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NTE734
Integrated Circuit
TV FM IF Gain Block

Description:

The NTE734 F–M gain block linear monolithic integrated circuit is designed for use in communicatios 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) . . . . . ±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°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°C, V_{CC} = +12V, f = 10.7MHz 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	–	V_{p-p}
Output Noise Voltage		330Ω Load and Source	–	4	–	$_mV_{rms}$
Output Voltage Gain	A_{Vout}	V_{in} = 100$_mV_{rms}$, f = 1MHz	43	47	53	dB
Power Supply Rejection	V_{SR}	V_{in} = 250$_mV_{rms}$, f = 100Hz (Note 3)	–	−37	–	dB
Detector Output Voltage Change	ΔV_6	V_{in} = 15$_mV_{rms}$ at 1MHz with 50% 1kHz modulation	–	100	–	$_mV_{p-p}$

Note 3. Add 22dB attenuation at input.

Pin Connection Diagram