



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 for 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°C
Storage Temperature Range, $T_{stg}$ .....	-65° to +150°C

Note 1. Derate at the rate of 8.3mW/°C at temperature above +25°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, 330Ω Load and Source	-	1200	-	μV
Output Voltage Swing	$V_{OM}$		-	0.7	-	$\text{V}_{\text{p-p}}$
Output Noise Voltage		330Ω Load and Source	-	4	-	$\text{mV}_{\text{rms}}$
Output Voltage Gain	$A_{V_{\text{out}}}$	$V_{in} = 100\text{mV}_{\text{rms}}$ , $f = 1\text{MHz}$	43	47	53	dB
Power Supply Rejection	$V_{SR}$	$V_{in} = 250\text{mV}_{\text{rms}}$ , $f = 100\text{Hz}$ (Note 3)	-	-37	-	dB
Detector Output Voltage Change	$\Delta V_6$	$V_{in} = 15\text{mV}_{\text{rms}}$ at 1MHz with 50% 1kHz modulation	-	100	-	$\text{mV}_{\text{p-p}}$

Note 3. Add 22dB attenuation at input.

