

NTE1232 Integrated Circuit Audio Amplifier for Car Radio, 8W

Description:

The NTE1232 is a Class B audio amplifier in a 5-Lead TO220 type package designed for driving low impedance loads (down to 1.6Ω). This device provides a high output current capability (up to 3.5A), very low harmonic and cross-over distortion.

Features:

- Low Number of External Components
- No Electrical Insulation Requirement
- Space and Cost Saving
- High Reliability
- Flexibility in Use
- Complete Safety During Operation due to Protection Against:
 - Short Circuit
 - Thermal Over Range
 - Fortuitous Open Ground
 - Polarity Inversion ($V_S = 12V$ Max)
 - Load Dump Voltage Surge

Absolute Maximum Ratings:

Peak Supply Voltage (50ms), V_S	40V
DC Supply Voltage, V_S	28V
Operating Supply Voltage, V_S	18V
Output Peak Current, I_O	
Repetitive	3.5A
Non-Repetitive	4.5A
Power Dissipation ($T_C = +90^\circ C$), P_{tot}	15W
Operating Junction Temperature Range, T_J	-40° to $+150^\circ C$
Storage Temperature Range, T_{stg}	-40° to $+150^\circ C$
Thermal Resistance, Junction-to-Case, R_{thJC}	$4^\circ C/W$ max

Electrical Characteristics: ($V_S = 14.4V$, $T_A = +25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
DC Characteristics							
Supply Voltage	V _S			8	–	18	V
Quiescent Output Voltage (Pin4)	V _O			6.4	7.2	8.0	V
Quiescent Drain Current (Pin5)	I _d			–	45	80	mA
AC Characteristics (G _V = 40dB)							
Output Power	P _O	d = 10%, f = 1kHz	R _L = 4Ω	4.8	5.2	–	W
			R _L = 2Ω	7.0	8.0	–	W
		V _S = 16V, d = 10%, f = 1kHz	R _L = 4Ω	–	6.5	–	W
			R _L = 2Ω	–	10	–	W
Input Saturation Voltage	V _{i(rms)}			600	–	–	mV
Input Sensitivity	V _i	f = 1kHz, P _O = 0.5W	R _L = 4Ω	–	15	–	mV
			R _L = 2Ω	–	11	–	mV
		f = 1kHz, P _O = 5.2W, R _L = 4Ω		–	55	–	mV
		f = 1kHz, P _O = 8W, R _L = 2Ω		–	50	–	mV
Frequency Response (–3dB)	B	R _L = 4Ω, P _O = 1W		40 to 15,000		Hz	
Distortion	d	f = 1kHz, P _O = 0.05 to 3.5W, R _L = 4Ω		–	0.2	–	%
		f = 1kHz, P _O = 0.05 to 5W, R _L = 2Ω		–	0.2	–	%
Input Resistance (Pin1)	R _i	f = 1kHz		70	150	–	kΩ
Voltage Gain (Open Loop)	G _V	f = 1kHz, R _L = 4Ω		–	80	–	dB
Voltage Gain (Closed Loop)	G _V	f = 1kHz, R _L = 4Ω		39.5	40.0	40.5	dB
Input Noise Voltage	e _N	Note 1		–	4	–	μV
Input Noise Current	i _N	Note 1		–	60	–	pA
Efficiency	η	P _O = 5.2W, R _L = 4Ω	f = 1kHz	–	68	–	%
		P _O = 8W, R _L = 2Ω		–	58	–	%
Supply Voltage Rejection	SVR	R _L = 4Ω, R _g = 10kΩ, f _{ripple} = 100Hz		30	35	–	dB

Note 1. Filter with noise bandwidth: 22Hz to 22kHz.

Pin Connection Diagram

