

TI494 inverter output voltage is low





Overview

How does a tl494 inverter work?

The inverter works based on the switching IC of TL494. The IC generates high-frequency pulses (about 30khz). The pulses are amplified by the MOSFET of IRF3205 and pass through the transformer. The Fast diodes are rectified and give the power output.

What voltage is tl494 tc4420?

The supply voltage for the TL494 is 9V, and for TC4420, 12V. The frequency is 40kHz at 45% duty cycle for testing purposes. So now the question is: the circuit works as it's supposed to, but the problem is, when checking the gate voltage of the MOSFET, the voltage is quite low (around 5V), which is not enough to turn the MOSFET fully on and off.

How does tl494 work?

The emitter is tied to ground via 1k resistor to form an emitter follower circuit. The signal is then fed to the gate driver IC. The supply voltage for the TL494 is 9V, and for TC4420, 12V. The frequency is 40kHz at 45% duty cycle for testing purposes.

How do I know if my tl494 is saturating?

Measure the feedback voltage going back to the TL494 to verify the opto current is reponding to the changes in +OUT. Did you intend for the second opto LED to be on?

If not, make sure the second opto LED is OFF. Force it to always be OFF because I believe it is always fully ON and this is saturating the TL494 feedback voltage.



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