

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° to $+75^\circ C$
Storage Temperature Range, T_{stg}	-65° 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 Ω
Amplifier Input Capacitance	4		–	11	–	pF
Detector Input Resistance	12		–	70	–	k Ω
Detector Input Capacitance	12		–	2.7	–	pF
Amplifier Output Resistance	10		–	60	–	Ω
Detector Output Resistance	1		–	200	–	Ω
De-Emphasis Resistance	14		–	8.8	–	k Ω

Dynamic Characteristics: (FM Modulation Freq = 1kHz, Source Resistance = 50Ω, T_A = +25°C for all tests)

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

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



