Photo Module for PCM Remote Control Systems

Description

The HM238D is a miniaturized receiver for use in Infrared carrier frequency PCM remote control systems. A high quality photo diode and a low noise preamplifier are assembled on lead frame, and 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
- Suitable burst length • 10 cycles/burst
- Low current consumption 0.35mA 3V
- Operates down to 2.2 Volt

Special Features

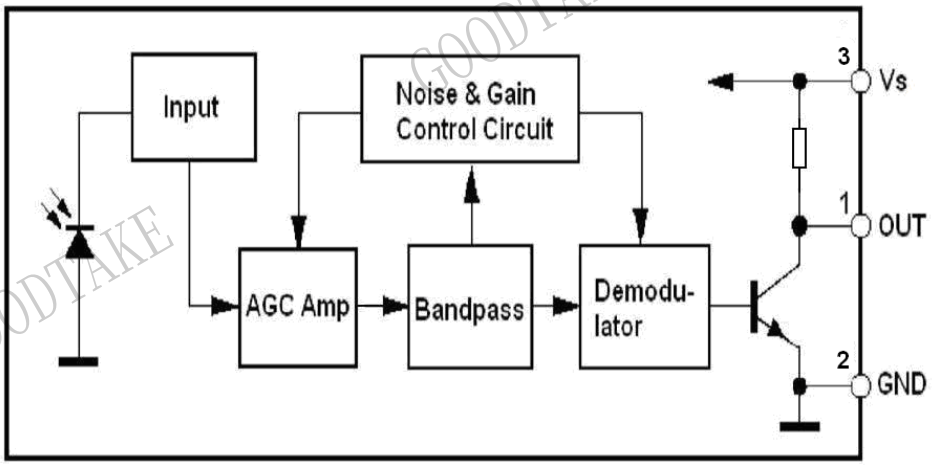
- Enhanced immunity against all kinds of disturbance light
- No occurrence of disturbance pulses at the output

- Lead-Free component in accordance with RoHS directives

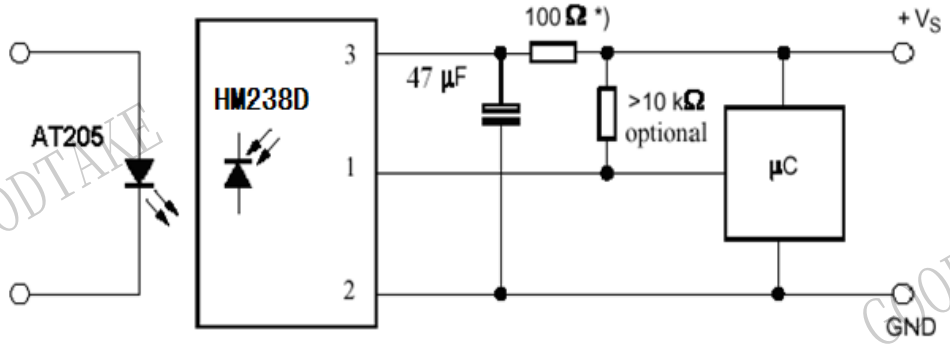
Applications

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 ℃

Parameter	Test Conditions	Symbol	Value	Unit
Supply Voltage	(Vs)	Vs	0---6.0	V
Supply Current	(Vs)	Is	5	mA
Output Voltage	(OUT)	Vo	0---6.0	V
Output Current	(OUT)	Io	2.5	mA
Storage Temperature Range		Tstg	-30---+85	℃
Operating Temperature Range		Tamb	-25---+85	℃
Power Consumption	(Tamb ≤85℃)	Ptot	10	mW
Soldering Temperature	t≤5s 1mm from case	Tsd	260	℃

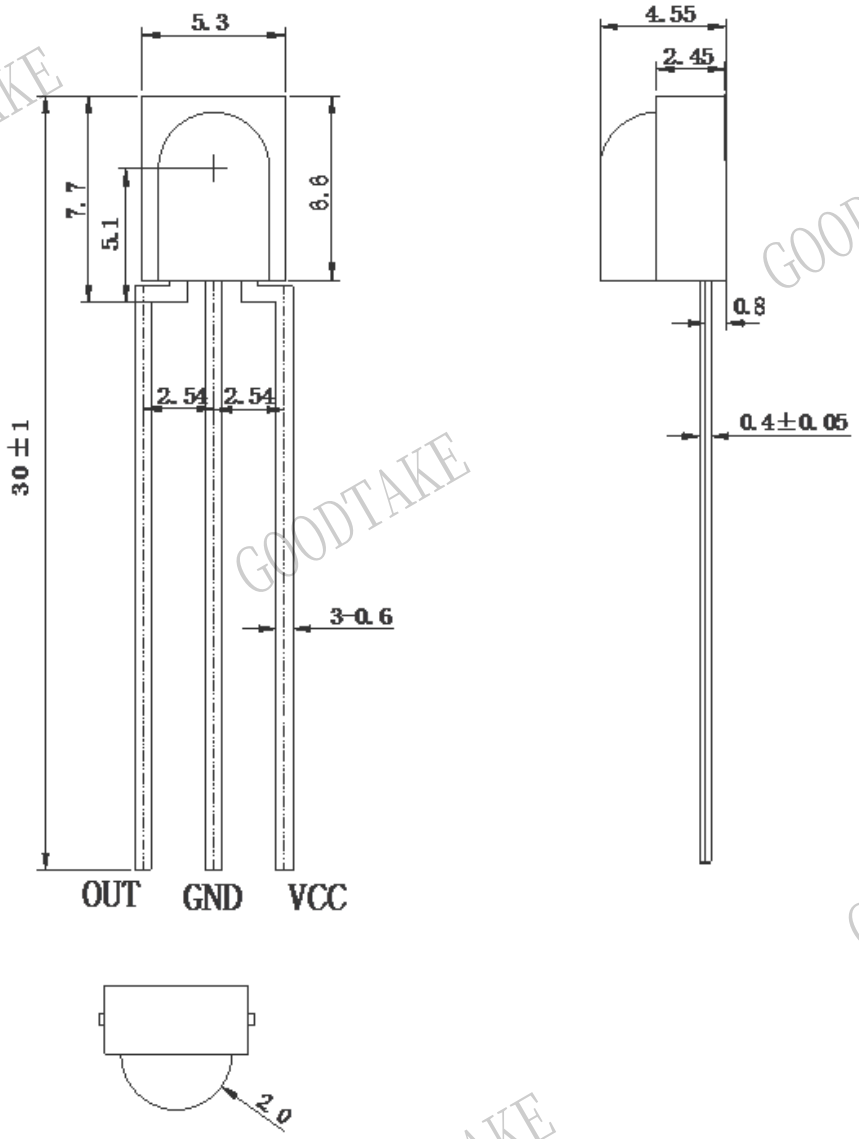
Basic Characteristics

Tamb = 25 ℃

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Supply Voltage (Vs)	Recommended operating	Vs	2.5		5.5	V
Supply Current (Vs)	Vs = 5V	Is	0.25	0.5	0.9	mA
Transmission Distance	IR diode AT205,IF=0.4A	d	20			m
Output Voltage High (Pin1)	Vs = 5V Cycle 1.2mS , 50% duty	VOSH	4.5			V
Output Voltage Low (Pin1)		VOSL			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 1/2 transmission distance	θ 1/2		±45		deg

Package Outline

Dimensions in mm: tolerance±0.3mm



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