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NTE7101 Integrated Circuit AF Power Amplifier, 7W

Description:

The NTE7101 is an audio power amplifier in an 8-Lead SIP type package designed for use in car radio and car stereo applications. This device features a low thermal resistance providing easy design for 2Ω load circuits and 4Ω load BTL circuits.

Features:

- High Output Power:
 - $P_O = 7W$ Typ @ $R_L = 4\Omega$, THD = 10%, $V_{CC} = 14.4V$
 - $P_O = 11W$ Typ @ $R_L = 2\Omega$, THD = 10%, $V_{CC} = 14.4V$
 - $P_O = 18W$ (Bridge) @ $R_L = 4\Omega$, THD = 10%, $V_{CC} = 14.4V$
- Low Distortion: THD = 0.1% Typ @ $R_L = 4\Omega$, $P_O = 500mW$
- High Reliability
- Protection Circuits Include:
 - Load Dump Voltage Surge
 - Thermal Overload
 - Output DC and AC Short Circuit to GND or V_{CC}
 - Reverse Insertion
- Minimum External Components Required

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

Surge Supply Voltage ($PW = 200ms$), $V_{CCsurge}$	50V
Quiescent Supply Voltage (Note 1), V_{CC1}	25V
Operational Supply Voltage, V_{CC2}	18V
Peak Circuit Current, I_{CCpeak}	4.5A
Power Dissipation, P_D	12W
Operating Temperature Range (Note 1), T_{opr}	-30° to +75°C
Storage Temperature Range, T_{stg}	-55° to +150°C

Note 1. Using an aluminum heat sink 100mm x 100mm x 1mm.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage Range	V_{CC}		9.5	-	16.0	V
Load Impedance	R_L		2	-	16	Ω

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $f = 1\text{kHz}$, $R_L = 4\Omega$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Circuit Current	I_{CC}	$v_{in} = 0$, $V_{CC} = 13.2\text{V}$	25	45	80	mA
Output Power	P_O	$R_L = 4\Omega$, THD = 10%, $V_{CC} = 13.2\text{V}$	5.0	5.8	–	W
		$R_L = 4\Omega$, THD = 10%, $V_{CC} = 14.4\text{V}$	–	7.0	–	W
		$R_L = 2\Omega$, THD = 10%, $V_{CC} = 13.2\text{V}$	–	9.2	–	W
		$R_L = 2\Omega$, THD = 10%, $V_{CC} = 14.4\text{V}$	–	11.0	–	W
Total Harmonic Distortion	THD	$R_L = 4\Omega$, $P_O = 500\text{mW}$, $V_{CC} = 13.2\text{V}$	–	0.1	1.0	%
		$R_L = 2\Omega$, $P_O = 1\text{W}$, $V_{CC} = 13.2\text{V}$	–	0.4	–	%
Voltage Gain	A_v	$P_O = 500\text{mW}$	49.0	51.5	54.0	dB
Output Noise Level	v_n	$R_G = 10\text{k}\Omega$	–	1.4	4.0	mV_{rms}

Pin Connection Diagram
(Front View)

