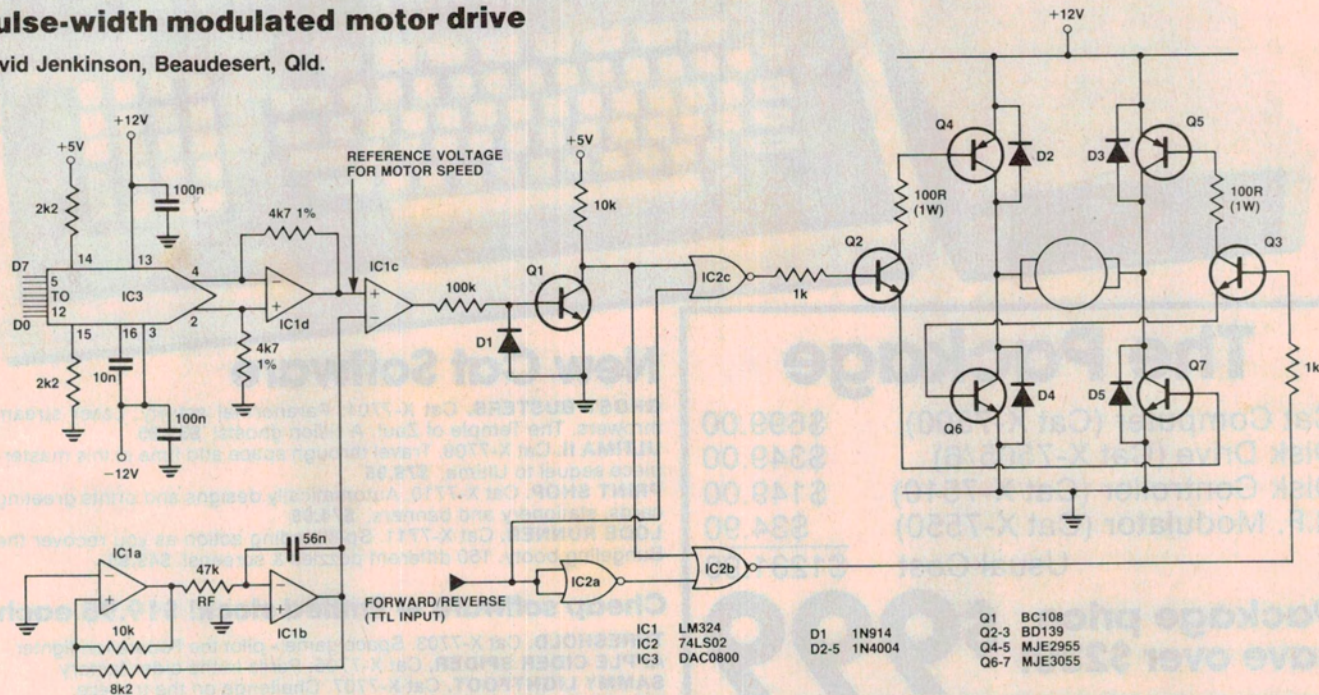


Pulse-width modulated motor drive

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The following circuit was designed as the basis of a velocity control system for a small robot platform. However it may be used to control any small (up to 4 amp) permanent magnet dc motor, eg a slot-car or model train.

The circuit uses pulse-width modulation to control the motor speed. The velocity set-point is output from the computer to the DAC. A TTL-level signal is used to control the direction of rotation.

IC1a and IC1b form a triangle-

wave oscillator which is compared with the set-point voltage by IC1c to vary the mark/space ratio of the pulse train. The frequency of the pulse-width signal is approximately 120 Hz but can be altered by varying rf.

By adding a velocity trans-

ducer to the output shaft of the motor, closed-loop control can be implemented by a computer algorithm.