degradation of LED life-span and may cause LED to fail.

Recommended Operating Conditions

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	1.8 ~ 5.5	V
Operating Temperature	T_{opr}	-40 ~ +85	$^{\circ}\text{C}$

Package Dimension:

unit: mm



Notes:

1. All dimensions are millimeters.
2. Tolerance is ± 0.2 mm unless otherwise specified.
3. Specifications are subject to change without notice.

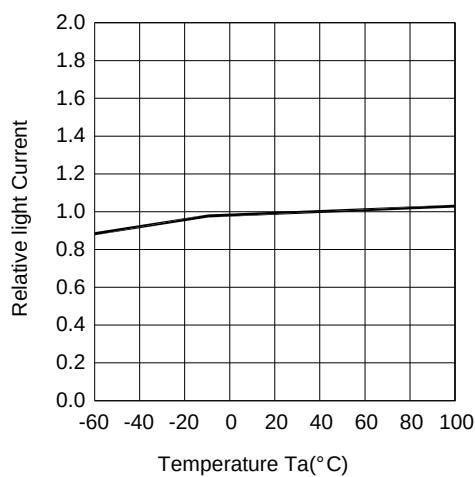
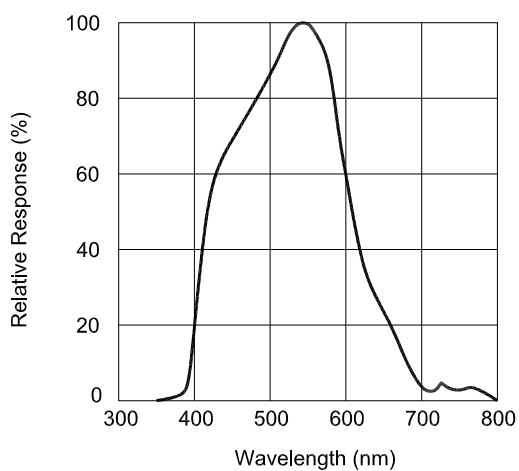
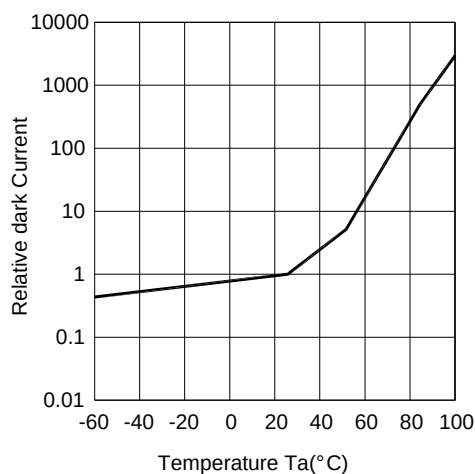
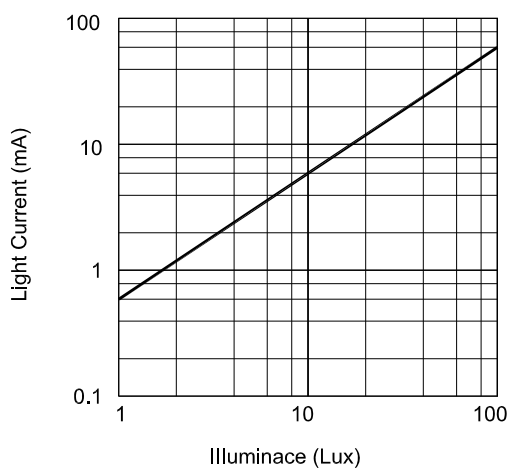
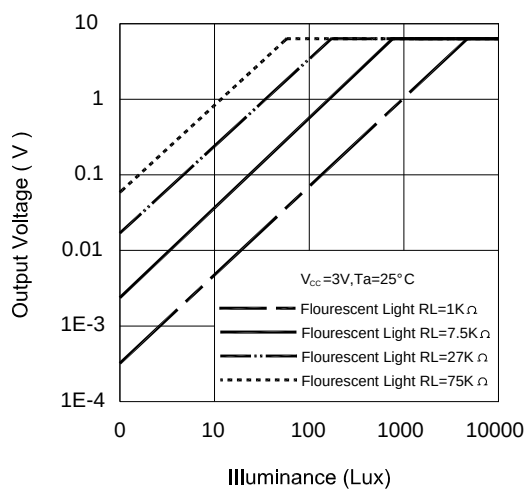
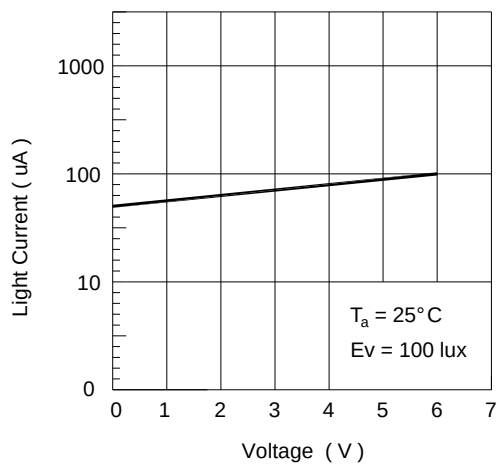
Optical Characteristics Tamb=25°C, unless otherwise specified

Parameter	Test condition	Symbol	Min.	Typ.	Max.	Unit
Dark Current	$V_{CC} = 3V$ $E_v = 0Lx$	I_{CEO}	--	0.05	0.1	μA
Photocurrent Ratio	$V_{CE} = 3V$ $E_v = 100Lx$	I_{PH4}/I_{PH3}	---	1.0	--	--
Peak Sensitivity Wavelength	---	λ_p	---	570	--	nm
Light Current	$V_{CC} = 3V$ $E_v = 10Lx$ (note1)	I_{PH1}	--	7	---	μA
	$V_{CE} = 3V$ $E_v = 100Lx$ (note1)	I_{PH2}	--	70	---	μA
	$V_{CE} = 3V$ $E_v = 100Lx$ (note1)	I_{PH3}	--	700	---	μA
	$V_{CC} = 3V$ $E_v = 10Lx$ (note2)	I_{PH4}	--	700	---	μA
Rise Time	$V_{CC}=3V$ $R_L=27K\Omega$	T_r	--	0.36	--	ms
Rise Time	$V_{CC}=3V$ $R_L=27K\Omega$	T_r	--	1.13	--	ms
Angle of Half Sensitivity	$I_F=20mA$	$2\theta_{1/2}$	--	140	--	Deg

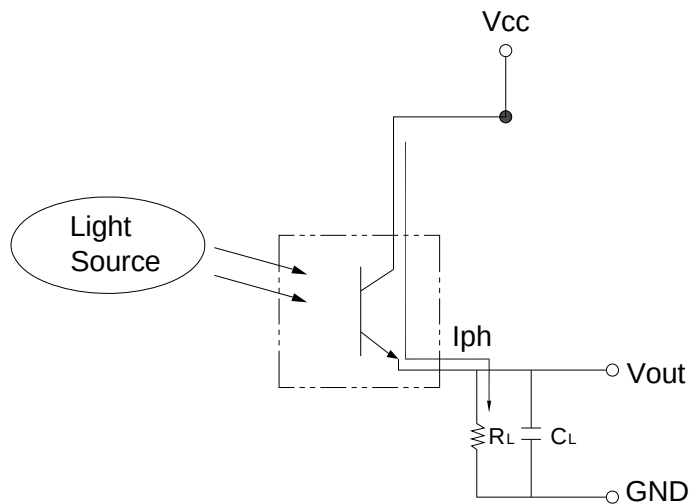
Notes:

- (1) White Fluorescent light is used as light source (Color Temperature @ 6500k)
- (2) Illuminati by CIE stand illuminant-A / 2856k.

Typical Electro-optical Characteristics Curves



Converting Photocurrent to Voltage



Note:

1. The out put voltage is the product of photo current(I_{PH}) and loading resistor(R_L)
2. A right loading resistor shall be chosen to meet the requirement of maximum ambient light.