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NTE7145 Integrated Circuit 18W BTL x 2 Ch Audio Power Amplifier

Description:

The NTE7145 is a stereo audio power IC in a 17-Lead Staggered SIP type package designed for car audio use. This device has 2 built-in channels to reduce the characteristics difference between L and R channels. In addition, the functions of stand-by, muting, and a variety of protections circuits are involved.

Features:

- High Power:
 - $P_{OUT(1)} = 18W$ (Typ)/Channel ($V_{CC} = 14.4V$, $f = 1kHz$, $THD = 10%$, $R_L = 4\Omega$)
 - $P_{OUT(2)} = 15W$ (Typ)/Channel ($V_{CC} = 13.2V$, $f = 1kHz$, $THD = 10%$, $R_L = 4\Omega$)
- Low Distortion Ratio:
 - $THD = 0.04%$ (Typ) ($V_{CC} = 13.2V$, $f = 1kHz$, $P_{OUT} = 1W$, $R_L = 4\Omega$, $G_V = 50dB$)
- Low Noise:
 - $V_{NO} = 0.30mV_{rms}$ (Typ) ($V_{CC} = 13.2V$, $R_L = 4\Omega$, $G_V = 50dB$, $R_g = 0\Omega$, $BW = 20Hz$ to $20kHz$)
- Built-In Stand-By Function (With Pin4 set at Low, Power is Turned OFF):
 - $I_{SB} = 1\mu A$ (Typ)
- Built-In Muting Function (With Pin1 set at Low, Power is Turned OFF):
 - V (Mute) = $1V$ (Typ)
- Built-In Various Protection Circuits:
 - Thermal Shut Down
 - Overvoltage
 - OUT→ V_{CC} Short
 - OUT→GND Short
 - OUT-OUT Short
- Operating Supply Voltage: $V_{CC} = 9V$ to $18V$

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

Peak Supply Voltage (0.2s), $V_{CCsurge}$	50V
DC Supply Voltage, V_{CCDC}	25V
Operating Supply Voltage, V_{CCopr}	18V
Output Current (Peak), $I_{O(peak)}$	9A
Power Dissipation, P_D	50W
Operating Temperature Range, T_{opr}	-30° to $+85^\circ C$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ C$

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{CC} = 13.2\text{V}$, $R_L = 4\Omega$, $f = 1\text{kHz}$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Supply Current	I_{CCQ}	$V_{IN} = 0$	–	120	250	mA
Output Power	P_{OUT}	$V_{CC} = 14.4\text{V}$, THD = 10%	–	18	–	W
		THD = 10%	11	15	–	W
Total Harmonic Distortion	THD	$P_{OUT} = 1\text{W}$	–	0.04	0.4	%
Voltage Gain	G_V		48	50	52	dB
Output Noise Voltage	V_{NO}	$R_g = 0\Omega$, BW = 20Hz to 20kHz	–	0.3	0.7	mV _{rms}
Ripple Rejection Ratio	RR	$f_{ripple} = 100\text{Hz}$, $R_g = 600\Omega$	40	54	–	dB
Input Resistance	R_{IN}		–	30	–	k Ω
Output Offset Voltage	V_{offset}	$V_{IN} = 0$	–0.3	0	+0.3	V
Current at Stand-By State	I_{SB}		–	1	10	μA
Crosstalk	CT	$R_g = 600\Omega$, $V_{OUT} = 0.775V_{rms}$ (0dBm)	–	60	–	dB
Pin4 Control Voltage	$V_{(SB)}$	Stand-By→OFF (Power→ON)	2.5	–	V_{CC}	V
Pin1 Control Voltage	$V_{(MUTE)}$	Mute→ON (Power→OFF)	–	1.0	2.0	V

Pin Connection Diagram
(Front View)

17	Power V_{CC2}
16	Output 2
15	Output 1
14	GND 1
13	GND 2
12	Output 4
11	Output 3
10	Power V_{CC1}
9	Pre- V_{CC}
8	Ripple
7	Input 2
6	NF 2
5	Pre-GND
4	Stand-By Switch
3	NF 1
2	Input 1
1	Mute Switch

