

## 555 Timer IC

The 555 timer IC is a widely used integrated circuit that simplifies building electrical circuits by providing various functionalities through external components.

- The dual inline package features pins connected via three 5 Kiloohm resistors, forming a voltage divider between pin 1 (ground) and pin 8 (supply voltage).
- Pin 2 serves as the Trigger pin, connecting to a comparator's negative input, while its positive input connects to a voltage divider at one-third of the supply voltage.
- Pin 3 is the output linked to an output driver; pin 4 (Reset) can reset the flip-flop when grounded, typically tied to supply voltage for stability.
- Pin 5 (Control Voltage) stabilizes reference voltages with a capacitor or allows external voltage adjustments; pin 6 (Threshold Pin) connects to another comparator's positive input.
- The Discharge Pin connects to a bipolar junction transistor, completing the internal structure necessary for various configurations.

The NE555 has limitations in creating symmetrical PWM signals due to its bipolar transistors' behavior affecting charging characteristics.