



Type: LLI-2203

Optocoupler

A linear optocoupler is a photoelectric device that controls resistance changes through changes in input current. It is a linear optoelectronic coupling device made from Silicon photosensitive element and LED semiconductors, which have undergone strict selection, aging, and testing. This product belongs to the current input control type and the pure resistance non-polar output control type.

● Performance and Features

- Output varies linearly with input current
- Temperature stability
- Low dark current, high sensitivity
- Compliant with RoHS directives/lead-free/cadmium free
- Input and output isolation coupling

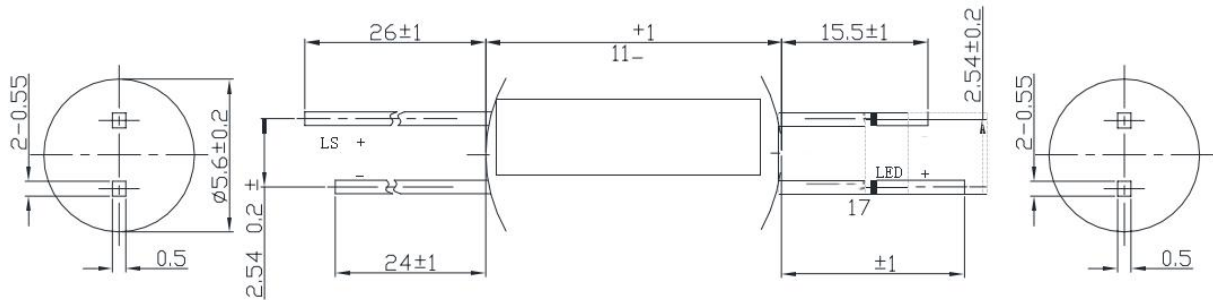
● Application

- Audio amplifier protection and control
- Volume control
- Isolation coupling
- Linear stepless speed regulation of motors
- Linear and stepless adjustment of light brightness
- Communication transmission
- Circuit automatic control

● Models and specification

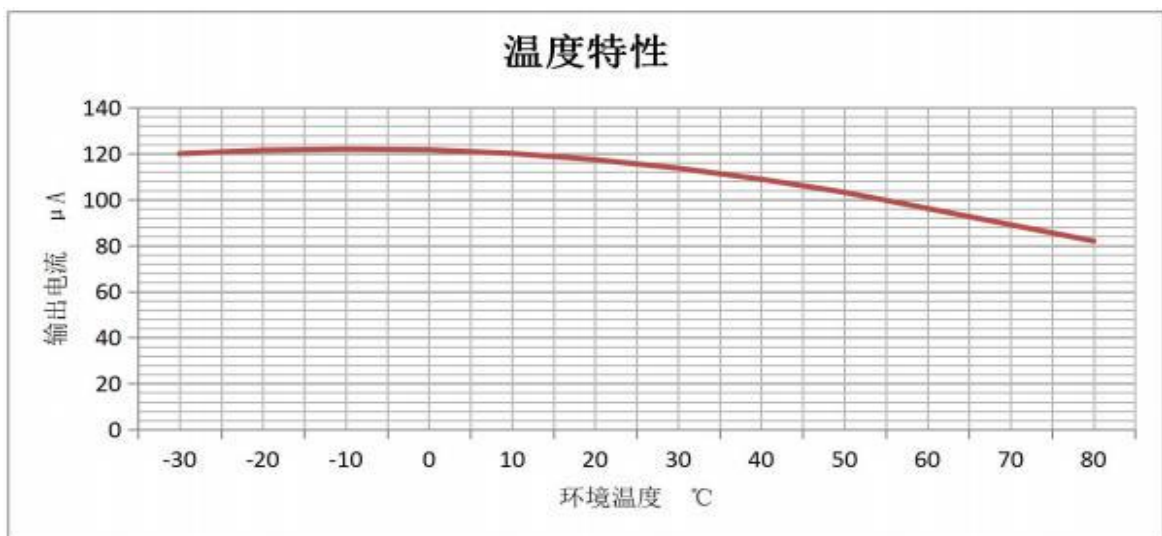
Model	LLI-2203
Package	Dual inline
Testing environment	@25°C, RH48%-52%
Forward voltage (input diode) Vf	1.8—2.2 Vdc
Forward current (input diode) IF	0-10mA
Reverse leakage current (input diode) Ir	Vr=5Vdc, max10μA
Reverse voltage (input diode) VR	5Vdc
DC coupling capacitor	< 5pF
Output terminal voltage	5Vdc, max30Vdc
Input trigger current	0.1mA
Typical value	Input 10mA current, output current 90-140 μ A
Responsiveness	< 2.5ms
Operating Frequency	< 300KHz
Maximum power consumption PD	100mW
Working temperature Topr	-25—+70°C
Storage temperature Tstg	-30—+80°C
Anti static level ESD	2000V

● Dimensional Drawing

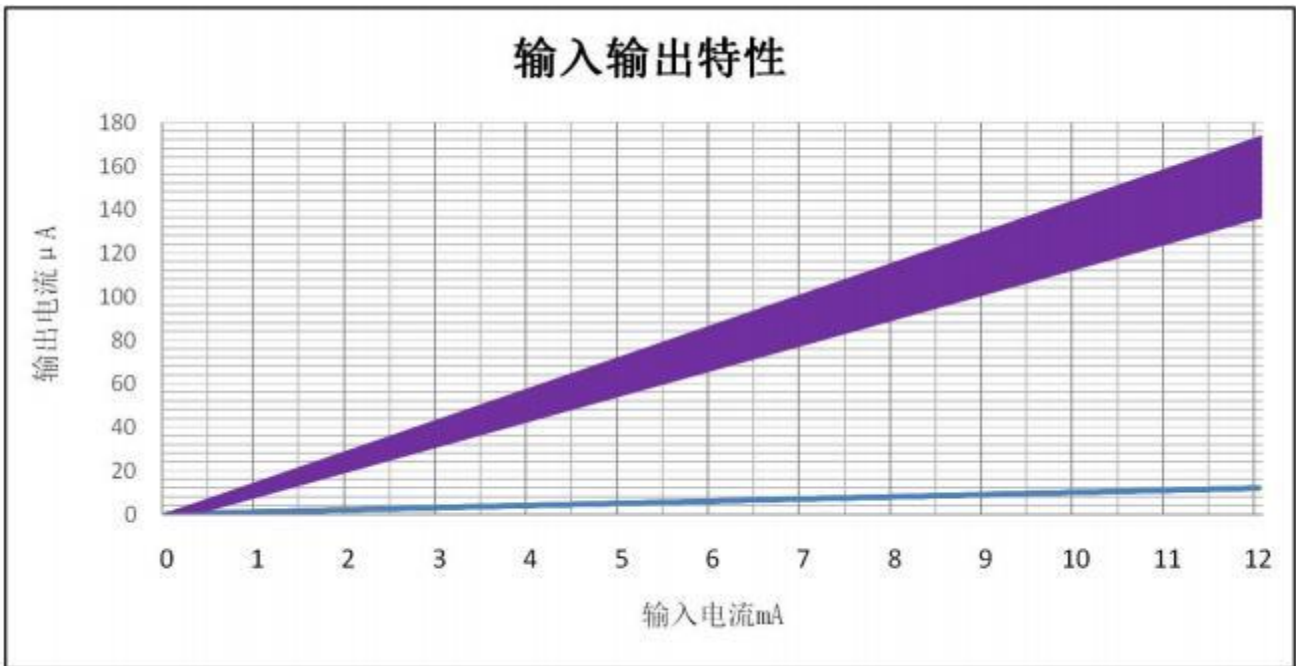


Unit:mm

● Characteristic Curve



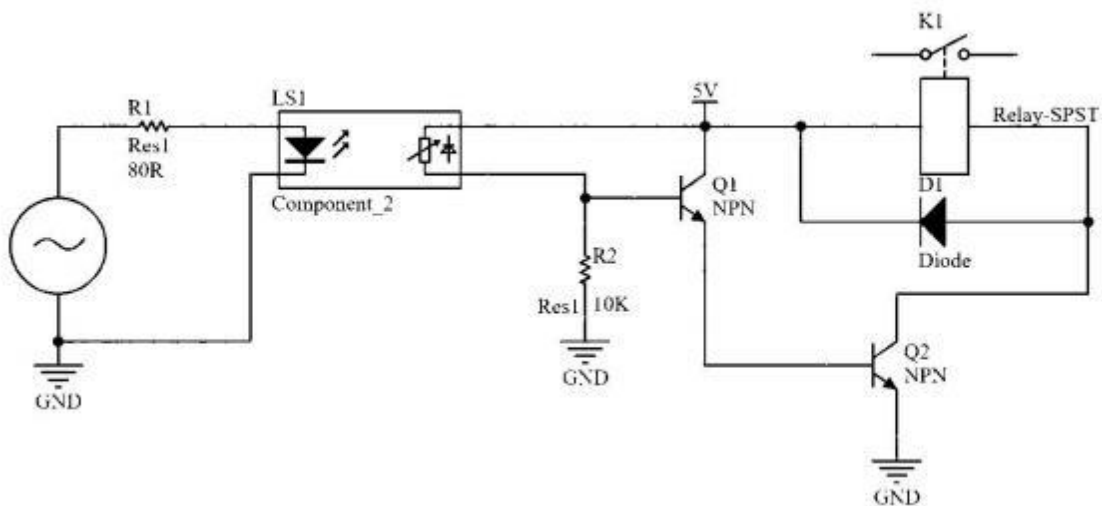
When the ambient temperature is 25 $^{\circ}C$, the input terminal is set to measure the input 10mA current



Measure when the ambient temperature is 25 °C and the relative humidity is 48% -52%

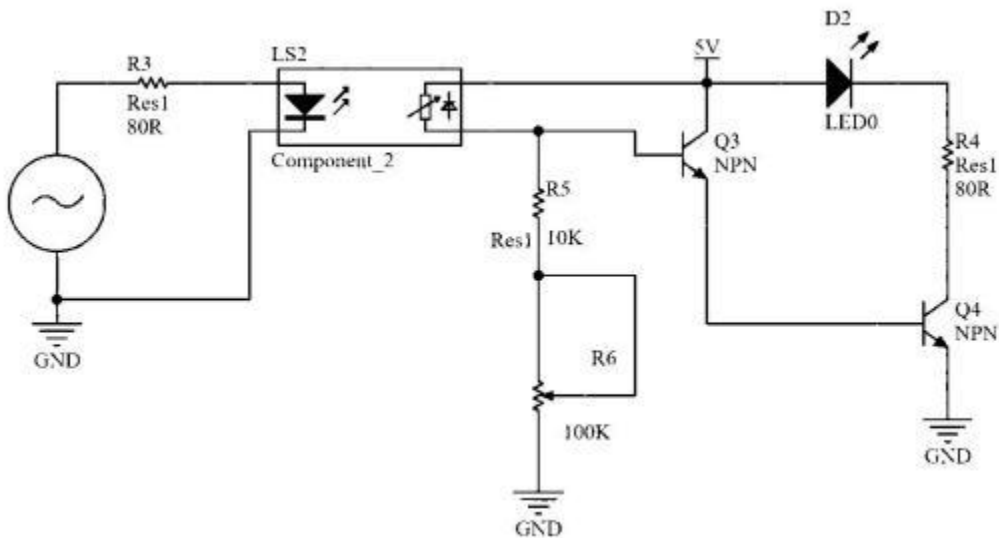
● Reference Circuit

Typical relay control circuit



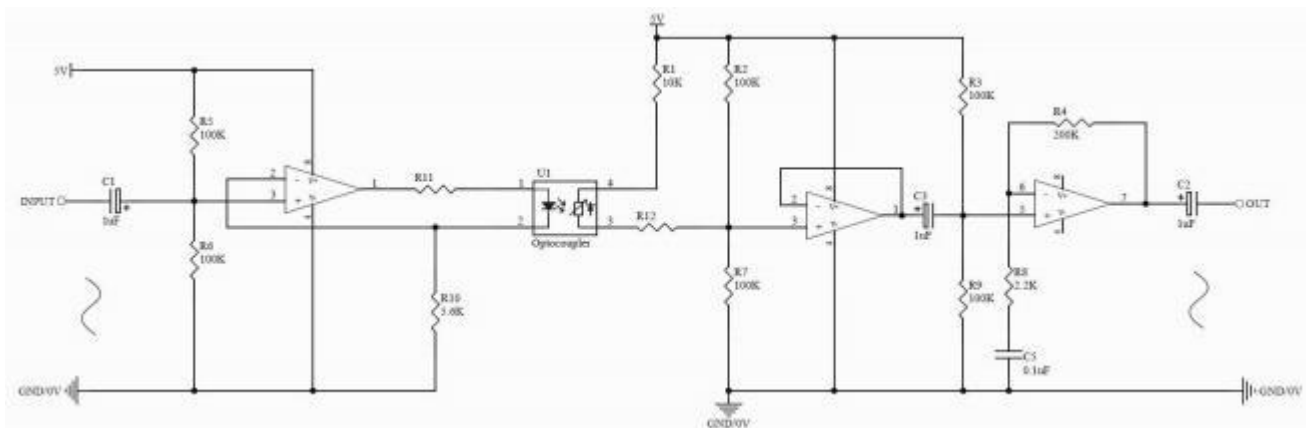
When the input current changes, the output current follows a linear change, driving the current of the two-stage transistor amplification circuit to change. When it reaches a certain value, the relay starts.

Typical linear dimming circuit



When the input current changes, the output current follows a linear change, driving the current of the two-stage transistor amplification circuit. The LED brightness driven by the transistor changes linearly. Adjusting the 100k adjustable resistor can change the driving LED current.

Typical audio application circuit



In audio systems, coupling between input voltage or current circuits to another level typically requires isolation. Optocoupler isolation has the characteristics of unidirectional signal transmission, complete electrical isolation between input and output, no impact on input at the output end, anti-interference, stable operation, and long contactless service life. Due to its superior linear output, this product has better performance in audio systems and can replace Cd output type optocouplers.

When the input signal is amplified and driven by a R11 current limiting resistor to light up the LED at the input end of the optocoupler, it is received by a photoelectric tube and converted into an electrical signal with the same changes and no distortion as the input. After passing through R12 to the subsequent amplification circuit, an amplification signal is output, achieving complete isolation between circuits, eliminating possible interference, and protecting the circuit.

● Usage Precautions and Standard Packaging

- This product is an electrostatic sensitive device. All static electricity and surges can damage the product. It is required to wear an anti-static wristband when using it. All devices, equipment, machines, tables, and floors must be grounded to prevent static electricity.
- It should be noted that the recommended pin welding should be carried out at a distance of $\geq 4\text{mm}$ from the bottom of the pin, ensuring a welding temperature of $260\text{ }^{\circ}\text{C} - 280\text{ }^{\circ}\text{C}$. The welding should be completed within 3 seconds and should not exceed the rated range. During or after the welding process, external forces should be avoided from acting on the pins, and repeated welding is not allowed.
- This product complies with the EU RoHS environmental directive.
- Packaging 300 pieces per bag.

Note: Senba Sensing reserves the right to make changes, corrections, enhancements, modifications, and improvements to the product specifications at any time without prior notice.