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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:

 $V_{CAP} = 0 V$ THEREFORE: Q = LO S = HIR = LO **DURING CHARGING:** THEREFORE: Q = PREVIOUS $V_{CAP} > 5 V$ R = LOS = LO $V_{CAP} > 10 V$ S = LOR = HITHEREFORE: Q = HI, WHICH TURNS ON THE DISCHARGE TRANSISTOR. **DURING DISCHARGING:** $V_{CAP} < 10 \text{ V}$ S = LO R = LOTHEREFORE: Q = PREVIOUS $V_{CAP} < 5 V$ S = HIR = LOTHEREFORE: Q = LO, WHICH TURNS OFF THE

DISCHARGE TRANSISTOR, AND THE CHARGING CYCLE BEGINS AGAIN.



Figure by MIT OpenCourseWare.

1 of 1 Cite as: Ron Roscoe, course materials for 6.101 Introductory Analog Electronics Laboratory, Spring 2007. MIT OpenCourseWare (http://ocw.mit.edu/), Massachusetts Institute of Technology. Downloaded on [DD Month YYYY].

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