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NTE1234 Integrated Circuit FM IF Amplifier

Description:

The NTE1234 is designed for use in FM IF and TV sound IF amp applications. This device contains 3 different stage differential IF amp and a differential peak detector function.

Features:

- Excellent AM Rejection: (AMR = 50db typ.)
- High Sensitivity: ($V_{IN(lim)}$ = 50dB μ V typ.)
- Operating Supply Voltage Range: (V_{CC} = 8 to 15V, THD = 0.2% typ.)
- High Recovered Output Voltage: (V_{OD} = 430mV typ. \pm 75kHz, dev.)
- Low Distortion: (THD = 0.2% typ. 500mV typ. Δ f = \pm 75kHz, dev.)

Absolute Maximum Ratings: (T_A = +25°C, unless otherwise specified)

Supply Voltage, V_{CC} ,	15V
Input Voltage, V_{IN}	0.7Vrms
Power Dissipation (Note 1), P_D	400mW
Operating Temperature Range, T_{opg}	-20° to +75°C
Storage Temperature Range, T_{stg}	-55° to +125°C

Note 1. Derate above +25°C in this proportion of 4/mW/°C.

Electrical Characteristics: (T_A = +25°C, V_{CC} = 12V, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Current	I_{CC}	$V_{IN} = 0$	8	11	15	mA
Output Terminal DC Voltage (Pin 7)	V_7	$V_{IN} = 0$, Short Pin 5,6	4.0	4.8	5.5	V
Recovered Output Voltage	V_{OD}	f = 10.7MHz, $f_M = 400$ Hz, Δ f = \pm 75kHz dev., $V_{IN} = 80$ dB μ V	300	500	700	mV _{rms}
Input Limiting Voltage	$V_{IN(lim)}$	f = 10.7MHz, $f_M = 400$ Hz, Δ f = \pm 22kHz dev., -3dB limiting	-	50	55	dB μ V
Total Harmonic Distortion	THD	f = 10.7MHz, $f_M = 400$ Hz, Δ f = \pm 22kHz dev., $V_{IN} = 80$ dB μ V	-	0.2	-	%
Signal to Noise Ratio	S/N	f = 10.7MHz, $f_M = 400$ Hz, Δ f = \pm 22kHz - 0 kHz $V_{IN} = 80$ dB μ V	-	60	-	dB
AM Rejection Ratio	AMR	f = 10.7MHz, $f_M = 400$ Hz, $V_{IN} = 80$ dB μ V, FM: 75kHz dev, AM: 30% MOD	-	50	-	dB

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Resistance	R_O	$f = 400\text{MHz}$, Pin 7 - GND	6.2	7.7	9.5	$k\Omega$
Input Impedance Parallel Resistance	r_{ip}	$f = 10.7\text{MHz}$, Pin 1 - GND	-	5	-	$k\Omega$
Parallel Capacitance	c_{ip}		-	4.5	-	pF
Output Impedance Parallel Resistance	r_{op}	$f = 10.7\text{MHz}$, Pin 5 - GND	-	1.3	-	$k\Omega$
Parallel Capacitance	c_{op}		-	4	-	pF

Pin Connection Diagram

