

IR Receiver Module for Remote Control Systems

General Description

The HM 338 is a miniaturized receiver for use in Infrared carrier frequency PCM remote control systems. 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

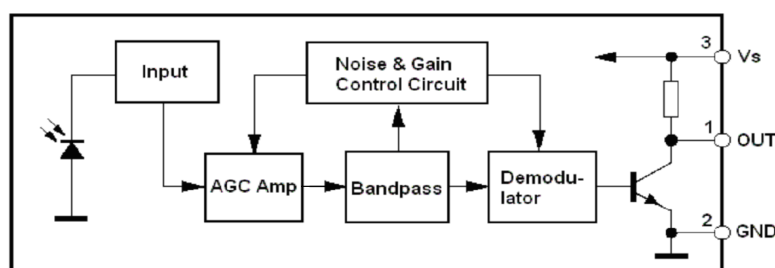
- Small size package 6 x 7 mm
- TTL & CMOS compatibility
- Output active low
- Enhanced immunity against disturbance light
- Suitable burst length >10 cycles per burst
- Low supply voltage 2.7 ~ 5.5 Volt



Applications

- DVD & DVB receivers
- AV equipments
- Room air condition IR remote control systems

Block Diagram



Absolute Maximum Ratings

$T_{amb} = 25^{\circ}\text{C}$

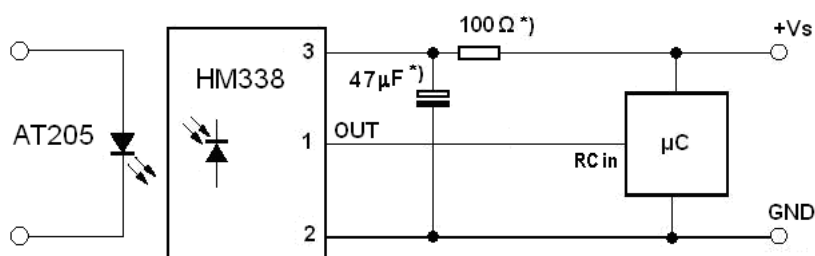
Parameter	Test Conditions	Symbol	Value	Unit
Supply Voltage	(Pin 3)	V_s	6.0	V
Supply Current	(Pin 3)	I_s	5	mA
Output Voltage	(Pin 1)	V_o	6.0	V
Operating Temperature range		T_{amb}	-10...+75	$^{\circ}\text{C}$
Storage Temperature range		T_{stg}	-25...+85	$^{\circ}\text{C}$
Power Consumption	$T_{case} \leq 85^{\circ}\text{C}$	P_{tot}	50	mW
Soldering Temperature	$t \leq 5 \text{ sec.}$	T_{sod}	260	$^{\circ}\text{C}$

Electrical & Optical Characteristics

$T_{amb} = 25^{\circ}\text{C}$ $V_s = 3.0\text{V}$ unless otherwise stated

Parameter	Test Condition	Symbol	Min	Typ	Max	Unit
Supply current	$V_s = 5\text{V}$, $E_v = 0$	I_s		0.9	2.0	mA
Operating Voltage	(Pin 3)	V_s	2.7		5.5	V
Transmission distance	IR diode AT205, $I_F = 400\text{mA}$		12	20		m
Output Voltage Low	Active low, (Pin 1)	V_{OL}			0.4	V
Peak Wavelength	Internal IR filter	λ		940		ηM
Carrier frequency	Internal BPF	f_c		38		KHz
Output pulse width	Input burst = $600\mu\text{S}$, Cycle 1.2mS	T_p	400		800	μS
Directivity	Angle of 1/2 transmission distance			± 45		deg

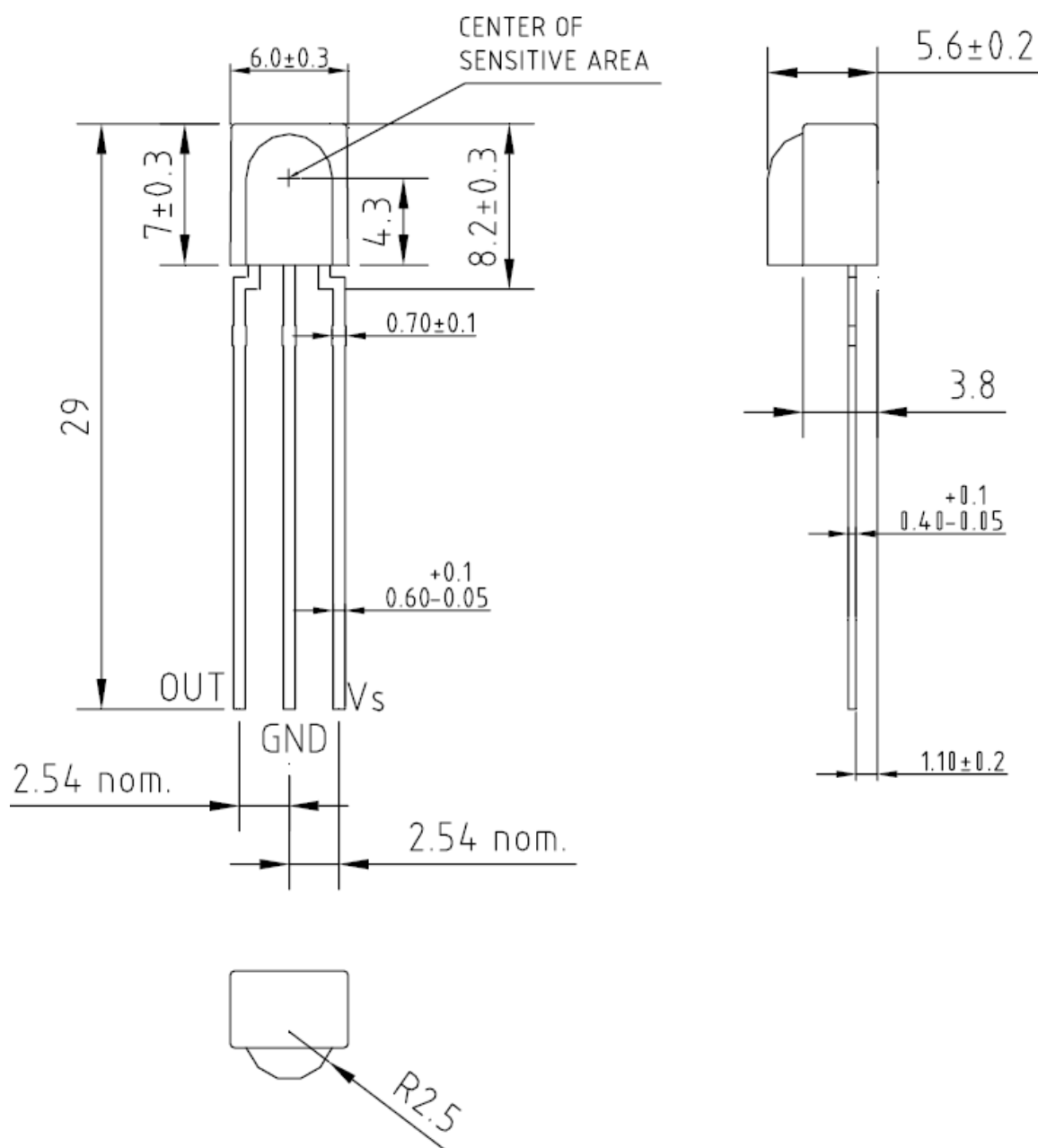
Application Circuit



*) RC filter network recommended to suppress power supply disturbances

Package

Dimensions in mm



Lead-free product in accordance with RoHS directives.