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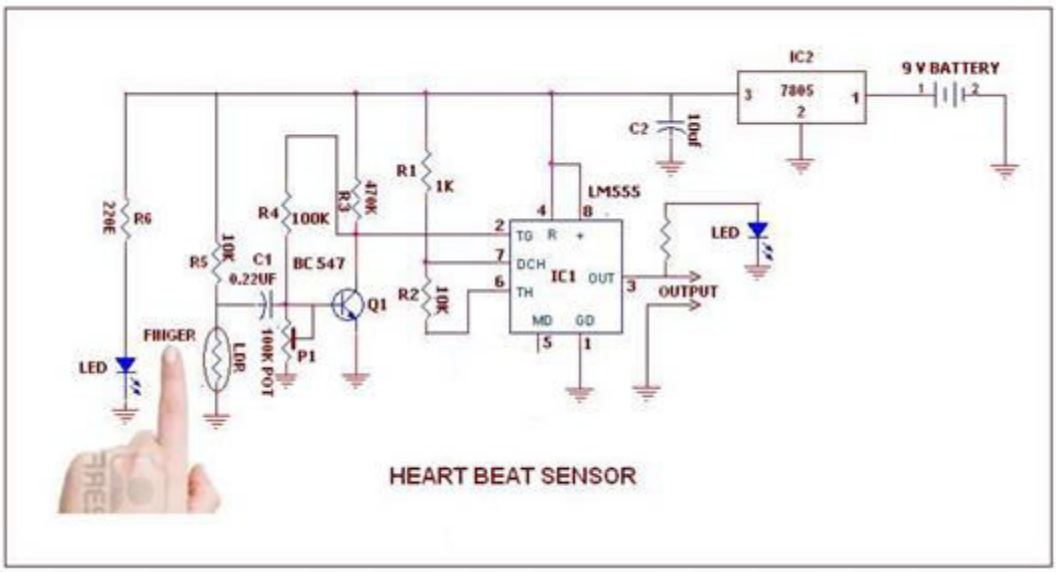
Heart Beat Sensor



A heart beat pulse can be detected by sensing the intensity of blood flow during the heart beat pumping. The intensity of the blood flow varies during the heart pumping, which can be detected by passing a Red light through the fore finger and detected using a LDR on the other side of the fore finger.
The LDR resistance varies with the blood flow intensity and also there is a change in LDR voltage while detecting the light intensity.
This change in voltage of the LDR is amplified by Q1, (BC 547 NPN Transistor), and inturn given to the trigger input of the IC 5555. The amplified negative going pulse switches and the output of the 555 resulting in detecting the heat beat pulses. The output of 555 drives a LED and a buzzer directly without using any transistor at its output. The heart beat pulses can be counted or transmitted further medical analysis. The circuit operates with a 9volt battery.

Components:R1-1k, R2-10K, R3-470K, R4-100K, R5-10K, R6-220E, LDR, LED, P1-100K POT, C1-0.22uf, IC1-555, C2-10uf, IC2-7805, 9V Battery, Battery Snapper, LED, Buzzer.