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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 = 4Ω, THD = 10%, V_{CC} = 14.4V
  P_O = 11W Typ @ R_L = 2Ω, THD = 10%, V_{CC} = 14.4V
  P_O = 18W (Bridge) @ R_L = 4Ω, THD = 10%, V_{CC} = 14.4V
- Low Distortion: THD = 0.1% Typ @ R_L = 4Ω, 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°C unless otherwise specified)

Surge Supply Voltage (PW = 200ms), V_{CC}surge 50V
Quiescent Supply Voltage (Note 1), V_{CC}1 . . . . . 25V
Operational Supply Voltage, V_{CC}2 . . . . . 18V
Peak Circuit Current, I_{CC}peak 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°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°C, f = 1kHz, R_L = 4Ω unless otherwise specified)

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

Pin Connection Diagram
(Front View)