

## NTE708 Integrated Circuit TV/FM Sound IF Amplifier

**Features:**

- Greatly Simplifier FM Demodulator Alignment
- Excellent Performance at  $V_+ = 8V$

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

Power Supply Voltage .....	16V
Peak Input Voltage (Pin4) .....	3.5V
Power Dissipation ( $T_A = +25^\circ C$ ), $P_D$ .....	625mW
Derate Above $25^\circ C$ .....	5mW/ $^\circ C$
Operating Ambient Temperature Range, $T_{opr}$ .....	$0^\circ$ to $+75^\circ C$
Storage Temperature Range, $T_{stg}$ .....	$-65^\circ$ to $+150^\circ C$

**Electrical Characteristics:** ( $V_+ = 12V$ ,  $T_A = +25^\circ C$  unless otherwise specified)

Parameter	Pin	Test Conditions	Min	Typ	Max	Unit
Drain Current	13	$V_+ = 8V$	10	12	19	mA
		$V_+ = 12V$	–	15	21	mA
Amplifier Input Reference Voltage	6		–	1.45	–	V
Detector Input Reference Voltage	2		–	3.65	–	V
Amplifier High Level Output Voltage	10		1.25	1.45	1.65	V
Amplifier Low Level Output Voltage	9		–	0.145	0.2	V
Detector Output Voltage	1	$V_+ = 8V$	–	3.7	–	V
		$V_+ = 12V$	–	5.4	–	V
Amplifier Input Resistance	4		–	5.0	–	k $\Omega$
Amplifier Input Capacitance	4		–	11	–	pF
Detector Input Resistance	12		–	70	–	k $\Omega$
Detector Input Capacitance	12		–	2.7	–	pF
Amplifier Output Resistance	10		–	60	–	$\Omega$
Detector Output Resistance	1		–	200	–	$\Omega$
De-Emphasis Resistance	14		–	8.8	–	k $\Omega$

**Dynamic Characteristics:** (FM Modulation Freq = 1kHz, Source Resistance = 50Ω, T<sub>A</sub> = +25°C for all tests)

Parameter	Pin	Test Conditions	Min	Typ	Max	Unit
(V <sub>+</sub> = 12V, f <sub>o</sub> = 4.5MHz, Δf = ±25kHz, Peak Separation = 150kHz)						
Amplifier Voltage Gain	10	V <sub>in</sub> ≤ 50μV <sub>rms</sub>	–	60	–	dB
AM Rejection	1	V <sub>in</sub> = 10mV <sub>rms</sub> , Note 1	–	36	–	dB
Input Limiting Threshold Voltage	4		–	250	–	μV <sub>rms</sub>
Recovered Audio Output Voltage	1	V <sub>in</sub> = 10mV <sub>rms</sub>	–	0.72	–	V <sub>rms</sub>
Output Distortion	1	V <sub>in</sub> = 10mV <sub>rms</sub>	–	3	–	%
(V <sub>+</sub> = 12V, f <sub>o</sub> = 5.5MHz, Δf = ±50kHz, Peak Separation = 260kHz)						
Amplifier Voltage Gain	10	V <sub>in</sub> ≤ 50μV <sub>rms</sub>	–	60	–	dB
AM Rejection	1	V <sub>in</sub> = 10mV <sub>rms</sub> , Note 1	–	40	–	dB
Input Limiting Threshold Voltage	4		–	250	–	μV <sub>rms</sub>
Recovered Audio Output Voltage	1	V <sub>in</sub> = 10mV <sub>rms</sub>	–	1.2	–	V <sub>rms</sub>
Output Distortion	1	V <sub>in</sub> = 10mV <sub>rms</sub>	–	5	–	%
(V <sub>+</sub> = 8V, f <sub>o</sub> = 10.7MHz, Δf = ±75kHz, Peak Separation = 550kHz)						
Amplifier Voltage Gain	10	V <sub>in</sub> ≤ 50μV <sub>rms</sub>	–	53	–	dB
AM Rejection	1	V <sub>in</sub> = 10mV <sub>rms</sub> , Note 1	–	37	–	dB
Input Limiting Threshold Voltage	4		–	600	–	μV <sub>rms</sub>
Recovered Audio Output Voltage	1	V <sub>in</sub> = 10mV <sub>rms</sub>	–	0.3	–	V <sub>rms</sub>
Output Distortion	1	V <sub>in</sub> = 10mV <sub>rms</sub>	–	1.4	–	%
(V <sub>+</sub> = 12V, f <sub>o</sub> = 10.7MHz, Δf = ±75kHz, Peak Separation = 550kHz)						
Amplifier Voltage Gain	10	V <sub>in</sub> ≤ 50μV <sub>rms</sub>	–	53	–	dB
AM Rejection	1	V <sub>in</sub> = 10mV <sub>rms</sub> , Note 1	–	45	–	dB
Input Limiting Threshold Voltage	4		–	600	–	μV <sub>rms</sub>
Recovered Audio Output Voltage	1	V <sub>in</sub> = 10mV <sub>rms</sub>	–	0.48	–	V <sub>rms</sub>
Output Distortion	1	V <sub>in</sub> = 10mV <sub>rms</sub>	–	1.4	–	%

Note 1. 100% FM, 30% AM Modulation.



