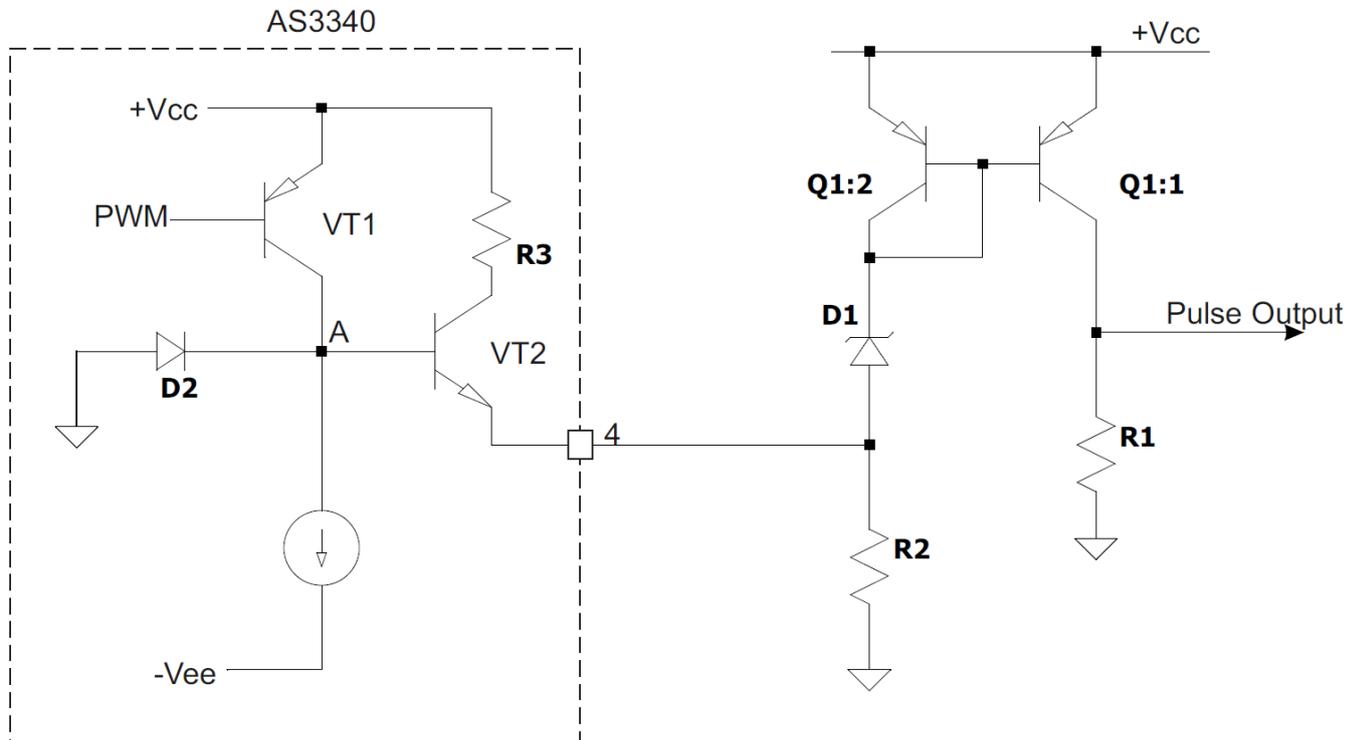


AS3340 - Tip : VCO vs PWM stability

To improve stability of VCO during PWM excursion, simple solution can be used:



Q1 : BCV62 (PNP pair)

VZ1: BZX79-C2V4

R2 : 10k

R1 : 51k

Solution prevents voltage on internal node A go below $+V_{cc}-(7-8V)$, minimizing voltage swing. Diode D2 remains turned OFF and prevents excess current flow through internal GND. VT2 serves as transistor, when A node is high (current mirror Q1:2; Q1:1 is OFF), and as zener (VT2: BE), when A node goes low (current mirror Q1:2; Q1:1 is ON).

Design improves stability of VCO vs PWM several times.

Note: Signal on collector Q1:1 Pulse Output is inverted to Pin4 of the AS3340.