

period should then be in the region of 5 minutes.

If a multimeter is available you can measure the voltage between P9 and P10 when the output is both in the on and the off states to check that TR2 is switching properly. In the off state there should be very little potential between the two pins but in the on state the voltage should be only a fraction of a volt less than the supply voltage.

Using the 1/300 Timer

The 1/300 timer can be used in many varied applications requiring a short duration timer. For example, the module could be used to switch off a light automatically if it was left on unnecessarily for an extended period or to switch off an alarm siren after a set period. The maximum operating period is achieved by setting RV1 to the fully anti-clockwise position. It should be remembered that the 1/300 timer is not intended for use in precision applications and the operating times stated may vary considerably due to component tolerances.

In some applications it may be necessary to switch higher voltages or currents than are possible directly. In this case the module can be used to switch a relay which is suitable for higher power switching. The open collector output makes the circuit ideal for operating relays. It is important to make sure that the relay coil is suitable for use at the power supply voltage you have chosen for the 1/300 Timer and also that the contact rating is correct for the voltage and current level that you are switching. Typical examples of suitable relays for general purpose use are stock codes JM18U for 12V operation and JM17T for 6V operation. Relay coil connections are made to P9 and P10.

PCB pins P5 (reset) and P6 (0V) provide access to the reset line of IC1 to allow the user to inhibit the output of the module independently of the input state. When P5 is not connected the reset line is automatically pulled high, allowing the timer to function normally. Access to the reset input can be useful when it is necessary to return the output to the off state before the timing cycle is complete (to switch off a light manually for example). The timer remains reset as long as P5 is in the low state. If P5 is held low when power is applied to the module, the output will remain in the off condition even if trigger pulses are applied to the input; the timer will only respond to input signals when P5 is allowed to return to the high state.

The 1/300 Timer is ideal for use with the Audio Controlled Switch kit (Stock code LP29G) as it is triggered by both positive and negative going pulses. Figure 5 shows how the two circuits can be interfaced together.

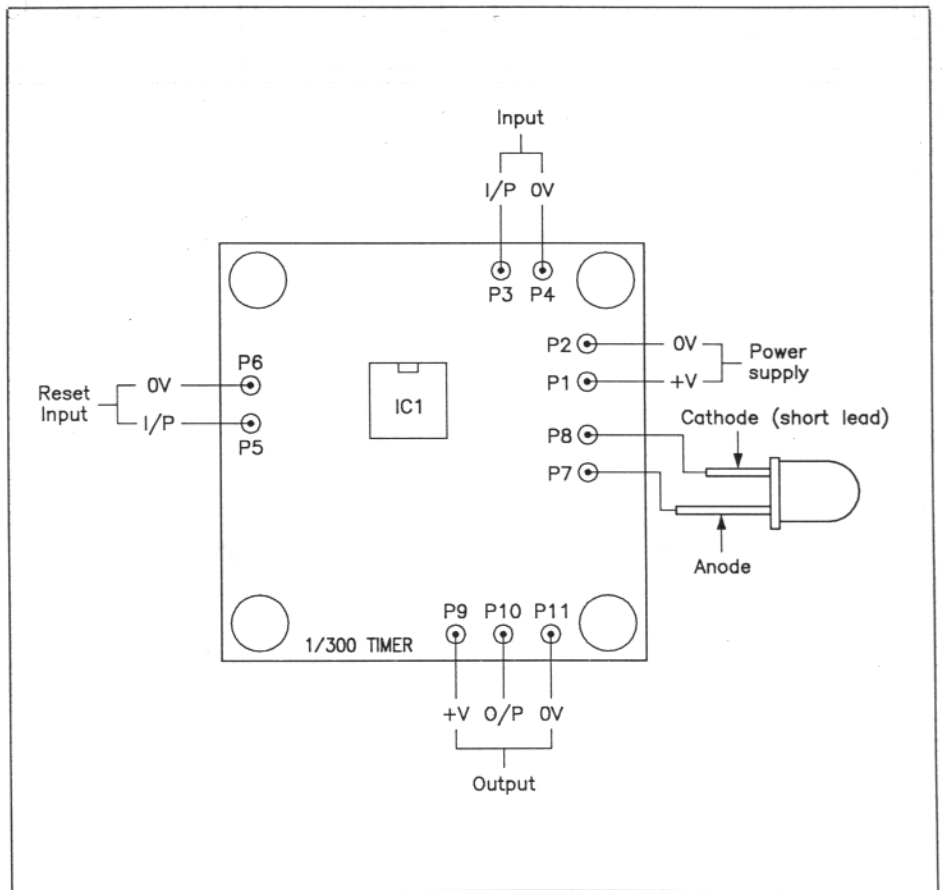


Figure 4. Wiring Diagram

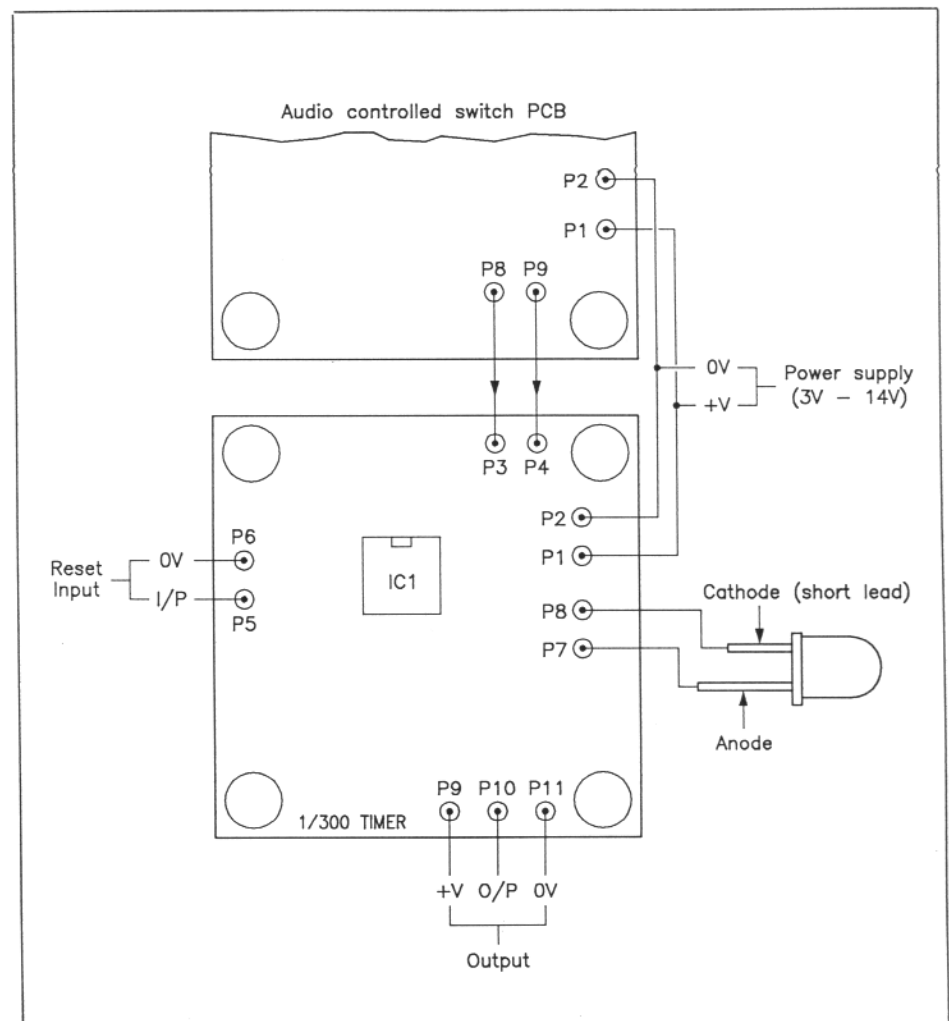


Figure 5. Connection to the Audio Controlled Switch

Specification of prototype

Power Supply Voltage		3V - 15V
Power Supply Current	With no external load	12mA Maximum at 12V
Maximum Load current		500mA
Switch-on Period	Adjustable	1s - 310s Approx.
Input Trigger	Positive & Negative Edge	± Supply Voltage
PCB Dimensions		57mm x 54mm

Table 1. Specification of Prototype

When used in this way the timer provides an automatic shut-off facility, switching off the current supply to the load after a preset period. If the two projects are used together it is not necessary to fit R13 or LD1 on the audio control switch module as the timer module has a separate LED indicator.

Finally, Table 1 shows the specification of the prototype 1/300 timer module.

1/300 TIMER PARTS LIST

Resistors: All 1% 0.6W metal film.

R1,8	10k	2	(M10K)
R2,4	1M	2	(M1M)
R3,6	27k	2	(M27K)
R5	220k	1	(M220K)
R7,10,11	100k	3	(M100K)
R9	15k	1	(M15K)
R12	1k	1	(M1K)
RV1	4M7 Hor. Encl. Preset	1	(UH11M)

Capacitors			
C1,2	100nF Minidisc	2	(YR75S)
C3	10nF Ceramic	1	(WX77J)
C4	100µF 16V Minelect	1	(RA55K)
C5	47µF 16V Minelect	1	(YY37S)

Semiconductors

TR1	MPSA14	1	(QH60Q)
TR2	TIP122	1	(WQ73Q)
IC1	TLC555CP	1	(RA76H)
LD1	LED Red	1	(WL27E)
D1,2	1N4148	2	(QL80B)
D3	1N4007	1	(QL79L)

Miscellaneous

P1-11	Pins 2145	1 Pkt	(FL24B)
	DIL Socket 8-Pin	1	(BL17T)
	PC Board	1	(GE28F)
	Constructors Guide	1	(XH79L)

A complete kit of parts is available:
Order As LP30H (1/300 Timer)
 The following item in the kit is also available separately,
 but is not shown in the 1990 catalogue:
 Adj Time Sw PCB **Order As GE28F**

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