555 timer IC

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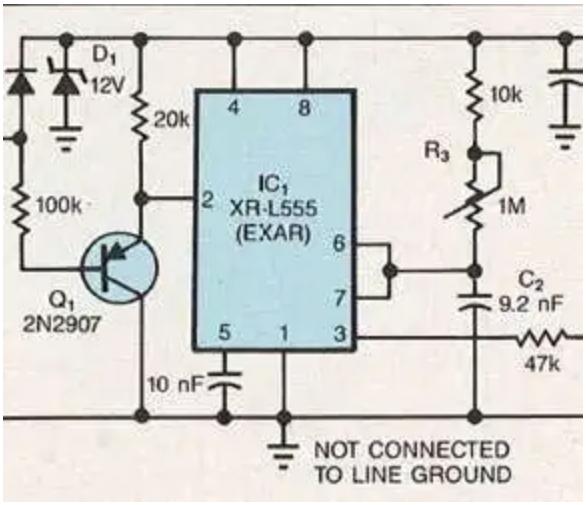
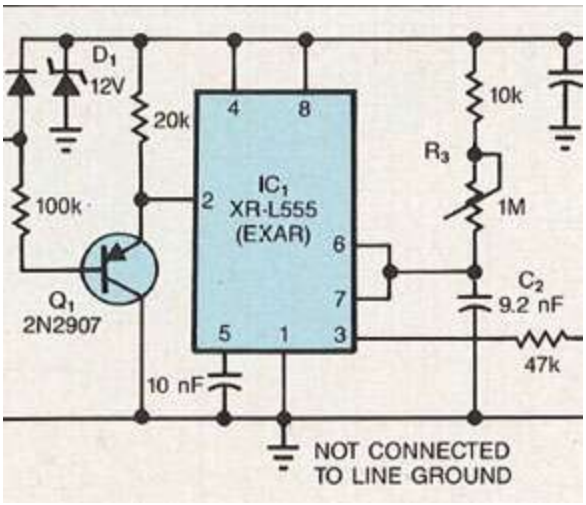


Used in a variety of timer, pulse generation, and oscillator applications, the 555 was designed in 1971 by Hans Camenzind. A favorite for many engineers, the 555 is still in widespread use due to its ease of use, low price, and stability.



In this collection, you'll find Design Ideas, history, and appreciation for one of the most successful circuits in electronics history.

Schmitt trigger provides alternative to 555 timer
Which should be used, the 555 or the Schmitt trigger?

Make schematic symbols understandable
Schematic symbol preferences are very personal, but it is important to make them understandable. How do your drawings compare to this engineer's guidelines?

Boost and modify square waves: More circuits
Build your own signal-conditioning modules to provide the amount of voltage, current and power you need. See schematics for using timer, amplifiers, and voltage regulators to get your desired test signals.

555-based class-D headphone driver makes great practice amp
This class-D audio amp "plays" to the 555's strengths.

Boost and modify square waves
Build your own signal-conditioning modules to provide the amount of voltage, current, and power you need. See schematics for the circuits.

The Silicon Valley electronic flea market and breakfast
You never know what you'll find at the Silicon Valley electronic flea market.

555 timer triggers phase-control circuit
In this Design Ideas Classic from 1988 a 555 timer IC triggers a phase control circuit, allowing manual adjustment of power delivered to a load.

Use a transistor and an ammeter to measure inductance
Bipolar junction transistors transfer a current from a lower-resistance emitter to a higher-resistance collector. You can use this property to measure inductance.

555 timer inventor Hans Camenzind remembered
Hans Camenzind, the Swiss emigre analog guru who invented one of the most successful circuits in electronics history and introduced the concept of phase-locked loop to IC design, passed away in his sleep at the age of 78 on August 15, 2012.

Reliable 555 timer doesn't falsely trigger
Powering the timer from a NOR gate keeps it unpowered until needed.

Power an LED driver using off-the-shelf components
Drive LEDs with a 555 timer and two transistors.

555 timer IC design contest– no strings
Learn more about the 555 timer IC design contest.

AM radio made with a 555 timer IC
When my buddy told me he was using a 555 timer IC to make an AM radio, I figured he simply reverse-biased the power to it and used it as a detector diode. No, he is much to cool for that.

555 timer eliminates LED driver's need for microprocessor control
A timer provides programming pulses for lower cost than a microprocessor.

NE555 timer sparks low-cost voltage-to-frequency converter
The combination of an NE555 timer and a Miller integrator yields a voltage-to-frequency converter that costs less than 50 cents.

555 timer drives multiple LEDs from one NiMH cell
Using a CMOS 555 timer, you can drive seven high-brightness LEDs from a single 1.25V cell.

Analog switch converts 555 timer into pulse-width modulator
Added CMOS switch enhances a PWM oscillator.

Use a 555 timer as a switch-mode power supply
This circuit shows how to turn a 555 PWM circuit into an switch-mode power supply with only one simple equation.

Make a simple ramp generator for stepper motors
Most stepper motors receive their drive from a pulse chain that starts out slowly and then increases in rate until the motor reaches the desired rate. To stop the motor, it must gradually decrease or ramp down to zero. In any circuit without a microprocessor, this ramp is difficult to generate.

Design low-duty-cycle timer circuits
This Design Idea uses the TLC555 CMOS timer for a standard, greater-than-50%-duty-cycle, low-frequency design.

555 makes handy voltage-to-time converter
This circuit is a simple, low-cost voltage-to-time converter using the ubiquitous 555 timer chip.