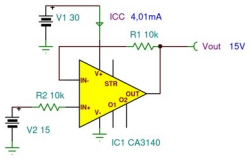
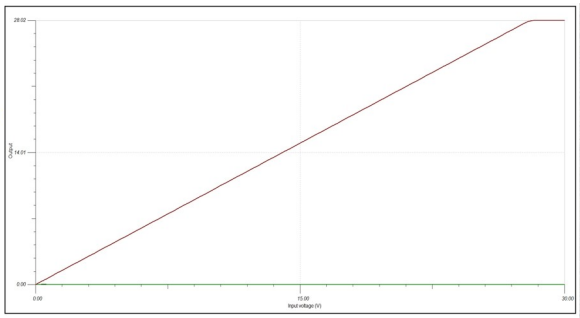
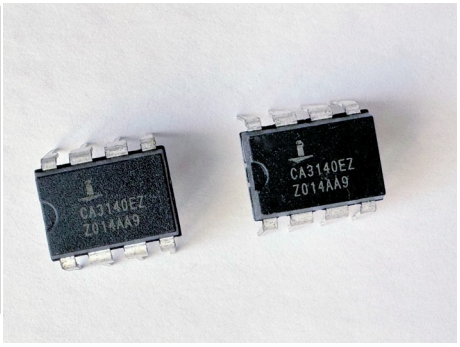
CA3140 4.5MHz, BiMOS Operational Amplifier Macro Model

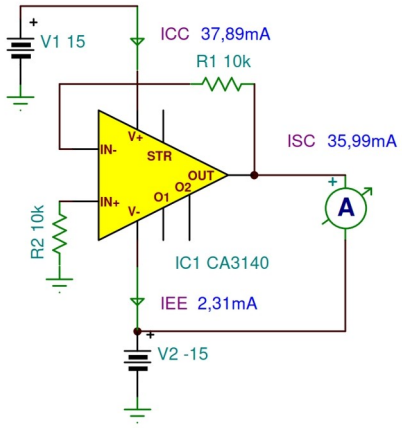
Single-supply Operation:

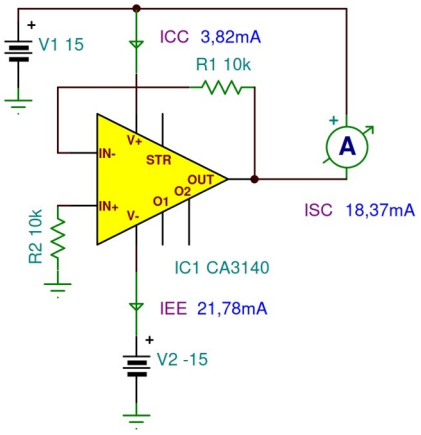




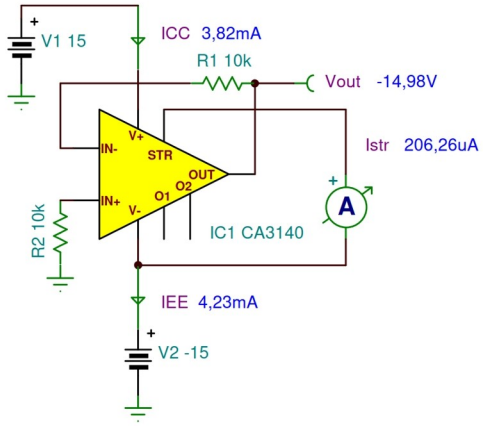


Short Circuit Current to Opposite Supply:



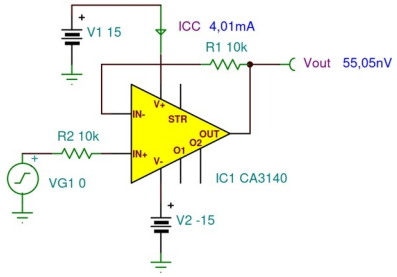


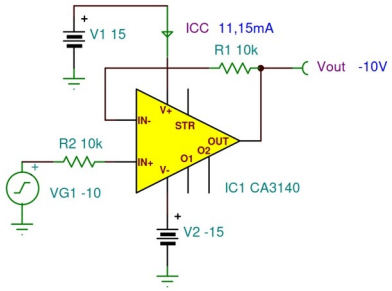
Sink Current From Terminal 8 To Terminal 4:

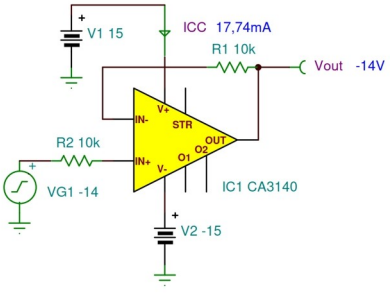


The CA3140 Series circuits employ a broad band output stage that can sink loads to the negative supply to complement the capability of the PMOS input stage when operating near the negative rail. When the CA3140 is operating such that output Terminal 6 (OUT) is sinking current to the V- bus, transistor Q16 is the current sinking element. This sink current flows regardless of load; any excess current is internally supplied by the emitter-follower Q18.

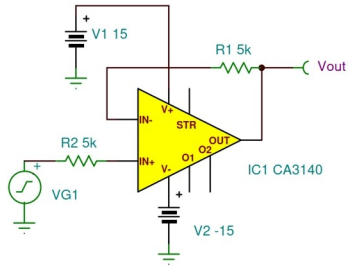
Simply and understandably, the IC supply current depends on the value of the output voltage. So the current of Q16 is present in the supply current. This without load increases the dissipation and heats the circuit.

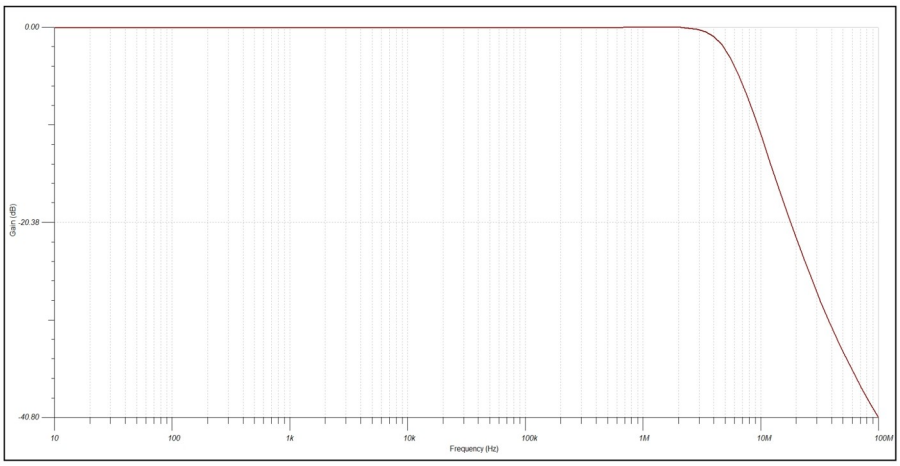




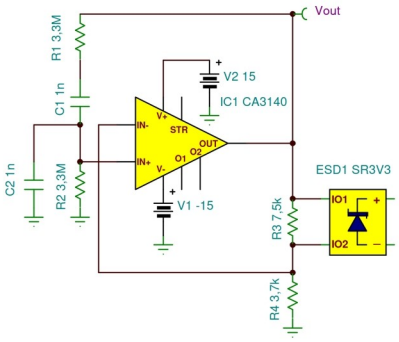


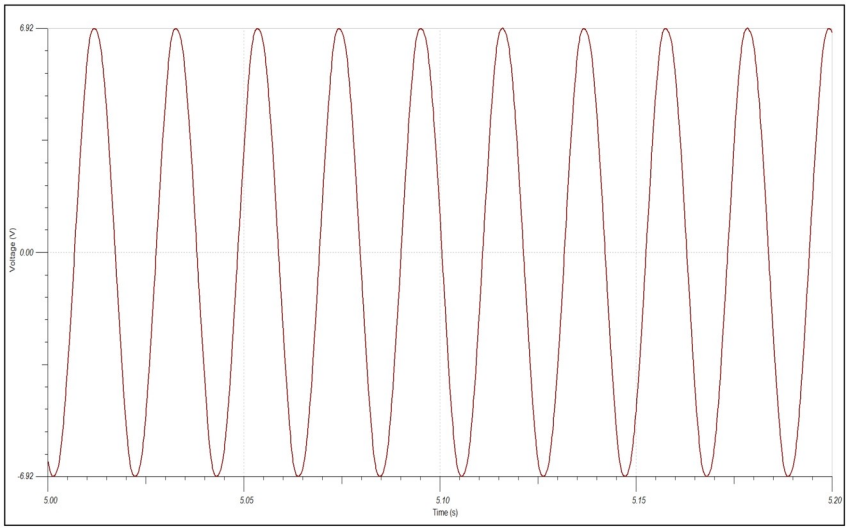
AC Characteristics:



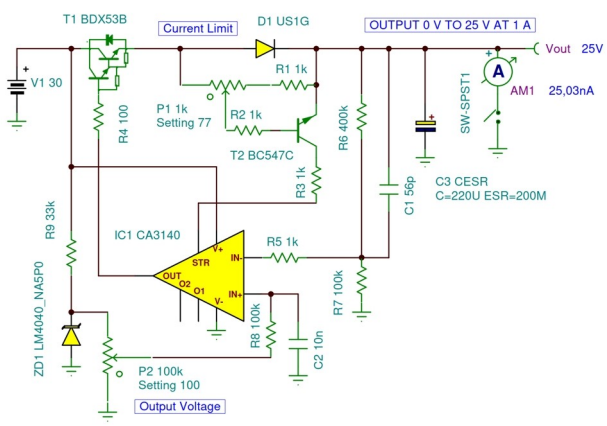


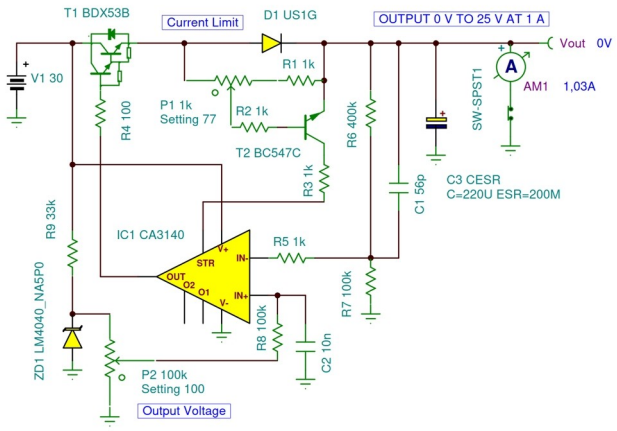
Wien Bridge Oscillator:





Regulated Power Supply:





Because there is constant loop gain at all voltage settings, the regulation also remains constant.

Zabb Csaba