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## NTE742 Integrated Circuit TV Sound Channel, 2W

### Description:

The NTE742 is designed for use as the entire sound function in television receivers or FM table radios. The NTE742 sound channel will directly drive a 16 ohm speaker with more than 2 watts output. This monolithic integrated circuit will operate from a single 18V to 28V power supply and can also function (with reduced power output) with supplies as low as 12V if additional decoupling is provided.

The NTE742 is supplied in an improved 16-lead plastic dual in-line package with heat-sink contact tabs. A copper alloy lead frame allows maximum power dissipation with standard cooling methods. The unique lead configuration allows easy attachment of a heat sink and yet permits the use of a standard IC socket or printed wiring board layout.

### Features:

- Low limiting Threshold
- Low External Parts Count
- Wide Operating Voltage Range
- 70dB Limiter Gain
- Automatic Thermal Shutdown
- Output Current Limiting
- Ripple Rejection Greater Than 20dB

### Absolute Maximum Ratings:

Supply Voltage,  $V_{CC}$  ..... +28V  
 Regulator Output Current,  $I_{REG}$  ..... 10mA  
 Input Voltage (Pin 10),  $V_{IN}$  ..... +4.0V  
 Operating Temperature Range,  $T_A$  ..... -40° to +85°C  
 Storage Temperature Range,  $T_S$  ..... -65° to +150°C

### Static Electrical Characteristics: ( $T_A = +25^\circ\text{C}$ , $V_{CC} = 24\text{V}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Supply Current	$I_{CC}$	$V_{IN} = 0$	25	45	60	mA
Terminal Voltage	$V_2$	$V_{IN} = 0$	-	10	-	V
	$V_3$		-	2.6	-	V
	$V_{OUT}$		-	12	-	V
	$V_{REG}$		14	15	16	V
	$V_{IN}$		-	1.4	-	V
	$V_{14}, V_{15}$		-	4	-	V
	$V_{16}$		-	8	-	V

### Dynamic Electrical Characteristics:

( $T_A = +25^\circ\text{C}$ ,  $V_{CC} = 24\text{V}$ ,  $f_o = 4.5\text{MHz}$ ,  $f_m = 400\text{Hz}$ ,  $\Delta f = 25\text{kHz}$ ,  $V_{IN} = 10\text{mV}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Limiting Threshold	$V_{TH}$	Note 1	–	150	400	$\mu\text{V}$
AM Rejection	AMR	Note 2	30	> 50	–	dB
Recovered Audio	$V_{OUT}$		500	700	900	mV
Total Harmonic Distortion	THD	Test Pin16	–	< 1	3	%
		Test Pin6, $P_{OUT} = 2\text{W}$	–	2.5	10	%
Volume Control Voltage	$V_1$	–3dB, Note 3	6.0	7.5	10	V
		–20dB, Note 3	2.0	2.8	4.0	V
		–40dB, Note 3	0.75	1.2	1.8	V
Playthrough		$V_1 = 0\text{V}$	–	5	25	mV
Power Amp Voltage Gain	$A_e$	$V_{OUT} = 1\text{V}$	25	27	29	dB
Output Current Limiting	$I_{OUT}$	$R_L = 0\Omega$	–	800	–	mA
Output Tracking	$V_{OUT}/V_{CC}$	$V_{CC} = 18\text{V to } 27\text{V}$	–	0.5	–	V/V
Output Noise	$e_n$	$V_{IN} = 0\text{V}$ , $V_1 = 10\text{V}$	–	5	25	mV
Power Amp Impedance	$Z_{in}$	$f = 1\text{kHz}$	–	50	–	$\text{k}\Omega$

Note 1. Adjust  $V_1$  for  $V_{OUT} = 2\text{V}$ , then reduce  $V_{IN}$  until  $V_{OUT} = 1.4\text{V}$  (–3dB).

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

Note 3. Reference is  $V_{OUT}$  at Pin 6 with  $V_1 = 12\text{V}$ .

Pin Connection Diagram



