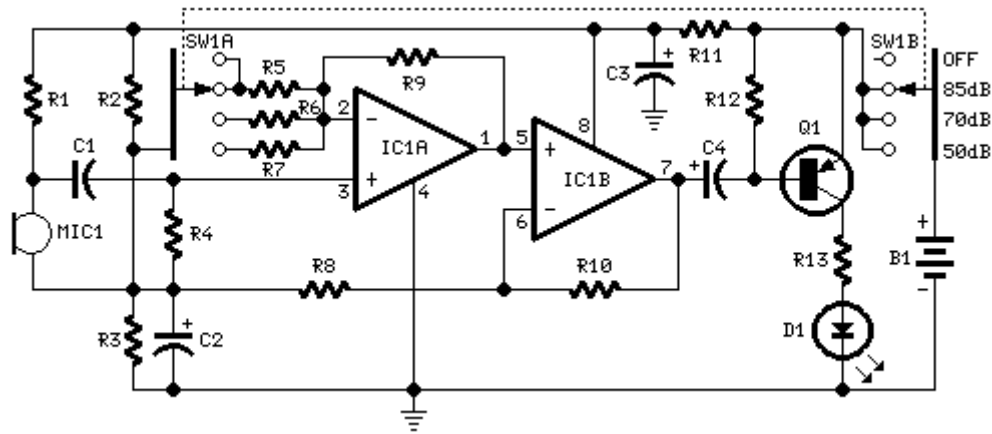


Room Noise Detector

One LED monitors three levels: 50, 70 & 85 dB
Useful to detect too noisy environments

Circuit diagram:



Parts:

R1	10K	1/4W Resistor
R2,R3	22K	1/4W Resistors
R4	100K	1/4W Resistor
R5,R9,R10	56K	1/4W Resistors
R6	5K6	1/4W Resistor
R7	560R	1/4W Resistor
R8	2K2	1/4W Resistor
R11	1K	1/4W Resistor
R12	33K	1/4W Resistor
R13	330R	1/4W Resistor
C1	100nF	63V Polyester Capacitor
C2	10μF	25V Electrolytic Capacitor
C3	470μF	25V Electrolytic Capacitor
C4	47μF	25V Electrolytic Capacitor
D1	5mm.	Red LED
IC1	LM358	Low Power Dual Op-amp
Q1	BC327	45V 800mA PNP Transistor
MIC1		Miniature electret microphone

SW1_____2 poles 4 ways rotary switch

B1_____9V PP3 Battery

Clip for PP3 Battery

Device purpose:

This circuit is intended to signal through a flashing LED, the exceeding of a fixed threshold in room noise, chosen from three fixed levels, namely 50, 70 & 85 dB. Two Op-amps provide the necessary circuit gain for sounds picked-up by a miniature electret microphone to drive a LED. With SW1 in the first position the circuit is off. Second, third and fourth positions power the circuit and set the input sensitivity threshold to 85, 70 & 50 dB respectively.

Current drawing is <1mA with LED off and 12-15mA when the LED is steady on.

Use:

- | Place the small box containing the circuit in the room you intend to measure ambient noise.
- | The 50 dB setting is provided to monitor the noise in the bedroom at night. If the LED is steady on, or flashes bright often, then your bedroom is inadequate and too noisy for sleep.
- | The 70 dB setting is for living-rooms. If this level is often exceeded during the day, your apartment is rather uncomfortable.
- | If noise level is constantly over 85 dB, 8 hours a day, then you live in a dangerous environment.

dB	Example of sound sources
20	Quiet garden, electric-clock ticking, drizzling rain
30	Blast of wind, whisper @ 1 m.
40	Countryside areas, quiet apartment, wrinkling paper @ 1 m.
50	Residential areas, quiet streets, fridges, conversation @ 1 m.
55	Offices, air-conditioners
60	Alarm-clocks, radio & TV sets at normal volume
64	Washing machines, quiet typewriters
67	Hair-dryers, crowded restaurants
69	Dish-washers, floor-polishers
70	Loud conversation, noisy street, radio & TV sets at high volume
72	Vacuum cleaners
78	Telephone ring, mechanical workshop
80	Passing trucks, noisy hall or plant, shuffling @ 1 m.

90	Passing train, pneumatic hammer, car hooter @ 1 m.
95	Mega "disco", circular saw
100	Motorcycle without silencer
