



**ELECTRONICS, INC.**  
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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	–	$\mu\text{V}$
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

