NTE7155
Integrated Circuit
Dual Low–Voltage Power Amplifier

Description:

The NTE7155 is a monolithic integrated circuit in an 8–Lead DIP type package designed for use as a dual audio power amplifier in portable cassette players and radios.

Features:

- Supply Voltage Down To 1.8V
- Low Crossover Distortion
- Low Quiescent Current
- Bridge or Stereo Configuration

Absolute Maximum Ratings:

Supply Voltage, V_S 15V

Peak Output Current, I_O 1A

Total Power Dissipation, P_D
T_A = +50°C 1.0W
T_C = +50°C 1.4W

Operating Junction Temperature Range, T_J . . . . –40° to +150°C

Storage Temperature Range, T_{stg} . . . . –40° to +150°C

Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . 100°C/W

Thermal Resistance, Junction–to–Case (Pin4), R_{thJC} . . . . 70°C/W

Electrical Charactgeristics: (V_S = 6V, T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Stereo						
Supply Voltage	V_S		1.8	–	15	V
Quiescent Output Voltage	V_O		–	2.7	–	V
		V_S = 3V	–	1.2	–	V
Quiescent Drain Current	I_D		–	6	9	mA
Input Bias Current	I_B		–	100	–	nA

Electrical Charactgeristics (Cont'd): (V_S = 6V, T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Stereo (Cont'd)							
Output Power (Each Channel) (f = 1kHz, d = 10%)	P_O	$R_L = 32\Omega$	$V_S = 9V$	–	300	–	mW
			$V_S = 6V$	90	120	–	mW
			$V_S = 4.5V$	–	60	–	mW
			$V_S = 3V$	15	20	–	mW
			$V_S = 2V$	–	5	–	mW
		$R_L = 16\Omega$	$V_S = 6V$	170	220	–	mW
		$R_L = 8\Omega$	$V_S = 9V$	–	1000	–	mW
			$V_S = 6V$	300	380	–	mW
		$R_L = 4\Omega$	$V_S = 6V$	450	650	–	mW
			$V_S = 4.5V$	–	320	–	mW
			$V_S = 3V$	–	110	–	mW
Distortion (f = 1kHz)	d	$R_L = 32\Omega$, $P_O = 40mW$		–	0.2	–	%
		$R_L = 16\Omega$, $P_O = 75mW$		–	0.2	–	%
		$R_L = 8\Omega$, $P_O = 150mW$		–	0.2	–	%
Closed Loop Voltage Gain	G_V	f = 1kHz		36	39	41	dB
Channel Balance	ΔG_V			–	–	±1	dB
Input Resistance	R_I	f = 1kHz		100	–	–	kΩ
Total Input Noise	e_N	$R_S = 10k\Omega$	B = Curve A	–	2.0	–	µV
			B = 22Hz to 22kHz	–	2.5	–	µV
Supply Voltage Rejection	SVR	f = 100Hz, C1 = C2 = 100µF		24	30	–	dB
Channel Separation	C_S	f = 1kHz		–	50	–	dB
Bridge							
Supply Voltage	V_S			1.8	–	15	V
Quiescent Drain Current	I_D	$R_L = \infty$		–	6	9	mA
Output Offset Voltage (Between Outputs)	V_{OS}	$R_L = 8\Omega$		–	–	±50	mV
Input Bias Current	I_B			–	100	–	nA
Output Power (f = 1kHz, d = 10%)	P_O	$R_L = 32\Omega$	$V_S = 9V$	–	1000	–	mW
			$V_S = 6V$	320	400	–	mW
			$V_S = 4.5V$	–	200	–	mW
			$V_S = 3V$	50	65	–	mW
			$V_S = 2V$	–	8	–	mW
		$R_L = 16\Omega$	$V_S = 9V$	–	2000	–	mW
			$V_S = 6V$	–	800	–	mW
			$V_S = 3V$	–	120	–	mW
		$R_L = 8\Omega$	$V_S = 6V$	900	1350	–	mW
			$V_S = 4.5V$	–	700	–	mW
			$V_S = 3V$	–	220	–	mW
		$R_L = 4\Omega$	$V_S = 4.5V$	–	1000	–	mW
			$V_S = 3V$	200	350	–	mW
			$V_S = 2V$	–	80	–	mW

Electrical Charactgeristics (Cont'd): (V_S = 6V, T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Bridge (Cont'd)							
Distortion	d	R_L = 8Ω, P_O = 0.5W, f = 1kHz		–	0.2	–	%
Closed Loop Voltage Gain	G_V	f = 1kHz		–	39	–	dB
Input Resistance	R_I	f = 1kHz		100	–	–	kΩ
Total Input Noise	e_N	R_S = 10kΩ	B = Curve A	–	2.5	–	μV
			B = 22Hz to 22kHz	–	3.0	–	μV
Supply Voltage Rejection	SVR	f = 100Hz		–	40	–	dB
Power bandwidth (–3dB)	B	R_L = 8Ω, P_O = 1W		–	120	–	kHz

Pin Connection Diagram

Output 1 **1**   **8** (–) Input 1
Supply Voltage **2**   **7** (+) Input 1
Output 2 **3**   **6** (+) Input 2
GND **4**   **5** (–) Input 2

8   5
.260 (6.6) Max
1   4

.430 (10.92) Max
.300 (7.62)
.200 (5.08)
.100 (2.54)
.125 (3.18) Min
.300 (7.62)