

## LM148/LM248/LM348

### Quad 741 Op Amps

#### General Description

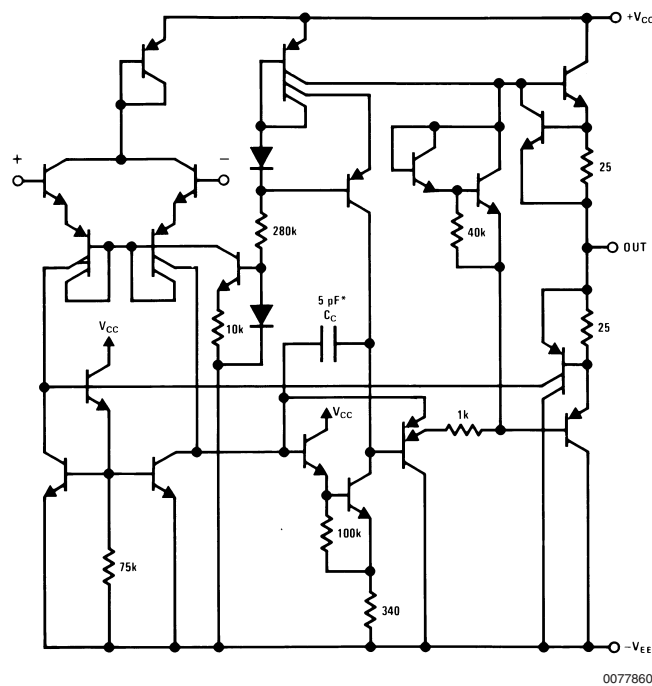
The LM148 series is a true quad 741. It consists of four independent, high gain, internally compensated, low power operational amplifiers which have been designed to provide functional characteristics identical to those of the familiar 741 operational amplifier. In addition the total supply current for all four amplifiers is comparable to the supply current of a single 741 type op amp. Other features include input offset currents and input bias current which are much less than those of a standard 741. Also, excellent isolation between amplifiers has been achieved by independently biasing each amplifier and using layout techniques which minimize thermal coupling.

The LM148 can be used anywhere multiple 741 or 1558 type amplifiers are being used and in applications where amplifier matching or high packing density is required. For lower power refer to LF444.

#### Features

- 741 op amp operating characteristics
- Class AB output stage—no crossover distortion
- Pin compatible with the LM124
- Overload protection for inputs and outputs
- Low supply current drain: 0.6 mA/Amplifier
- Low input offset voltage: 1 mV
- Low input offset current: 4 nA
- Low input bias current: 30 nA
- High degree of isolation between amplifiers: 120 dB
- Gain bandwidth product
- LM148 (unity gain): 1.0 MHz

#### Schematic Diagram



\* 1 pF in the LM149