



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089
<http://www.nteinc.com>

NTE734 Integrated Circuit TV FM IF Gain Block

Description:

The NTE734 F–M gain block linear monolithic integrated circuit is designed for use in communications and high fidelity f–m receivers. This device consists of a three–stage limiting amplifier section, a regulated powersupply, an a–m detector and 330 ohm input and output terminations with 7pF shunting capacitance required foer 10.7MHz ceramic filters. Gain can be adjusted without effect on input and output conditions by addition of a fixed resistor between pins 3 and 7.

Absolute Maximum Ratings:

Supply Current, I_{CC} 22mA
 Supply Voltage, V_{CC} 16V
 Input Voltage (Pin 1 & 3) $\pm 3.0V$
 Internal Power Consumption (Note 1), P_O 750mW
 Operating Temperature Range, T_{opr} -40° to $+85^\circ C$
 Storage Temperature Range, T_{stg} -65° to $+150^\circ C$

Note 1. Derate at the rate of 8.3mW/ $^\circ C$ at temperature above $+25^\circ C$

Static Electrical Characteristics: ($T_A = +25^\circ C$, $V_{CC} = +12V$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|-----------------------------|------------|-----------------|-----|-----|-----|----------|
| Supply Voltage | V_8 | Operating Range | 8 | 12 | 16 | V |
| Supply Current | I_{CC} | | 14 | 18 | 22 | mA |
| Input Impedance | | | | | | |
| Parallel Input Resistance | X_{Rin} | | 270 | 330 | 390 | Ω |
| Parallel Input Capacitance | X_{Cin} | | – | 7 | – | pF |
| Output Impedance | | | | | | |
| Parallel Output Resistance | X_{Rout} | | 270 | 330 | 390 | Ω |
| Parallel Output Capacitance | X_{Cout} | | 5 | 7 | 10 | pF |
| Total Device Dissipation | P_d | | – | – | 400 | mW |
| Terminal Voltage (Note 2) | V_1 | | – | 1.4 | – | V |
| | V_2 | | – | 1.4 | – | V |
| | V_3 | | – | 2.8 | – | V |
| | V_5 | | – | 2.4 | – | V |
| | V_6 | | – | 1.8 | – | V |

Note 2. All d–c voltage readings are with respect to network ground

Dynamic Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{CC} = +12\text{V}$, $f = 10.7\text{MHz}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------|--------------|---|-----|------|-----|-------------------|
| Input Limiting Threshold | V_{TH} | -3dB, 330 Ω Load and Source | - | 1200 | - | μV |
| Output Voltage Swing | V_{OM} | | - | 0.7 | - | V_{p-p} |
| Output Noise Voltage | | 330 Ω Load and Source | - | 4 | - | mV_{rms} |
| Output Voltage Gain | A_{Vout} | $V_{in} = 100\text{mV}_{rms}$, $f = 1\text{MHz}$ | 43 | 47 | 53 | dB |
| Power Supply Rejection | V_{SR} | $V_{in} = 250\text{mV}_{rms}$, $f = 100\text{Hz}$ (Note 3) | - | -37 | - | dB |
| Detector Output Voltage Change | ΔV_6 | $V_{in} = 15\text{mV}_{rms}$ at 1MHz with 50% 1kHz modulation | - | 100 | - | mV_{p-p} |

Note 3. Add 22dB attenuation at input.

