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## NTE1301 Integrated Circuit AM/FM IF

**Description:**

The NTE1301 is a silicon monolithic integrated circuit in a 7-Lead SIP type package designed for the AM/FM IF amplifier of a radio receiver. Two differential amplifiers and an AGC circuit perform good limiting quality for FM operation and good AGC characteristics for AM operation.

**Features:**

- Structure: Silicon Monolithic Integrated Circuit
- Applications: AM-IF, FM-IF, AM-AGC

**Absolute Maximum Ratings:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Supply Voltage,  $V_{CC}$  ..... 5V  
 Operating Temperature Range,  $T_{opt}$  .....  $-15^\circ$  to  $+60^\circ\text{C}$   
 Storage Temperature Range,  $T_{stg}$  .....  $-50^\circ$  to  $+125^\circ\text{C}$

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$ ,  $V_{CC} = 4\text{V}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Current	$I_D$	No Signal	6.5	9.5	12.5	mA
Transfer Conductance	$g_m$	$f = 455\text{kHz}$ (CW), $V_i = 1\text{mV}$	162	260	418	$\text{m}\Omega$
		$f = 455\text{kHz}$ (CW), $V_i = 1\text{mV}$ , $V_{CC} = 2.66\text{V}$	90	160	308	$\text{M}\Omega$
		$f = 10.7\text{MHz}$ (CW), $V_i = 1\text{mV}$ (Dev = 22.5kHz, $f_M = 1\text{kHz}$ )	162	250	396	$\text{m}\Omega$
Noise Level	$V_N$	$f = 455\text{kHz}$ (CW), $V_i = 80\text{dB}\mu$ , $V_2 = 0\text{V}$	-	-78	-70	dBs
Output Level (FM)	$V_O$	$f = 10.7\text{Mhz}$ (Dev = 22.5kHz, $f_M = 1\text{kHz}$ ), $V_i = 100\text{dB}$	-29	-26	-23	dBs
Differential Amp 1 Output	$V_M$	$f = 10.7\text{MHz}$ , $V_i = 100\text{dB}$ , $V_{CC} = 2.66\text{V}$ (Dev = 22.5kHz, $f_M = 1\text{kHz}$ )	252	350	473	mV
Output Level (AM)	AGC	$f = 455\text{kHz}$ , $V_i = 53\text{dB}\mu$ , $V_2 = 0.8\text{V}$ , $R_g = 1\text{k}\Omega$ (MOD 30%, 1kHz)	-32	-28	-23	dBs
		$f = 455\text{kHz}$ , $V_i = 53\text{dB}\mu$ , $V_2 = 0.8\text{V}$ , $V_{CC} = 2.66\text{V}$ , $R_g = 1\text{k}\Omega$ (MOD 30%, 1kHz)	-37	-31	-24	dBs
		$f = 455\text{kHz}$ , $V_i = 97\text{dB}\mu$ , $V_2 = 0\text{V}$ , $R_g = 1\text{k}\Omega$ (MOD 30%, 1kHz)	-41	-27	-14	dBs
		$f = 455\text{kHz}$ , $V_i = 97\text{dB}\mu$ , $V_2 = 0\text{V}$ , $V_{CC} = 2.66\text{V}$ , $R_g = 1\text{k}\Omega$ (MOD 30%, 1kHz)	-	-32	-19	dBs
Output Level (AM)	$V_{Det}$	$f = 455\text{kHz}$ , $V_i = 67\text{dB}\mu$ , $V_{CC} = 1.8\text{V}$ (MOD 30%, 1kHz)	-41	-34	-	dBs

**Pin Connection Diagram**  
(Front View)

