

AT403-ALS-01

DATA SHEET

REV. : 1.0

DATE : 20-Apr.-2007

Ambient Light Sensor, RoHS Compliant, Released for Lead

(Pb)-free Solder Process

DESCRIPTIONS:

AT403-ALS-01 is a high-sensitivity and light-to-voltage converter. The device plays a key role in power saving by controlling LCD display intensity and keypad backlighting of mobile devices and industrial ON/OFF-light operation. It is sensitive to visible light much like the human eyes and has peak sensitivity in 580nm.

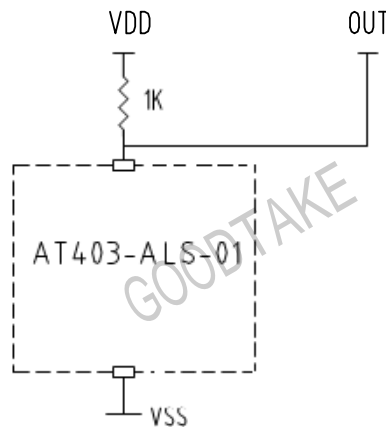
FEATURES:

- high sensitivity in visible area, but little sensitivity in others(UV and IR).
- Adapted to human eyes responsivity
- Lead free product, in compliance with ROHS.
- Top view package.

APPLICATIONS:

- Automotive applications.
- Sunlight sensor/head lamp control.
- Control of display backlighting.
- Mobile devices.

FUNCTIONAL BLOCK DIAGRAM:



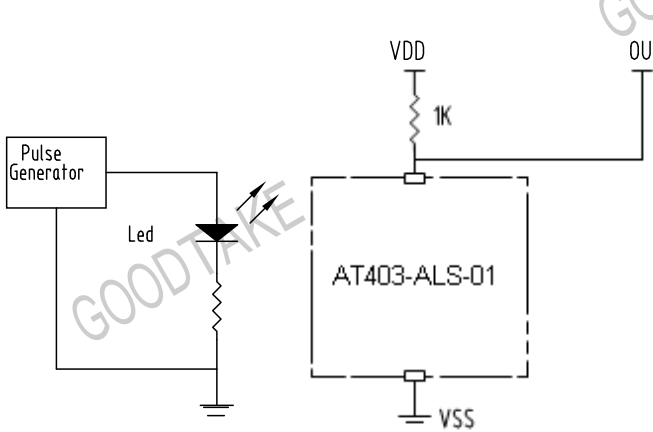
■ ABSOLUTE MAXIMUM RATINGS AT Ta=25°C

Parameter	Symbol	Ratings	Unit
Input Voltage	V	5	V
Operating Temperature	Topr	-40~+100	°C
Storage Temperature	Tstg	-40~+100	°C
Soldering temperature	Tsol	260	°C

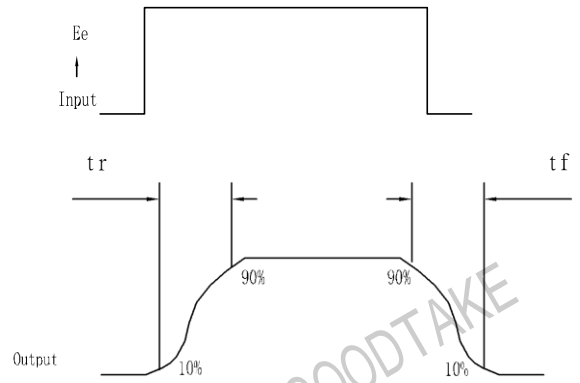
■ ELECTRICAL CHARACTERISTICS (V_{DD}=5V, Ta=25°C if not mentioned)

Item	Symbol	Min.	Type	Max.	Unit	Test Condition
Dark Current	I _{DD}			0.1	μA	V _{CE} =10V, E _e =0lux
Max Output Voltage Swing	V _{OM}	4.7	4.9		V	V _{DD} =5V
Photo Current	I _p	2			mA	V _{DD} =5V, E _e =1000lx
Peak Wavelength Sensitivity	λ _{ps}		580		nm	
Output Voltage	V _{OUT}		3.72		V	V _{DD} =5V, E _e =1000lx, R _L =1000

■ Parameter Measurement Information :

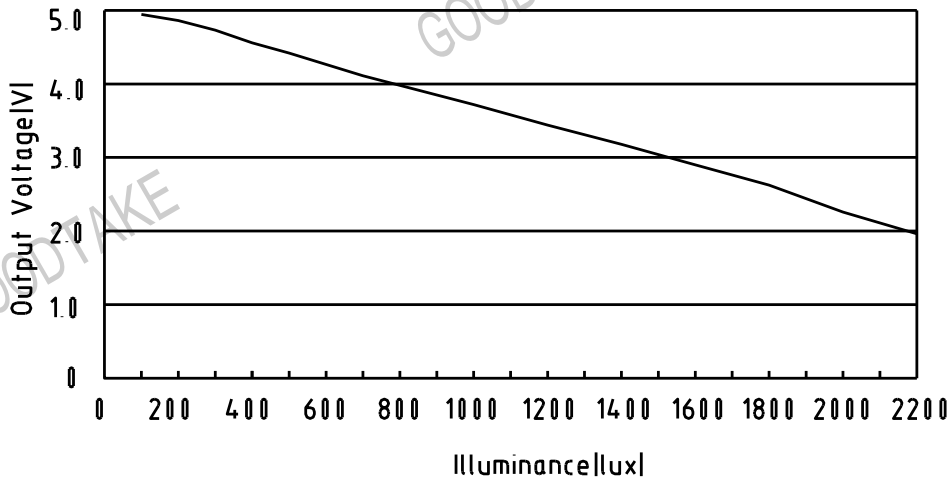


Test Circuit

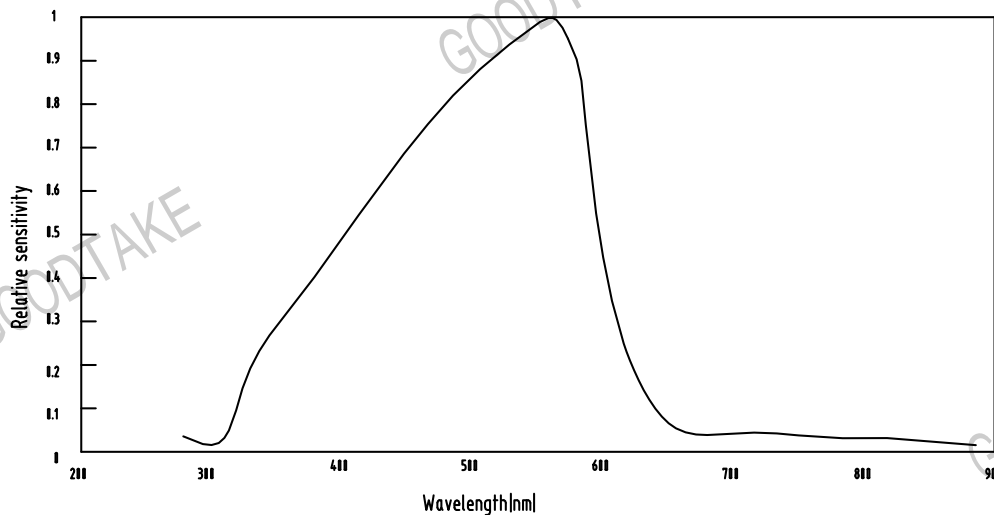


Voltage Waveform

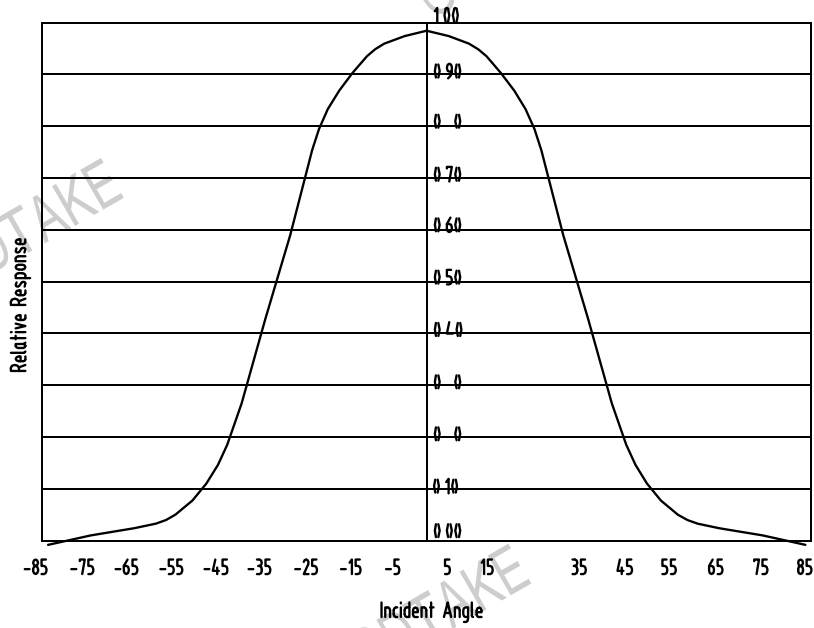
■ Output voltage v.s. illuminance $E_v(\text{lux})$:



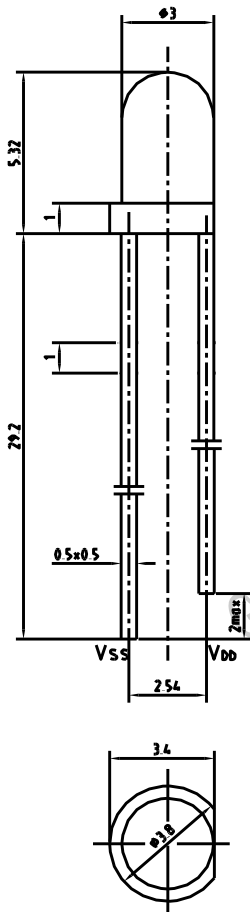
■ Spectral Responsivity :



■ Relative Response VS. Incident Angle



■ PACKAGE DESCRIPTIONS



NOTE : 1. All dimensions are in millimeter, tolerance is ± 0.5 unless otherwise noted.
 2. Epoxy meniscus extends ≤ 1 mm down to the lead is allowed.