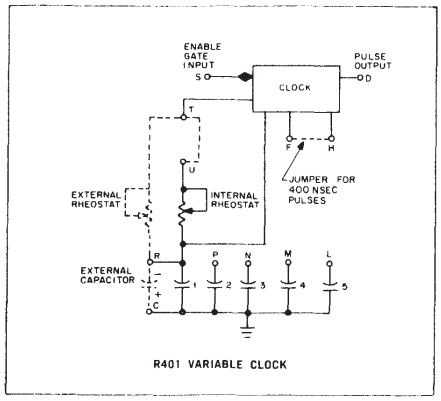

Figure 2-3 Diagram of R303 Integrating One-Shot

2.3.2 Type W513 Level Amplifier

This module contains six identical level amplifier circuits (see engineering drawing RS-B-W513). The input levels are received from DEC relay or solenoid driver circuits having outputs which are between −2 and −3v when the driver is "on"(1) and are floating when it is "off"(0). An input current exceeding 1.2 ma to the level amplifier makes the input potential more positive than −3.5v and asserts the output at ground. When the input current is cut off, the input potential returns to approximately −5v and the output becomes −3v. Since all circuits are identical, the first circuit in the replacement schematic (input at D and output at E) is described.

The circuit is quiescent when no input current is flowing into D. Diodes D1 and D2 clamp input return R1 at about −5v. The drop across D1 maintains Q1 cutoff, thus allowing R3 to keep the Q2 base positive and cut off Q2. D4 clamps output E at the Q2 collector to −3v.

When the input goes more positive to −2 to −3v it starts supplying current to pin D. It will back bias D1 and turn on Q1. Q2 base current flows through Q1 and R2 so Q2 turns on, bringing E to ground potential. When the input current at D opens, both transistors cut off again and the circuit is quiescent again.

A resistor is tied to pin T. It is used to simulate relay currents such as those existing in the 555 Relay Transport and therefore allows mixing TU55s and 555s in the same system. The current through this resistor is measured by an analog circuit at the control to determine whether one or more transports are being selected and causes an alarm or error signal in case the latter condition happens.