

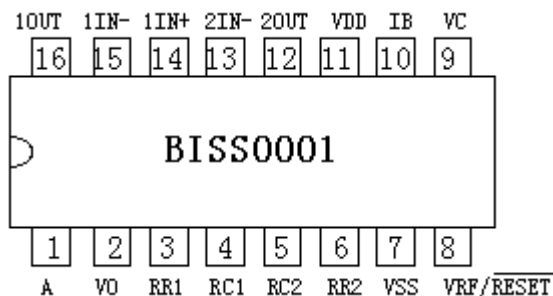
# BISS0001

## Micro Power PIR Motion Detector IC

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### Features

- Low power CMOS technology (ideal for battery operated PIR devices)
- CMOS high input impedance operational amplifiers
- Bi-directional level detector / Excellent noise immunity
- Built-in Power up disable & output pulse control logic
- Dual mode : retriggerable & non-retriggerable



### Pin description

Pin Number	Symbol	Description
1	<b>A</b>	Retriggerable & non-retriggerable mode select (A=1 : re-triggerable)
2	<b>VO</b>	Detector output pin (active high)
3	<b>RR1</b>	Output pulse width control (Tx) * See definition below
4	<b>RC1</b>	Output pulse width control (Tx) *
5	<b>RC2</b>	Trigger inhibit control (Ti) *
6	<b>RR2</b>	Trigger inhibit control (Ti) *
7	<b>Vss</b>	Ground
8	<b>VRF</b>	RESET & voltage reference input (Normally high. Low=reset)
9	<b>VC</b>	Trigger disable input (VC >0.2Vdd=enable; Vc<0.2Vdd =disabled)
10	<b>IB</b>	Op-amp input bias current setting
11	<b>Vdd</b>	Supply voltage
12	<b>2OUT</b>	2 <sup>nd</sup> stage Op-amp output
13	<b>2IN-</b>	2 <sup>nd</sup> stage Op-amp inverting input
14	<b>1IN+</b>	1 st stage Op-amp non-inverting input
15	<b>1IN-</b>	1 st stage Op-amp inverting input
16	<b>1OUT</b>	1 st stage Op-amp output

\*

Tx = The time duration during which the output pin (Vo) remains high after triggering.

Ti = During this time period, triggering is inhibited. See timing charts for details.

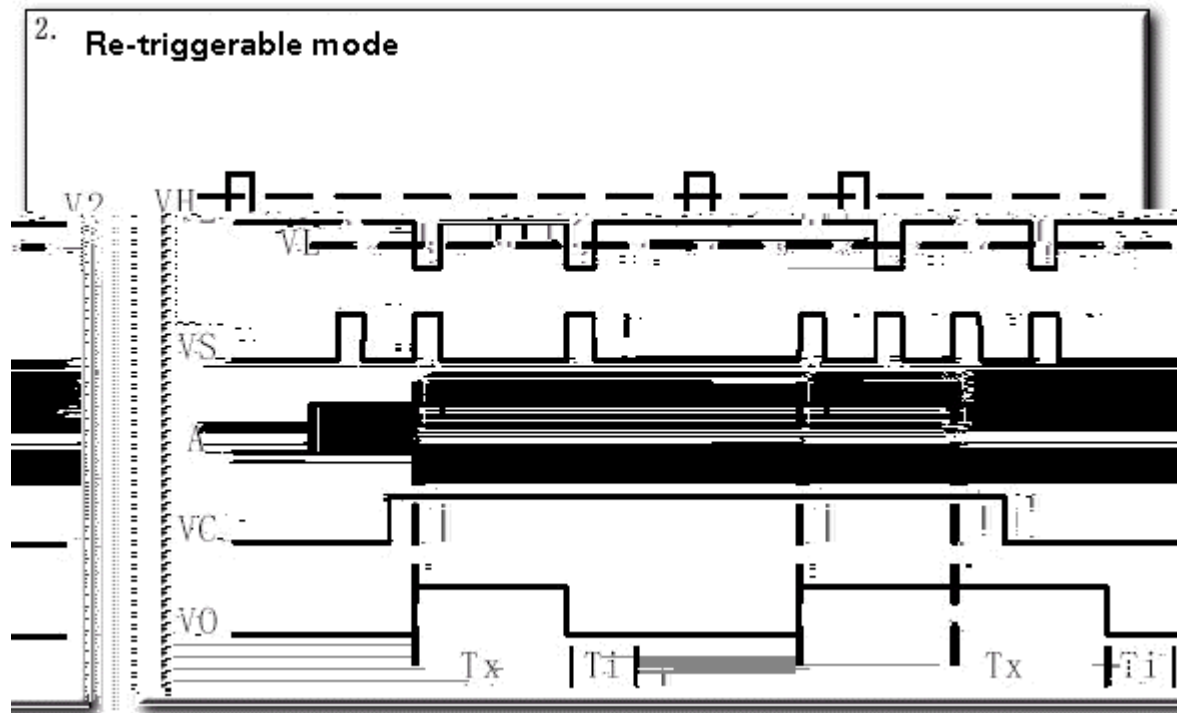
**Tx** ≈ 24576 xR10 x C6;     **Ti** ≈ 24 x R9 x C7。 (ref to schematic)

## Absolute max. ratings

Description	Condition	Range	Unit
Supply voltage	--	3 ~ 5	V
Input voltage	--	$V_{SS}-0.3 \sim V_{DD}+0.3$	V
Output current	$V_{DD}=5V$	10	mA
Operating temperature	--	-20 ~ +70	°C
Storage temperature	--	-40 ~ +125	°C

## Retrigerrable waveform

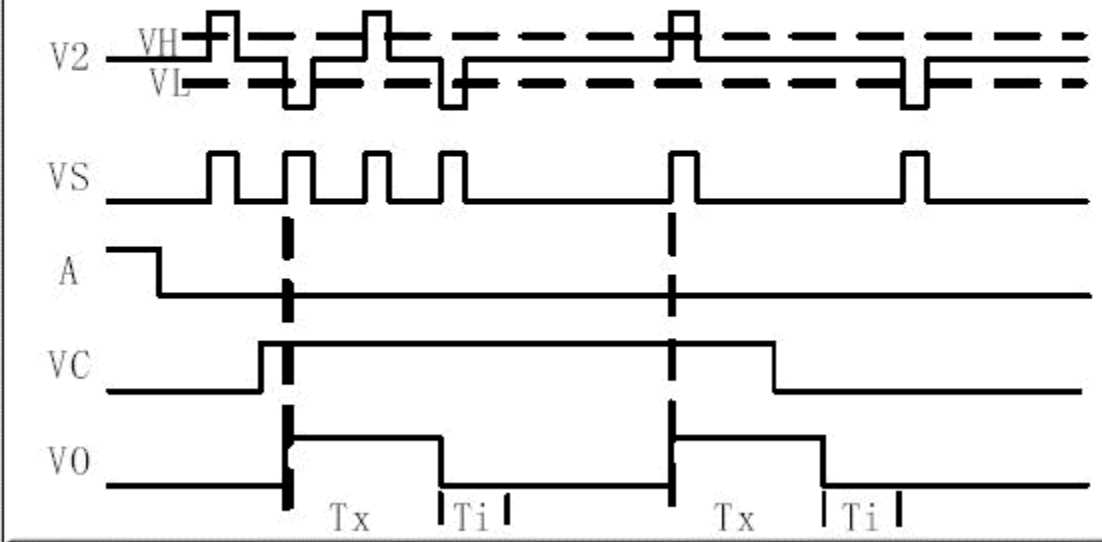
(NOTE :  $V_H=0.7V_{DD}$ ,  $V_L=0.3V_{DD}$ )



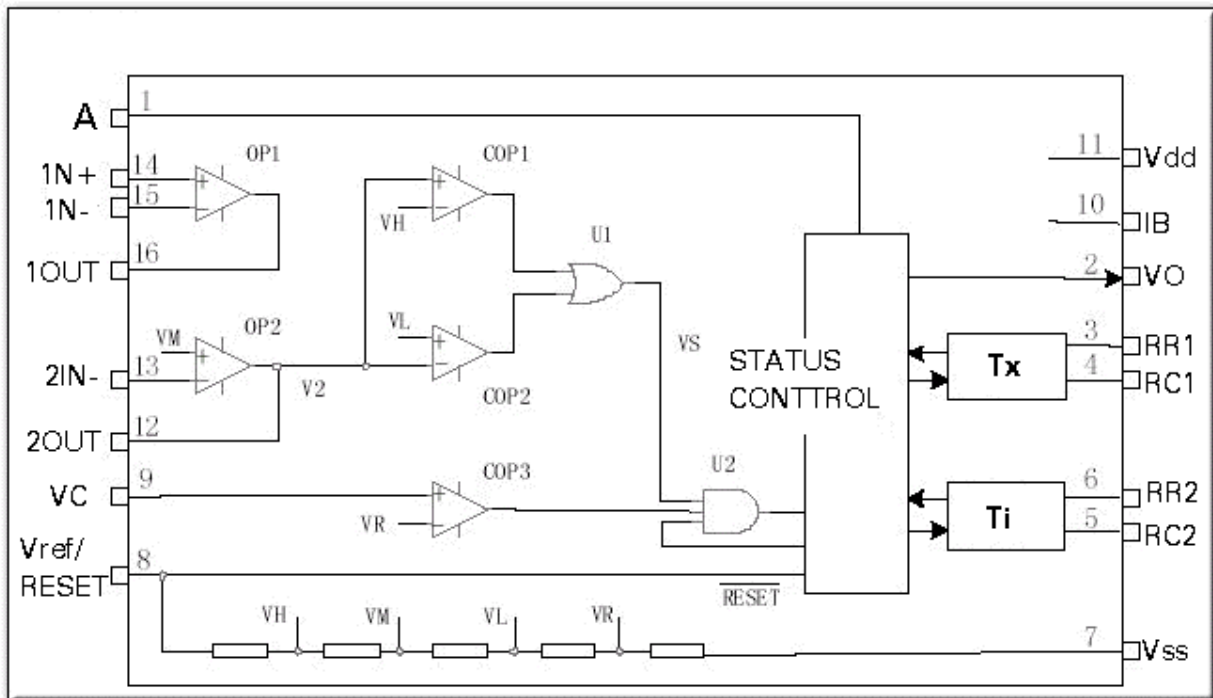
# Non-retriggerable waveform

(NOTE :  $V_H=0.7V_{dd}$ ,  $V_L=0.3V_{dd}$ )

## 1. NON-retriggerable mode



## Internal Block Diagram

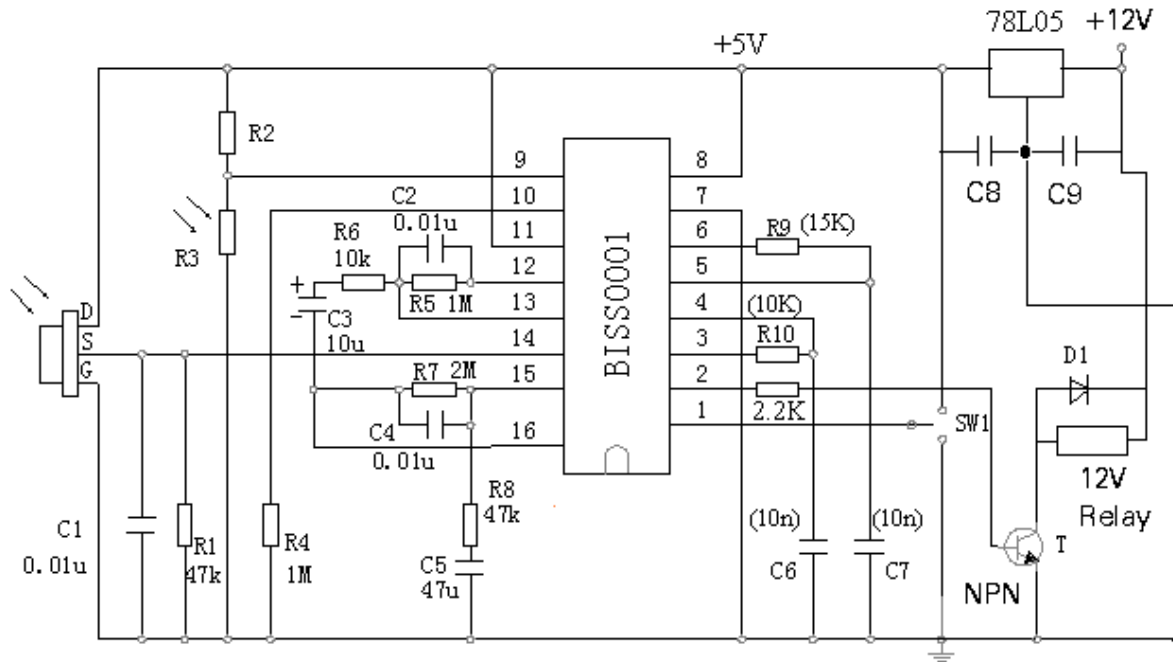


**Tx** - Output pulse width control

**Ti** - Trigger inhibit timing control

## Application Example

### -- Passive Infrared Detector for alarm system



$T_x \approx 24576 \times R_{10} \times C_6$  ;  $T_i \approx 24 \times R_9 \times C_7$  . (ref to schematic)

**R3** is a light dependent resistor which has low resistance under strong ambient light. This causes the detector to be operational only when the detection area is sufficiently dark.