BISS0001
Micro Power PIR Motion Detector IC

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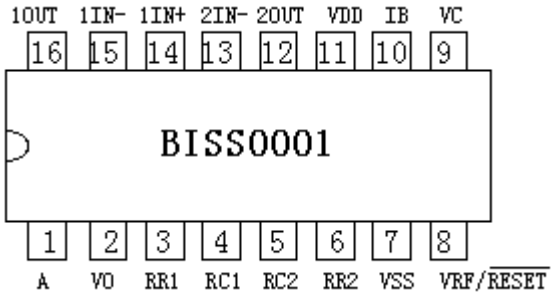
Features

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

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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.

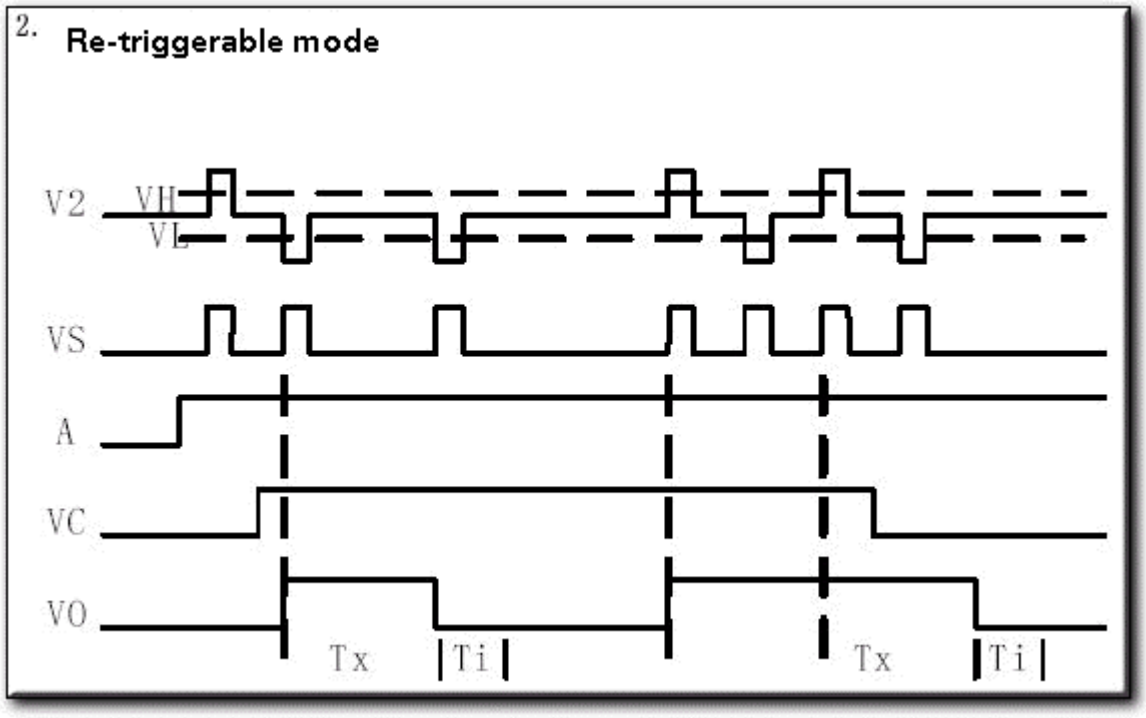
Tx ≈ 24576 xR10 x C6; **Ti** ≈ 24 x R9 x C7。 (ref to schematic)

Absolute max. ratings

Description	Condition	Range	Unit
Supply voltage	--	3 ~ 5	V
Input voltage	--	Vss-0.3~ Vdd+0.3	V
Output current	Vdd=5V	10	mA
Operating temperature	--	-20 ~ +70	°C
Storage temperature	--	-40 ~ +125	°C

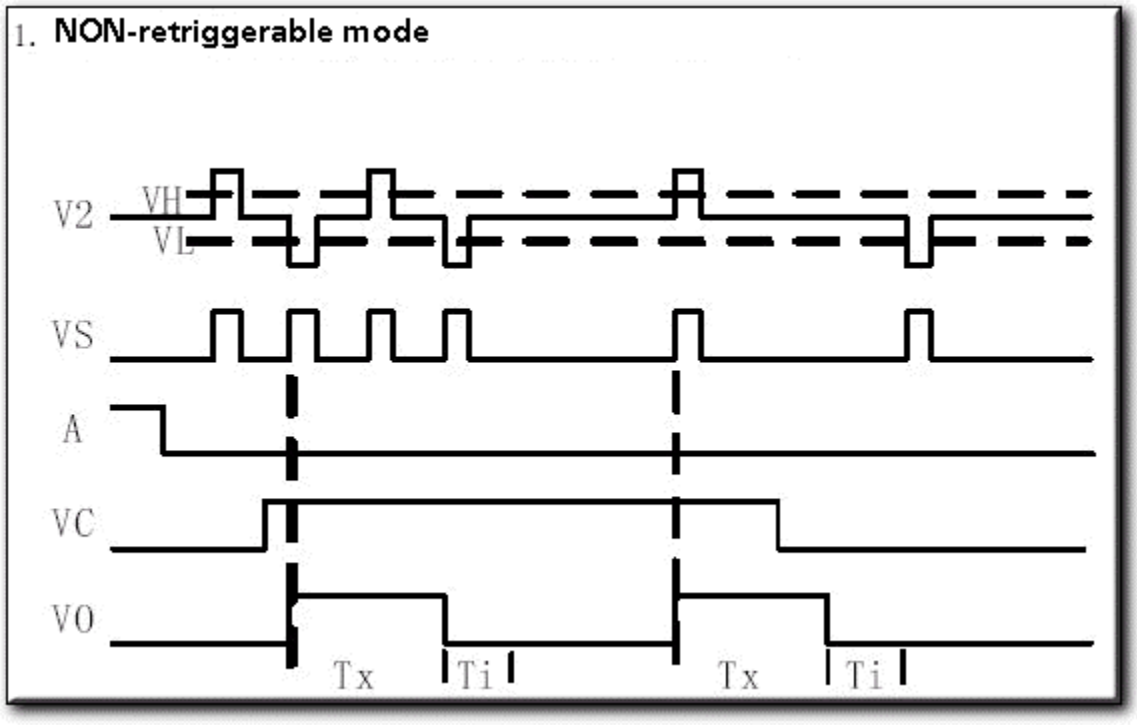
Retrigerrable waveform

(NOTE : VH=0.7Vdd, VL=0.3Vdd)

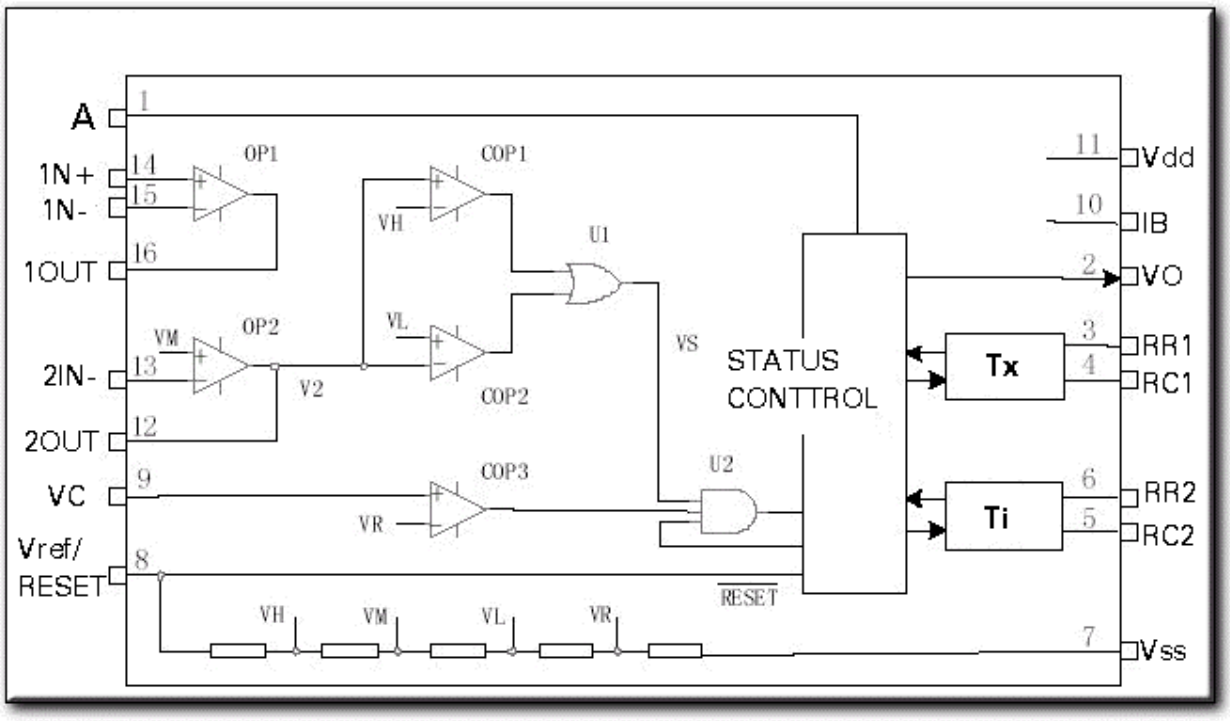


Non-retriggerable waveform

(NOTE : VH=0.7Vdd, VL=0.3Vdd)

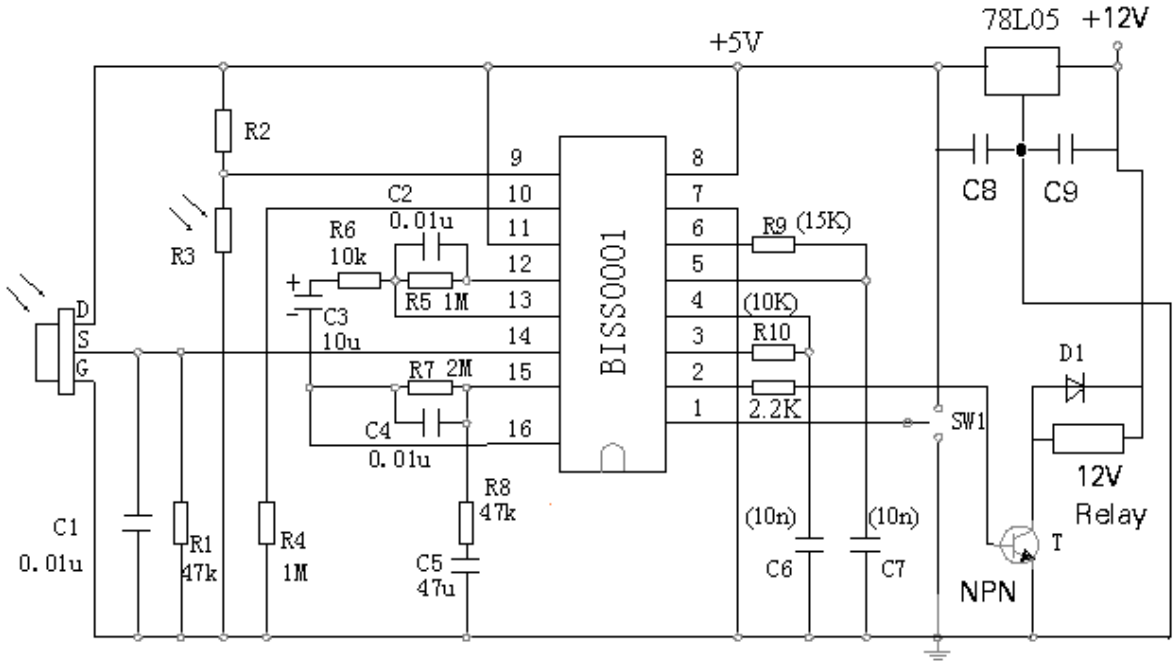


Internal Block Diagram



Tx – Output pulse width control **Ti** - Trigger inhibit timing control

Application Example
-- Passive Infrared Detector for alarm system



Tx ≈ 24576 x **R10** x **C6** ; **Ti** ≈ 24 x **R9** x **C7**。 (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.