

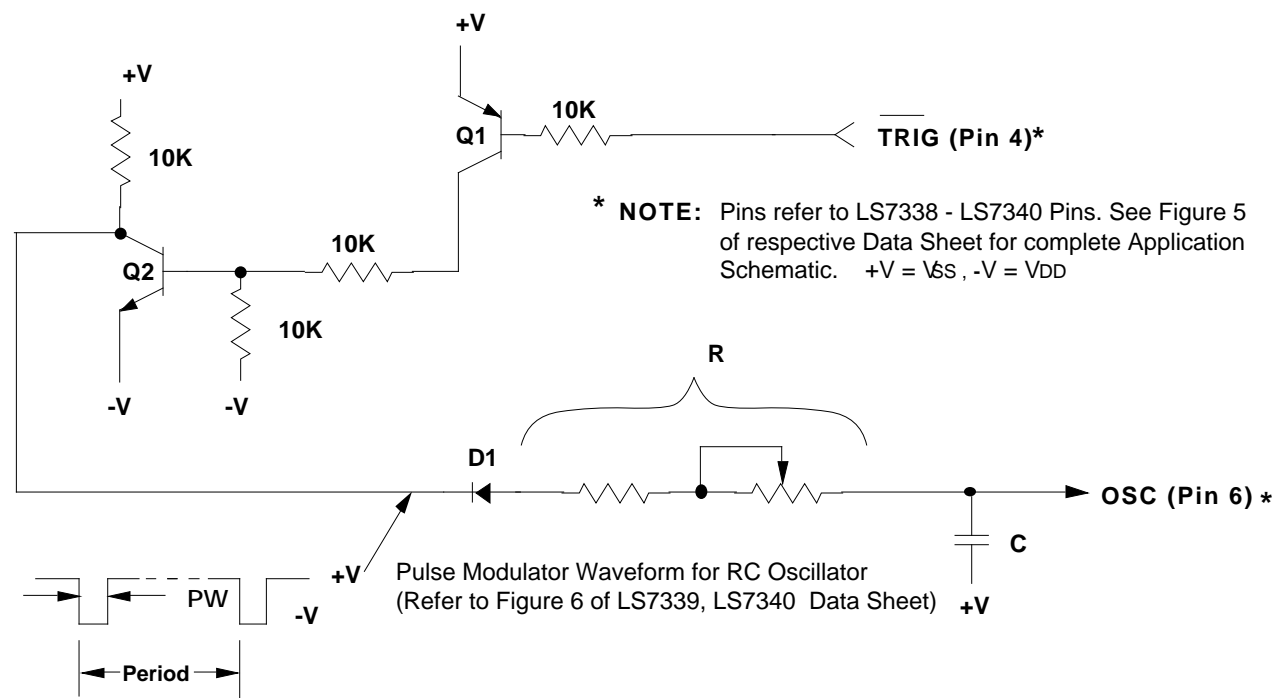
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ACCURATELY EXTENDING THE TIMING RANGE OF THE LS7338-LS7340

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The Timing Range of these ICs is based on the formula $255RC$, where 255 is the fixed maximum count on the chip and RC is the product of the Resistor and Capacitor values of the Oscillator. A practical maximum limit to the RC value is imposed by the leakage characteristic of large-value Capacitors. Figure 6 of the LS7339, LS7340 Data Sheet shows a method to significantly extend the Timing

Range of an RC based Oscillator/Timer by Pulse Modulating the Oscillator. While this does allow use of a reasonable value of Capacitor, it causes the overall Oscillator Tolerance to increase. Figure 1 illustrates how to use the timing accuracy of the Output Triac Trigger Pulses to Pulse Modulate the Oscillator without affecting the overall tolerance of the Oscillator.



- Q1** = MPS8599 PNP Transistor
- Q2** = MPS8099 NPN Transistor
- D1** = 1N914 Diode
- All Resistors 1/4W, Capacitor 25V**

For 60Hz Line Frequency

Parameter	LS7338, LS7340	LS7339
Period	8,333μs	8,333μs
PW	33μs	1,000μs
RC Multiplier	252.5	8.33

*RC Multiplier= Period/PW (Reference Figure 6 of LS7339, LS7340 Data Sheet)

FIGURE 1. ACCURATE PULSE MODULATION OF LS7338-LS7340 RC OSCILLATOR