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555 STATES

$R_{HI} S_{LO}$, gives Q_{HI} ; $R_{LO} S_{HI}$ gives Q_{LO} ; $R_{LO} S_{LO}$ gives Q_{PREV}

BEFORE THE DEVICE IS TURNED ON:

$V_{CAP} = 0\text{ V}$ $S = HI$ $R = LO$ THEREFORE: $Q = LO$

DURING CHARGING:

$V_{CAP} > 5\text{ V}$ $S = LO$ $R = LO$ THEREFORE: $Q = PREVIOUS$

$V_{CAP} > 10\text{ V}$ $S = LO$ $R = HI$ THEREFORE: $Q = HI$, WHICH TURNS ON THE DISCHARGE TRANSISTOR.

DURING DISCHARGING:

$V_{CAP} < 10\text{ V}$ $S = LO$ $R = LO$ THEREFORE: $Q = PREVIOUS$

$V_{CAP} < 5\text{ V}$ $S = HI$ $R = LO$ THEREFORE: $Q = LO$, WHICH TURNS OFF THE DISCHARGE TRANSISTOR, AND THE CHARGING CYCLE BEGINS AGAIN.

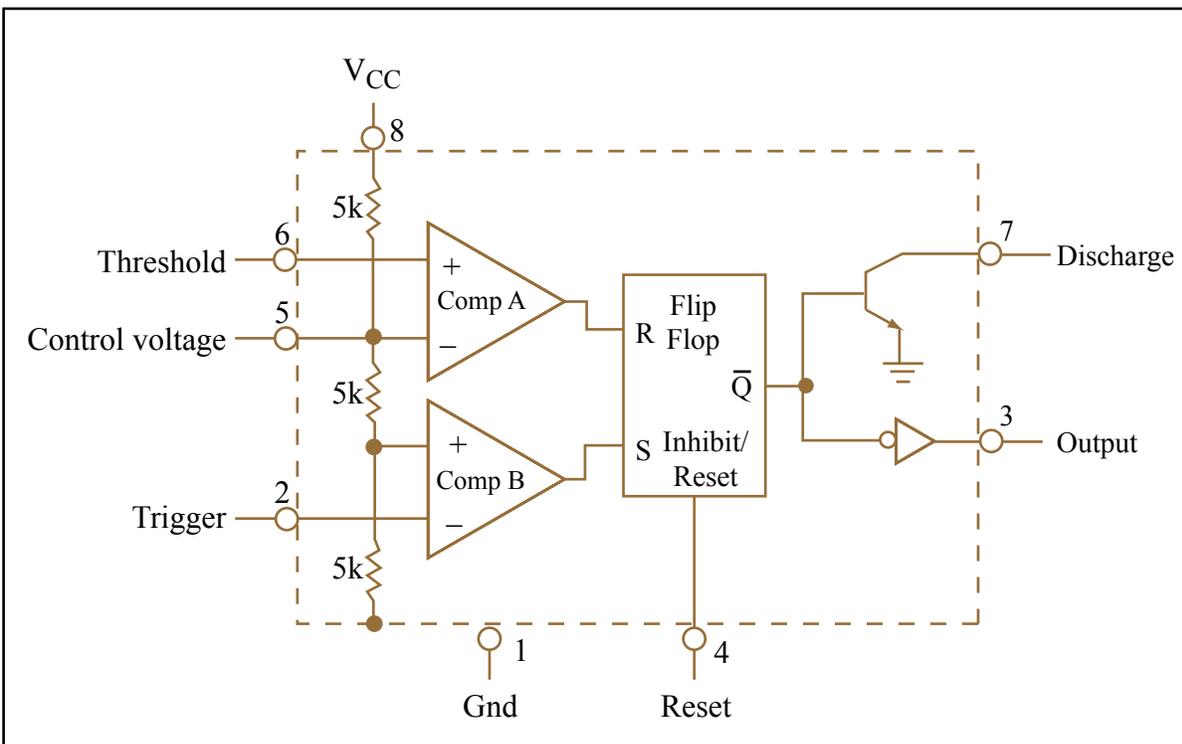


Figure by MIT OpenCourseWare.