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NTE1288
Integrated Circuit
Audio Power Amplifier, 10W
for Car Radio

Description:

The NTE1288 has improved performance with the same pin configuration as the NTE1232. The additional features of the NTE1232; very low number of external components, ease of assembly, space and cost saving, are maintained. The device provides a high output current capability (up to 3.5A), very low harmonic and cross distortion.

Complete safe operation is guaranteed due to protection against DC and AC short−circuit between all pins and GND, thermal over−range, load dump voltage surge up to 40V, polarity inversion and fortuitous open ground.

Absolute Maximum Ratings:

Peak Supply Voltage (50ms), V_{CC} 40V
DC Supply Voltage, V_{CC} 28V
OPerating Supply Voltage, V_{CC} 18V
Output Peak Current, I_O
  Repetitive 3.5A
  Non−Repetitive 4.5A
Power Dissipation (T_C = +90°C), P_{tot} 20W
Operating Junction Temperature Range, T_J . . . . . −40° to +150°C
Storage Temperature Range, T_{stg} . . . . . −40° to +150°C
Thermal Resistance, Junction−to−Case, R_{thJC} . . . . . 3°C/W

Static Characteristics: (T_A = +25°C, V_{CC} = 14.4V unless otherwise specified)

Parameter		Symbol	Min	Typ	Max	Unit
Supply Voltage		V_{CC}	8	–	18	V
Quisecnt Output Voltage	Pin4	V_O	6.1	6.9	7.7	V
Quiescent Drain Current	Pin5	I_{CC}	–	44	50	mA

Dynamic Characteristics: (T_A = +25°C, V_{CC} = 14.4V, A_V = 40dB unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Output Power	P_O	d = 10%, f = 1kHz	R_L = 4Ω	5.5	6.0	–	W
			R_L = 2Ω	9	10	–	W
			R_L = 3.2Ω	–	7.5	–	W
			R_L = 1.6Ω	–	12	–	W
Input Saturation Voltage	V_I			300	–	–	mV
Input Sensitivity	S	f = 1kHz, P_O = 500mW, R_L = 4Ω		–	14	–	mV
		P_O = 6W, R_L = 4Ω		–	55	–	mV
		P_O = 500mW, R_L = 2Ω		–	10	–	mV
		P_O = 10W, R_L = 2Ω		–	50	–	mV
Bandwidth (–3dB)	B	P_O = 1W, R_L = 4Ω		40 to 15,000			Hz
Harmonic Distortion	d	50mW ≤ P_O ≤ 4.5W, R_L = 4Ω, f = 1kHz		–	0.15	–	%
		50mW ≤ P_O ≤ 7.5W, R_L = 2Ω, f = 1kHz		–	0.15	–	%
Input Resistance (Pin1)	R_I	f = 1kHz		70	150	–	kΩ
Voltage Gain Open Loop	A_V	R_L = 4Ω, f = 1kHz		–	80	–	dB
Closed Loop				39.5	40.0	40.5	dB
Input Noise Voltage	V_n	B (–3dB) = 10Hz to 25kHz, B (–20dB) = 4Hz to 27kHz		–	1	5	μV
Input Noise Current	i_n	B (–3dB) = 10Hz to 25kHz, B (–20dB) = 4Hz to 27kHz		–	60	200	pA
Efficiency	η	f = 1kHz, P_O = 6W, R_L = 4Ω		–	69	–	%
		P_O = 10W, R_L = 2Ω		–	65	–	%
Supply Voltage Rejection	SVR	f = 100Hz, V_{ripple} = 500mV, R_G = 10kΩ, R_L = 4Ω		30	36	–	dB

Pin Connection Diagram