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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 ($T_C = +90^\circ\text{C}$), 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
Quiescent Output Voltage	V _O	6.1	6.9	7.7	V
Quiescent Drain Current	I _{CC}	-	44	50	mA

Dynamic Characteristics: ($T_A = +25^\circ\text{C}$, $V_{CC} = 14.4\text{V}$, $A_V = 40\text{dB}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Power	P_O	$d = 10\%$, $f = 1\text{kHz}$	$R_L = 4\Omega$	5.5	6.0	—
			$R_L = 2\Omega$	9	10	—
			$R_L = 3.2\Omega$	—	7.5	—
			$R_L = 1.6\Omega$	—	12	—
Input Saturation Voltage	V_I		300	—	—	mV
Input Sensitivity	S	$f = 1\text{kHz}$, $P_O = 500\text{mW}$, $R_L = 4\Omega$	—	14	—	mV
		$P_O = 6\text{W}$, $R_L = 4\Omega$	—	55	—	mV
		$P_O = 500\text{mW}$, $R_L = 2\Omega$	—	10	—	mV
		$P_O = 10\text{W}$, $R_L = 2\Omega$	—	50	—	mV
Bandwidth (-3dB)	B	$P_O = 1\text{W}$, $R_L = 4\Omega$	40 to 15,000			Hz
Harmonic Distortion	d	$50\text{mW} \leq P_O \leq 4.5\text{W}$, $R_L = 4\Omega$, $f = 1\text{kHz}$	—	0.15	—	%
		$50\text{mW} \leq P_O \leq 7.5\text{W}$, $R_L = 2\Omega$, $f = 1\text{kHz}$	—	0.15	—	%
Input Resistance (Pin1)	R_I	$f = 1\text{kHz}$	70	150	—	$\text{k}\Omega$
Voltage Gain Open Loop	A_V	$R_L = 4\Omega$, $f = 1\text{kHz}$	—	80	—	dB
			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	$f = 1\text{kHz}$, $P_O = 6\text{W}$, $R_L = 4\Omega$	—	69	—	%
		$P_O = 10\text{W}$, $R_L = 2\Omega$	—	65	—	%
Supply Voltage Rejection	SVR	$f = 100\text{Hz}$, $V_{\text{ripple}} = 500\text{mV}$, $R_G = 10\text{k}\Omega$, $R_L = 4\Omega$	30	36	—	dB

