Description

The **HM638-14** 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
- Wide supply voltage & low current dissipation
- Suitable burst length ≥10 cycles/burst

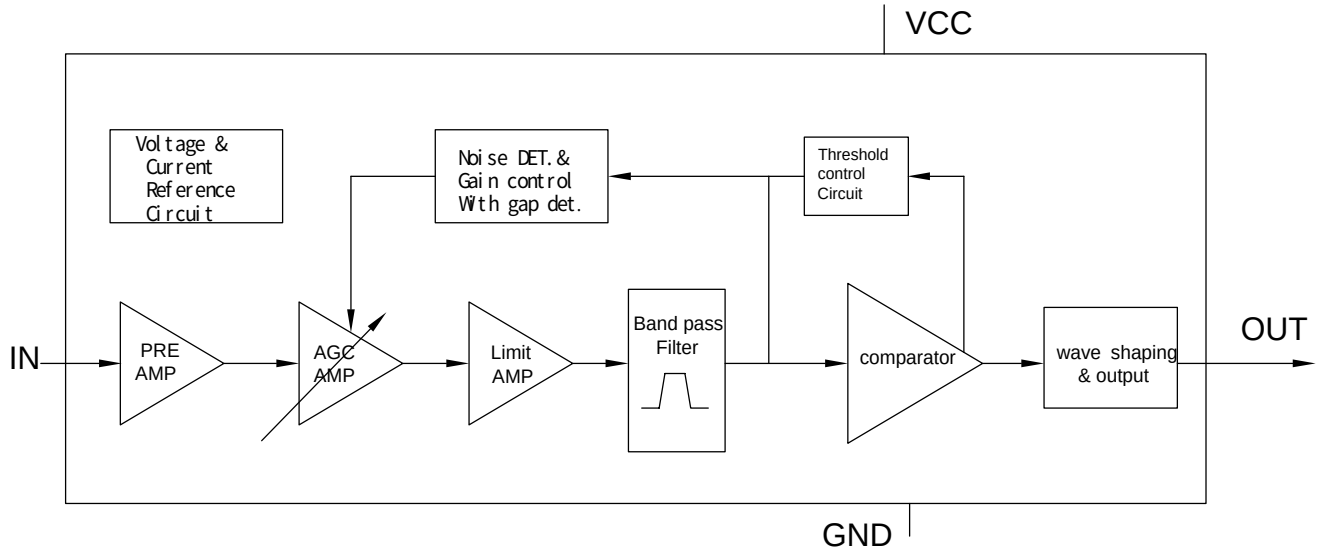
Special Features

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

Applications

- Audio video applications
- Home appliances
- Toy applications
- Remote control equipment

Block Diagram



Absolute Maximum Ratings

Tamb = 25 ℃

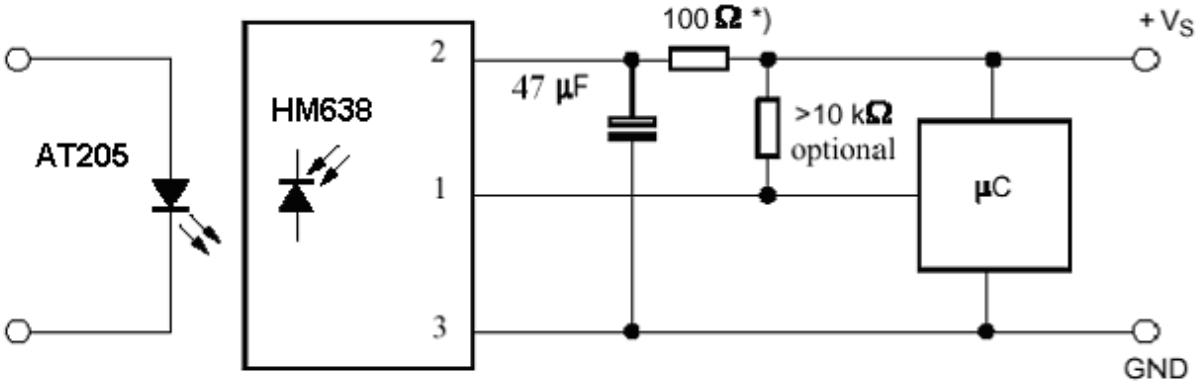
Parameter	Test Conditions	Symbol	Value	Unit
Supply Voltage	(Pin 3)	Vs	-0.3…7.5	V
Supply Current	(Pin 3)	Is	5	mA
Output Voltage	(Pin 1)	Vo	-0.3…7.5	V
Output Current	(Pin 1)	Io	5	mA
Junction Temperature		Tj	100	℃
Storage Temperature Range		Tstg	-25…+85	℃
Operating Temperature Range		Tamb	-25…+85	℃
Power Consumption	(Tamb ≦ 85 ℃)	ptot	50	mW
Soldering Temperature	t≦ 5s	Tsd	260	℃

Basic Characteristics

Tamb = 25 ℃

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Supply Current (Pin3)	Vs = 5V, Ev = 0	I_{SD}		1.3	2.5	mA
Supply Voltage (Pin3)		Vs	4.5		5.5	V
Transmission Distance	IR diode AT205, I_F = 400 mA	d		25		m
Output Voltage Low (Pin1)	I_{OSL} = 2 mA, f = fo, tp/T = 0.4	V_{OSL}			250	mV
Carrier frequency		fo		38		kHz
Peak Wavelength		λ		940		nm
Directivity	Angle of half transmission distance	$\varphi_{1/2}$		±45		deg

Application Circuit



*) recommended to suppress power supply disturbance

Dimensions in mm: tolerance±0.3mm