



## LM3900 quad amplifier

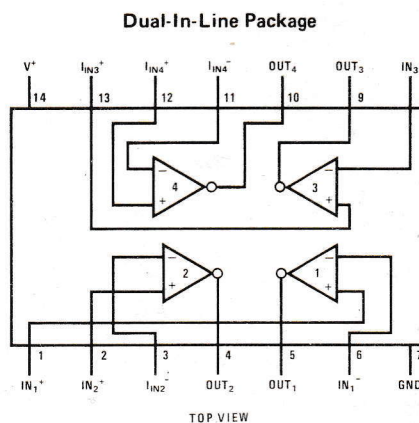
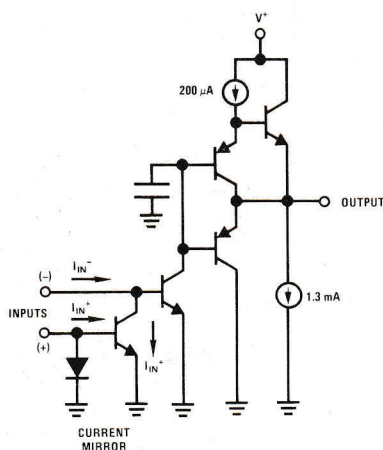
### general description

The LM3900 consists of four independent, dual input, internally compensated amplifiers which were designed specifically to operate off of a single power supply voltage and to provide a large output voltage swing. These amplifiers make use of a current mirror to achieve the non-inverting input function. Application areas include: AC amplifiers, RC active filters; low frequency triangle, squarewave and pulse waveform generation circuits, tachometers and low speed, high voltage digital logic gates.

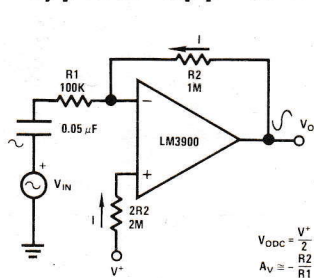
### features

- Wide single supply voltage range  $4 V_{DC}$  to  $36 V_{DC}$   
or dual supplies  $\pm 2 V_{DC}$  to  $\pm 18 V_{DC}$
- Supply current drain independent of supply voltage
- Low input biasing current 30 nA
- High open-loop gain 70 dB
- Wide bandwidth 2.5 MHz (Unity Gain)
- Large output voltage swing  $(V^+ - 1) V_{p-p}$
- Internally frequency compensated for unity gain
- Output short-circuit protection

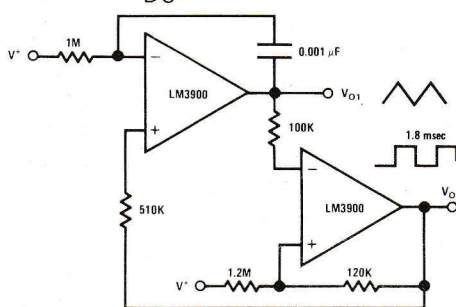
### schematic and connection diagrams



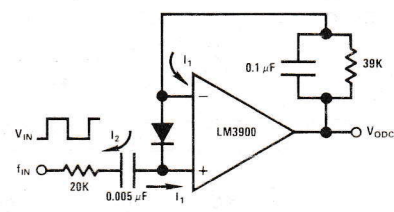
### typical applications ( $V^+ = 15V_{DC}$ )



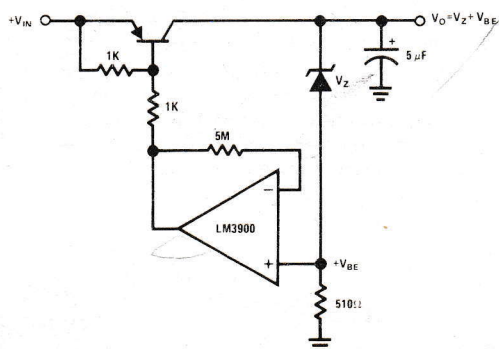
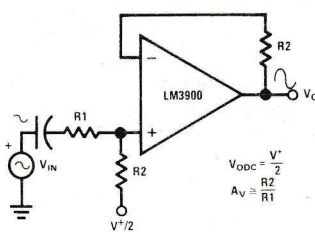
Inverting Amplifier



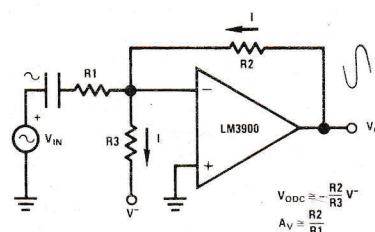
Triangle/Square Generator



Frequency-Doubling Tachometer

Low  $V_{IN}$ - $V_{OUT}$  Voltage Regulator

Non-Inverting Amplifier



Negative Supply Biasing