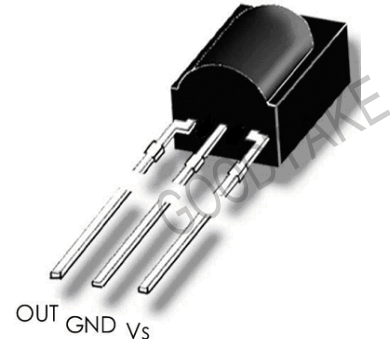


Photo Module for PCM Remote Control Systems

Description

The HM238 is miniaturized receiver for infrared remote control systems. PIN diode and preamplifier are assembled on lead frame, the epoxy package is designed as IR filter.

The demodulated output signal can directly be decoded by a microprocessor. The main benefit is the reliable function even in disturbed ambient and the protection against uncontrolled output pulses.



Features

- Photo detector and Preamplifier in one package
- Internal filter for PCM frequency
- TTL and CMOS compatibility
- Output active low
- Low power consumption 0.35mA@3V
- Suitable burst length ≥ 10 cycles/burst
- Lead-Free component in accordance with RoHS directives

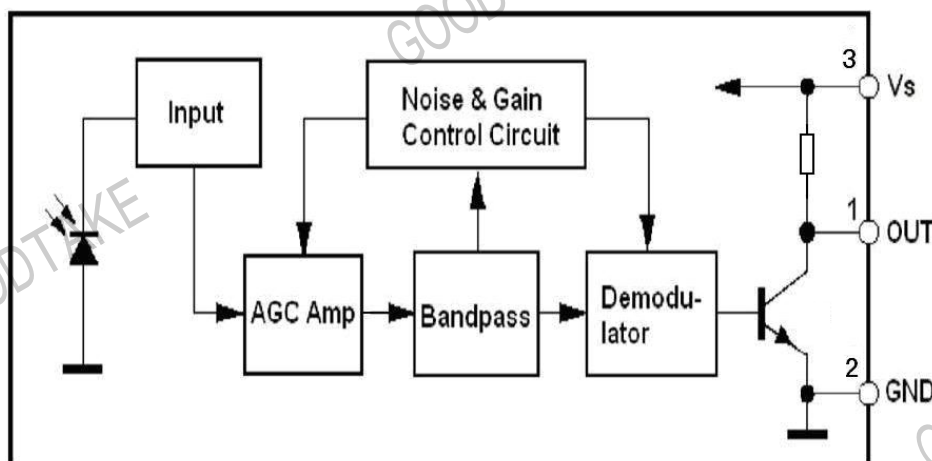
Special Features

- Enhanced immunity against all kinds of disturbance light
- No occurrence of disturbance pulses at the output

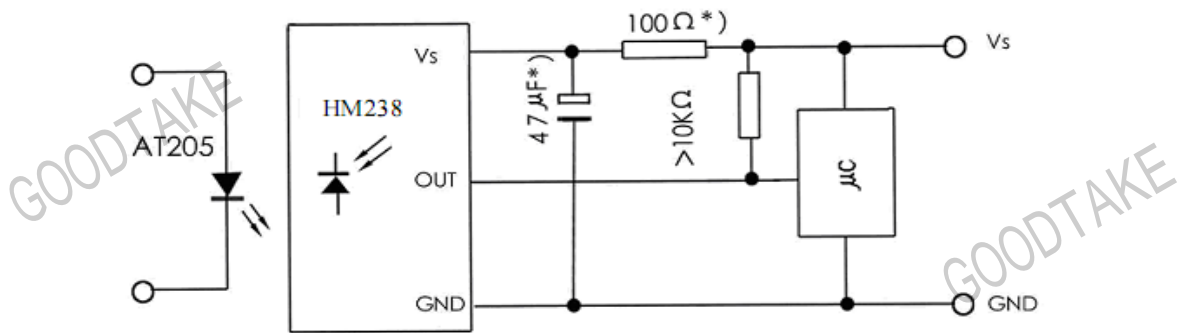
Applications

TV, VTR, Acoustic Devices, Air Conditioner, Car Stereo Units, Computers, Interior controlling appliances, and all appliances that require remote controlling

Block Diagram



Application Circuit



*) recommended to suppress power supply disturbance

Absolute Maximum Ratings

Tamb = 25 °C

| Parameter | Test Conditions | Symbol | Value | Unit |
|-----------------------------|-----------------|--------|------------|------|
| Supply Voltage | (Pin 3) | Vs | 6.0 | V |
| Supply Current | (Pin 3) | Is | 5 | mA |
| Output Voltage | (Pin 1) | Vo | 6.0 | V |
| Storage Temperature Range | | Tstg | -30...+105 | °C |
| Operating Temperature Range | | Tamb | -25...+85 | °C |
| Power Consumption | (Tamb ≅ 85 °C) | ptot | 10 | mW |
| Soldering Temperature | t ≅ 5s | Tsd | 260 ± 5 | °C |

Basic Characteristics

Tamb = 25 °C

| Parameter | Test Conditions | Symbol | Min | Typ | Max | Unit |
|----------------------------|---|--------|------|------|-----|------|
| Supply Current (Pin3) | Vs = 5V, Ev = 0 | IsD | 0.25 | 0.5 | 0.9 | mA |
| Supply Voltage (Pin3) | | Vs | 2.5 | | 5.5 | V |
| Transmission Distance | IR diode HK205, If = 400 mA | d | 20 | | | m |
| Output Voltage High (Pin1) | Vs = 5V Cycle 1.2mS , 50% duty | VOH | 45 | | | V |
| Output Voltage Low (Pin1) | | VOL | | | 250 | mV |
| Level Output Pulse Width | Burst Wave= 600µs , Cycle 1.2mS , 50% duty | TWH | 400 | | 800 | µs |
| Level Output Pulse Width | | TWL | 400 | | 800 | µs |
| Carrier frequency | | fo | | 37.9 | | kHz |
| Peak Wavelength | | λ | | 940 | | nm |
| Directivity | Angle of half transmission distance | φ1/2 | | ±45 | | deg |

Package Outline

Dimensions in mm: tolerance ± 0.3 mm

