

NTE1390 & NTE1391 Integrated Circuit Audio Power Amplifier, 12W for Car Radio or Car Stereo

Features:

- High Gain: 51dB Typ., High Power Output: 12W Typ.
- Low Number of External Components Required
- Low Noise During Power ON/OFF Operation
- Soft Tonal Quality in Saturated Power Output
- Low Distortion Over Low to High Audio Frequency Range
- Low Residual Noise: $R_g = 0$
- Built-In Audio Muting Circuits: AC Mute & DC Mute
- Built-In Protection Circuits:
 - Thermal
 - Overvoltage and Surge Voltage
 - Load Short-Circuit Current Limiting
 - Output Pins DC Short-Circuit
- NTE1391 is Mirror Image Pinout of NTE1390

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

Maximum Supply Voltage, V_{CCmax}	
Quiescent (30sec)	25V
With Signal	18V
Supply Current, I_{10peak}	
Instantaneous Value Duty $\leq 5\%$, Pulse Width $\leq 1\text{ms}$ Flow-In Only	4.5A
Output Current, I_7, I_{9peak}	
Instantaneous Value Duty $\leq 5\%$, Pulse Width $\leq 1\text{ms}$	4.5A
Surge Supply Voltage ($t \leq 0.2\text{sec}$), V_{surge}	50V
Allowable Power Dissipation ($T_C = +75^\circ\text{C}$), P_{Dmax}	25W
Operating Temperature Range, T_{opr}	-20° to $+75^\circ\text{C}$
Storage Temperature Range, T_{stg}	-40° to $+150^\circ\text{C}$
Thermal Resistance, Junction-to-Case, R_{thJC}	3°C/W

Recommended Operating Conditions: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Recommended Supply Voltage, V_{CC}	13.2V
Load Resistance, R_L	4Ω to 8Ω

Electrical Characteristics: ($T_A = +25^{\circ}\text{C}$, $V_{CC} = 13.2\text{V}$, $R_L = 4\Omega$, $f = 1\text{kHz}$, $R_g = 600\Omega$, with $100 \times 100 \times 1.5\text{mm}^3$ Al Heat Sink unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Current	I_{CCO}		–	65	120	mA
Voltage Gain	VG	Closed Loop	49	51	53	dB
Output Power	P_O	THD = 10%	10	12	–	W
Total Harmonic Distortion	THD	$P_O = 1\text{W}$	–	0.1	1.0	%
Input Resistance	r_i		21	30	–	k Ω
Output Noise Voltage	$V_{NO\ 1}$	$R_g = 0$, $f = 20\text{Hz}$ to 20MHz , Band Pass Filter	–	0.4	1.0	mV
	$V_{NO\ 2}$	$R_g = 10\text{k}\Omega$, $f = 20\text{Hz}$ to 20MHz , Band Pass Filter	–	0.6	2.0	mV
Output Offset Voltage	V_{off}		–300	–	+300	mV
Muting Suppression (AC, Note 1)	A_{TT}	$v_o = 0\text{dBm}$, $V_M = 9\text{V}$	–	38	–	dB

Note 1. For DC muting, $A_{TT} = \infty$.



