



ELECTRONICS, INC.

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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	
$T_A = +50^\circ\text{C}$	1.0W
$T_C = +50^\circ\text{C}$	1.4W
Operating Junction Temperature Range, T_J	-40° to $+150^\circ\text{C}$
Storage Temperature Range, T_{stg}	-40° to $+150^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient, R_{thJA}	100°C/W
Thermal Resistance, Junction-to-Case (Pin4), R_{thJC}	70°C/W

Electrical Characteristics: ($V_S = 6V$, $T_A = +25^\circ\text{C}$ 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 Characteristics (Cont'd): ($V_S = 6V$, $T_A = +25^\circ C$ 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	–	–	k Ω
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	$f = 100Hz$, $C_1 = C_2 = 100\mu F$		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 Characteristics (Cont'd): ($V_S = 6V$, $T_A = +25^\circ C$ unless otherwise specified)

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

Pin Connection Diagram

