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NTE807

Integrated Circuit

TV Sound Channel, 1W

Description:

The NTE807 is a complete 1Watt sound channel in a 16-Lead DIP type package and is ideally suited for use in small screen TV or mobile FM radios. This device operates from a single 14V supply and provides $V_{CC}/2$ output tracking as well as greater than 20dB of ripple rejection. The NTE807 will directly drive an 8Ω or 18Ω speaker and has a true 1W output into the 8Ω load.

Features:

- Low Limiting Threshold
- Low External Parts Count
- High AM Rejection
- Single Adjustment Tuning
- 70dB Limiter Gain
- 70dB DC Voltage Control Range
- Automatic Thermal Shutdown
- Output Current Limiting
- 10V to 18V Operating Range
- > 20dB Ripple Rejection

Absolute Maximum Ratings:

Supply Voltage, V_{CC}	+18V
Regulator Output Current, I_{REG}	10mA
Input Voltage (Pin10), V_{IN}	+4.0V
Operating Temperature Range, T_A	-40° to +85°C
Storage Temperature Range, T_S	-65° to +150°C

Static Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{CC} = 14\text{V}$ unless otherwise specified)

Parameter	Symbol	Test Pin	Test Conditions	Min	Typ	Max	Unit
Quiescent Supply Current	I_{CC}	8	$V_{in} = 0$	20	35	55	mA
Terminal Voltage	V_2	2		–	5.0	–	V
	V_3	3		–	2.5	–	V
	V_{OUT}	7		–	7.0	–	V
	V_{REG}	9		7.0	8.0	9.0	V
	V_{IN}	10,11		–	1.4	–	V
	$V_{14,15}$	14,15		–	4.1	–	V
	V_{16}	16		–	4.5	–	V

Dynamic Electrical Characteristics: (@ $T_A = 25^\circ\text{C}$, $V_{CC} = 14\text{V}$, $f_o = 4.5\text{MHz}$, $f_m = 400\text{Hz}$, $\Delta f = 25\text{kHz}$, $V_{in} = 10\text{mV}$, unless otherwise indicated)

Parameter	Symbol	Test Pin	Test Conditions	Min	Typ	Max	Unit
Input Limiting Threshold	V_{TH}	7	Note 1	–	150	–	μV
AM Rejection	AMR	7	Note 2, $m = 0.3$	30	>50	–	dB
Recovered Audio	V_{OUT}	16		250	400	550	mV
Output Distortion	THD_D	16		–	<1.0	3.0	%
Playthrough		7	$V_1 = 0\text{V}$	–	5.0	25	mV
Power Amp Voltage Gain	A_e	3–7	$V_{out} = 1.0\text{V}$	25	27	29	dB
Output Distortion	THD_D	7	$P_{OUT} = 1.0\text{W}$	–	2.0	10	%
Output Current Limiting	I_{OUT}	7	$R_L = 0\Omega$	–	800	–	mA
Output Tracking	V_{OUT}/V_{CC}	7/8	$V_{CC} = 10\text{V to } 18\text{V}$	–	0.5	–	V/V
Output Noise	e_n	7	$V_{in} = 0\text{V}$, $V_1 = 10\text{V}$	–	5.0	25	mV
Power Amp Input Impedance	Z_{in}	3	$f = 1.0\text{kHz}$	–	50	–	$\text{k}\Omega$

Note 1., Adjust V_1 for $V_{out} = 1.4\text{V}$, then reduce V_{in} until $V_{out} = 1.0\text{V}$ (–3dB)

Note 2. Adjust V_1 for $V_{out} = 1.4\text{V}$

Pin Connection Diagram

