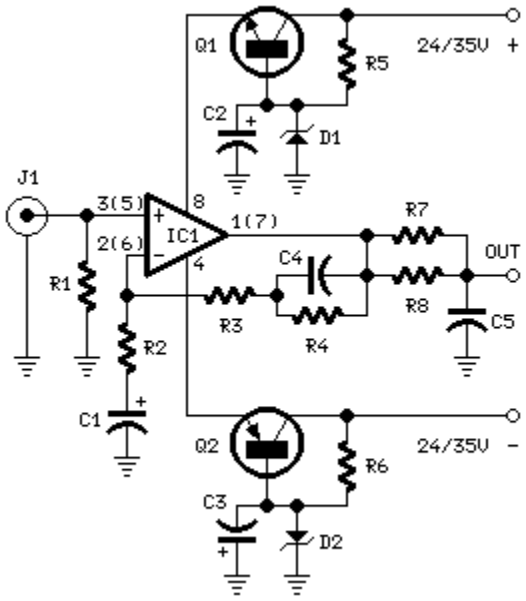
Phono Preamplifier

Simple circuitry suitable for moving-magnet cartridges
Passive high-frequency equalization

Circuit diagram:



Parts:

```
R1_________47K   1/4W Resistor
R2________100R   1/4W Resistor
R3_________6K8   1/4W Resistor
R4_________68K   1/4W Resistor
R5,R6______2K7   1/4W Resistor
R7_________2K2   1/4W Resistor
R8_________39K   1/4W Resistor

C1-C3_____100µF  25V Electrolytic Capacitors
C4,C5_____47nF   63V Polyester Capacitors 5% tolerance

D1,D2__BZX79C18  18V 500mW Zener Diodes

IC1_______LM833  Low noise Dual Op-amp

Q1________BC337  45V 800mA NPN Transistor
Q2________BC327  45V 800mA PNP Transistor
```

```
J1__________RCA  audio input socket
```

Comments:

In recent years, following CD's introduction, vinyl recordings are almost disappeared. Nevertheless, a phono preamplifier is still useful for listening old vinyl discs from a well preserved collection. This simple but efficient circuit devised for cheap moving-magnet cartridges, can be used in connection with both audio power amplifiers shown in preceding pages, featuring low noise, good RIAA frequency response curve, low distortion and good high frequency transients behaviour due to passive equalization in the 1 to 20KHz range. Transistors and associated components provide ± 18V supply to the op-amp, improving headroom and maximum output voltage.

Notes:

- R2, R3, R4, R7, R8, C4 & C5 should be low tolerance types.
- Schematic shows left channel and power supply.
- For stereo operation R1, R2, R3, R4, R7, R8; J1; C1, C4 & C5 must be doubled.
- Numbers in parentheses show IC1 right channel pin connections.

Technical data:

Sensitivity @ 1KHz: 2.5mV RMS input for 200mV RMS output

Max. input voltage @ 1KHz: 120mV RMS
Max. input voltage @ 10KHz: 141mV RMS
Max. input voltage @ 20KHz: 127mV RMS

Frequency response @ 1V RMS output: 100Hz to 20KHz ± 0.5dB; -0.75dB @ 30Hz

Total harmonic distortion @ 1KHz and 6V RMS output: 0.006%
Total harmonic distortion @10KHz and 1V RMS output: 0.02%
