

Circuit Simulation Project

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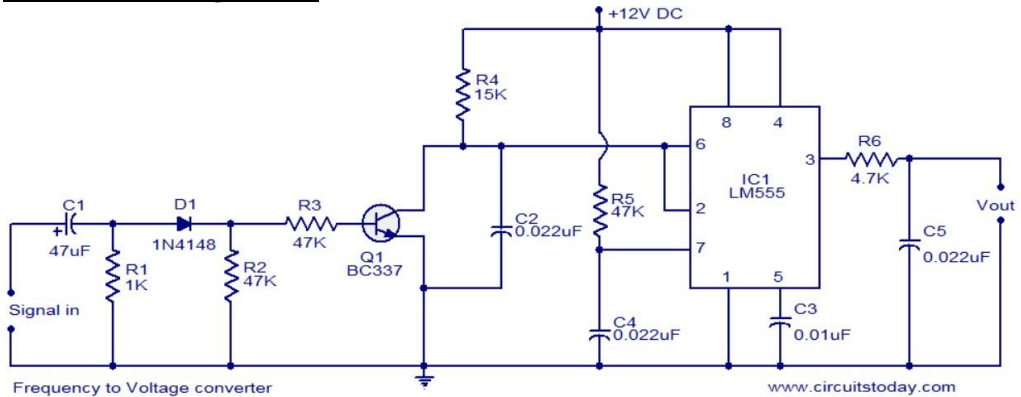
Title of the circuit: Frequency To Voltage Converter.

Theory/Description:

This frequency-to-voltage converter circuit uses a BC547 transistor (Q1) to detect and amplify the input frequency signal, which is ACcoupled through C1 and rectified by D1. Each input cycle triggers the transistor, creating pulses that activate the LM555N timer configured as a monostable multivibrator. The 555 timer generates standardized output pulses with consistent width (determined by R5 and C2), regardless of input frequency variations. These uniform pulses are then filtered by the RC low-pass network (R6, C3, C4, C5) to produce a smooth DC output voltage that is directly proportional to the input frequency - higher

frequencies generate more pulses per unit time, resulting in higher average DC voltage at the output.

Circuit Diagram:



Source/Reference:

<https://circuitstoday.com/f-to-v-converter>

NOTE: The output of the circuit is not a pure DC but a PWM waveform. Additional circuitry is required to convert this PWM waveform to pure DC.