

# Photo Module for PCM Remote Control Systems

## Description

The HM338D is miniaturized receiver for use infrared carrier frequency PCM remote control systems. A photo PIN diode and a low noise 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 current dissipation
- Suitable burst length • 10 cycles/burst
- Lead-Free component in accordance with RoHS directives

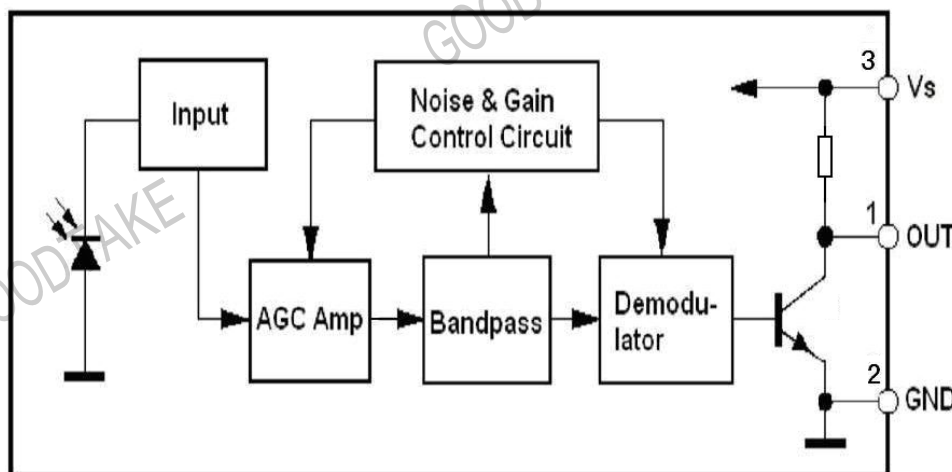
## Special Features

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

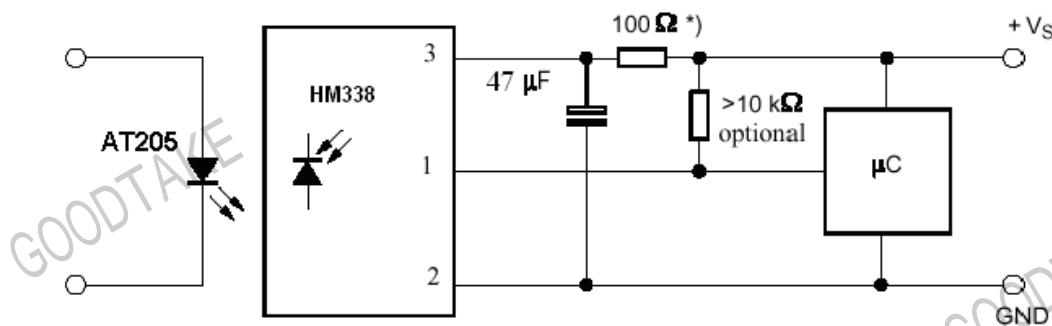
## Applications

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	50	mW
Soldering Temperature	t ≤ 5s, 1 mm from case	Tsd	260	°C

Basic Characteristics

Tamb = 25 °C

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Supply Current (Pin3)	Vs = 5V, Ev = 0	ISD	0.7	1.1	2	mA
Supply Voltage (Pin3)		Vs	2.7		5.5	V
Transmission Distance	IR diode AT205, If = 400 mA	d	20			m
Output Voltage High (Pin1)	Vs = 5V	VOSH	45			V
Output Voltage Low (Pin1)	Cycle 1.2mS , 50% duty	VOSL			250	mV
Level Output Pulse Width	Burst Wave= 600µs ,	TWH	400		800	µs
Level Output Pulse Width	Cycle 1.2mS , 50% duty	TWL	400		800	µs
Carrier frequency		fo		37.9		kHz
Peak Wavelength		•		940		nm
Directivity	Angle of half transmission distance	• 1/2		±45		deg

## Package Outline

Dimensions in mm: tolerance $\pm 0.3$ mm

