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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 $\mu$ 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.  $\Delta$ 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, $\Delta$ f = $\pm$ 75kHz dev., $V_{IN} = 80$ dB $\mu$ V	300	500	700	mV <sub>rms</sub>
Input Limiting Voltage	$V_{IN(lim)}$	f = 10.7MHz, $f_M = 400$ Hz, $\Delta$ f = $\pm$ 22kHz dev., -3dB limiting	-	50	55	dB $\mu$ V
Total Harmonic Distortion	THD	f = 10.7MHz, $f_M = 400$ Hz, $\Delta$ f = $\pm$ 22kHz dev., $V_{IN} = 80$ dB $\mu$ V	-	0.2	-	%
Signal to Noise Ratio	S/N	f = 10.7MHz, $f_M = 400$ Hz, $\Delta$ f = $\pm$ 22kHz - 0 kHz $V_{IN} = 80$ dB $\mu$ V	-	60	-	dB
AM Rejection Ratio	AMR	f = 10.7MHz, $f_M = 400$ Hz, $V_{IN} = 80$ dB $\mu$ 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**

