



ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748-5089
<http://www.nteinc.com>

NTE1236 **Integrated Circuit** **TV Sound IF System**

Description:

The NTE1236 monolithic TV/FM sound system consists of a multistage limiting IF amplifier, DC gain control, FM detector, and an audio driver constructed on a single silicon chip. Excellent sensitivity, high AM rejection and an internally regulated power supply coupled with low external component requirements makes the NTE1236 suitable for a wide variety of applications including TV sound channels, FM radios and mobile communications equipment.

Features:

- Electronic Attenuator Replaces Conventional Volume Control
- High Sensitivity
- Low Harmonic Distortion
- Excellent AM Rejection: (5-dB typ. at 4.5MHz)
- Internal Zener Diode Regulated Supply
- Differential Peak Detector Requires Only One Single-Turned Coil

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

Supply Voltage, V_{CC}	$\pm 3\text{V}$
Input Current, I_{CC}	30mA
Power Dissipation, P_D	625mW
Operating Temperature Range, T_{opg}	-20° to $+75^{\circ}\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+150^{\circ}\text{C}$

Note *. Pin 5 may be connected to any positive voltage through a suitable dropping resistor, provided the dissipation rating is not exceeded.

Note **. For temperatures above 25°C , derate linearly at $5.0\text{mW}/^{\circ}\text{C}$.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Supply Current	I_{CC}	$V_{CC} = 9\text{V}$	10	16	24	mA
Zener Regulating Characteristics	V_Z		10.3	11.2	12.2	V
Internal Power Dissipation	P_D		330	345	360	mW
Dynamic Characteristics						
Input Limiting Voltage at -3dB	$V_{IN(lim)}$	$f_o = 4.5\text{MHz}$, $f_M = 400\text{Hz}$, $\Delta f = \pm 25\text{kHz}$	–	200	400	μV
AM Rejection Ratio	AMR	$f = 4.5\text{MHz}$, FM: $\Delta f = \pm 25\text{kHz}$, AM: 30% @ 45MHz	40	50	–	dB
Recovered AF Voltage	V_{OD}	$f = 4.5\text{MHz}$, $V_I = 0.1\text{V}$, $\Delta f = \pm 25\text{kHz}$, $f_M = 400\text{Hz}$	0.5	0.75	–	V_{rms}
Total Harmonic Distortion	THD		–	0.9	2.0	%
Input Impedance Parallel Resistance	R_{ip}	Terminal No. 1–2 $f = 4.5\text{MHz}$	–	17	–	$k\Omega$
Parallel Capacitance	C_{ip}		–	4	–	pF
Output Impedance Parallel Resistance	R_{op}	Terminal No. 9–GND $f = 4.5\text{MHz}$	–	3.25	–	$k\Omega$
Parallel Capacitance	C_{op}		–	7.5	–	pF
Output Impedance Pin 7	z_o	$f = 400\text{Hz}$	–	7.5	–	$k\Omega$
Pin 8			–	300	–	Ω
Attenuation	ATT	$R_x = \infty$	60	80	–	dB
AF Voltage Gain	$G_{V(ATF)}$	$V_I = 0.1V_{rms}$, $f = 400\text{Hz}$	17.5	20	–	dB
Total Harmonic Distortion	THD(2)	$V_O = 2V_{rms}$, $f = 400\text{Hz}$	–	1.5	–	%
Undistorted Output Voltage	V_O	THD = 5%, $f = 400\text{Hz}$	2	2.5	–	V_{rms}
AF Input Resistance	R_I	$f = 400\text{Hz}$	–	70	–	$k\Omega$
AF Output Resistance	R_O		–	270	–	Ω

Pin Connection Diagram

