

Cellular Phone Helper

When your cellular phone receives a call, it begins transmitting even before you answer. The circuit shown in fig.1 detects this signal and can operate a variety of devices referred to as “load”.

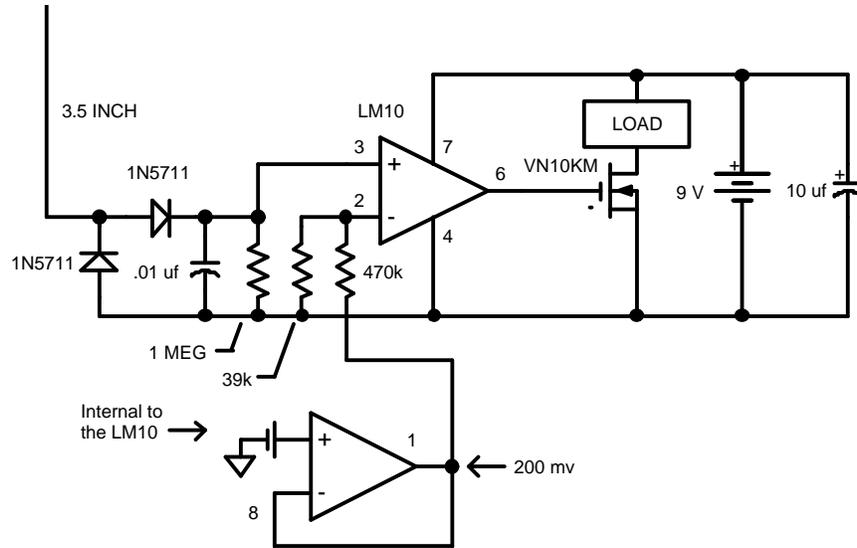


Figure 1: Cellular phone activity detector.

For times when a loud beeping is unacceptable, the load could be a small motor with an offset weight on the shaft so that it vibrates when the phone receives a call. (Add a switch in series with the battery for this application to stop the vibration while you talk.) Or the load could be a lamp or lamp/flasher circuit for a visual indication of an incoming call. The load could be a timer, tape recorder, or even an interrupt line on your laptop to bring up a call logging program. (That one might be rather challenging.) At the other extreme, the detector could be used to generate a louder ringing signal or even honk the horn for when you leave the phone in the car. The circuit will work well from the car's 12 volt battery and the current consumption is so low that a power switch is not included.

The only critical wiring involves the diodes, antenna, and .01µf capacitor. Keep these leads short and the circuit should work fine. If the sensitivity is too high then increase the value of the 39k resistor. Other RF Schottky diodes or fast silicon diodes may be substituted and even 1N914s may work adequately well. Use insulated wire for the antenna and keep it fairly straight although bending the antenna to fit inside a small plastic enclosure won't hurt the performance much.

Substitute a cmos op-amp for the LM10 with different voltage divider values for the trigger reference to reduce the standby current to virtually nothing for applications powered by tiny batteries.

Build the circuit into a toy cellular phone for the young one. When your phone rings, so does his! (That's too cool!)

