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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°C, V_{CC} = 24V 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°C, V_{CC} = 24V, f_o = 4.5MHz, f_m = 400Hz, Δf = 25kHz, V_{IN} = 10mV unless otherwise specified)

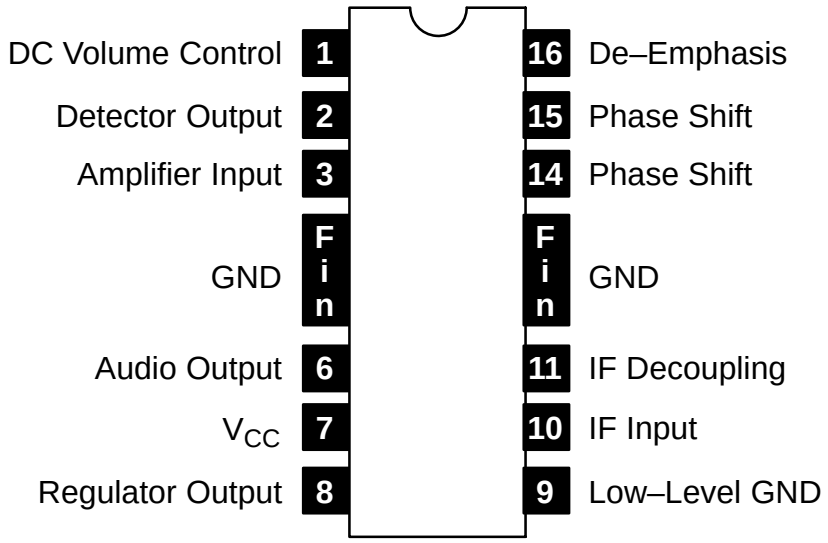
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Limiting Threshold	V_{TH}	Note 1	–	150	400	μV
AM Rejection	AMR	Note 2	30	> 50	–	dB
Recovered Audio	V_{OUT}		500	700	900	mV
Total Harmonic Distortion	THD	Test Pin16	–	< 1	3	%
		Test Pin6, P_{OUT} = 2W	–	2.5	10	%
Volume Control Voltage	V_1	–3dB, Note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

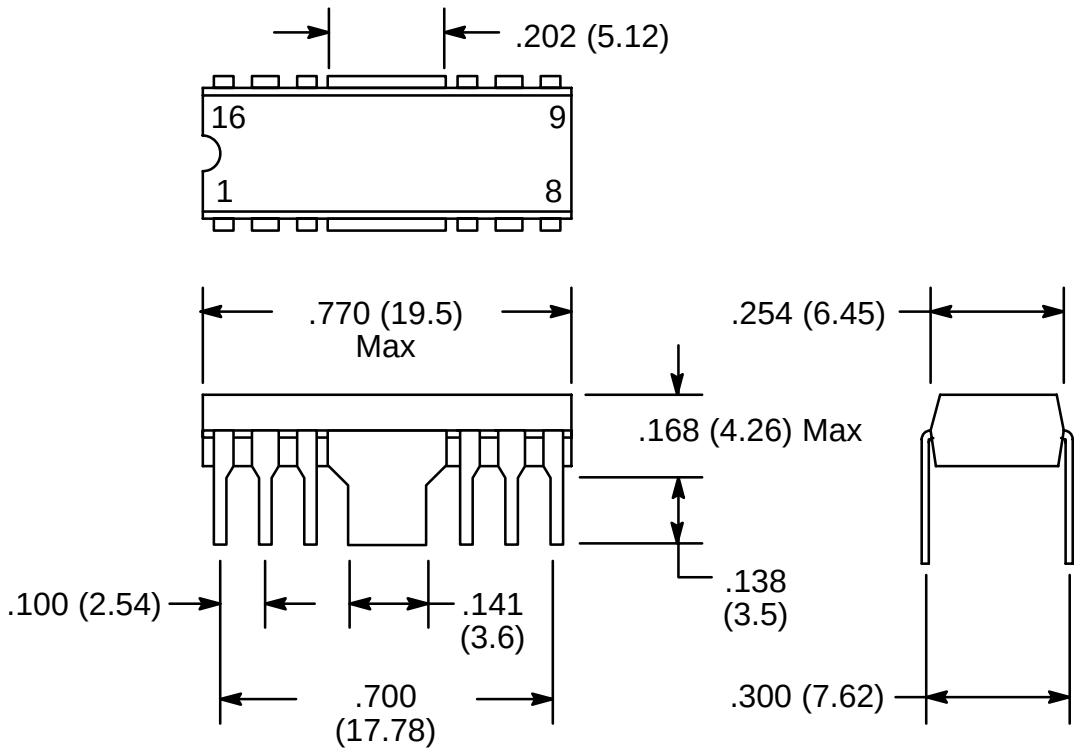
Note 1. Adjust V_1 for V_{OUT} = 2V, then reduce V_{IN} until V_{OUT} = 1.4V (–3dB).

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

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

Pin Connection Diagran




.202 (5.12)
16
9
1
8
.770 (19.5)
Max
.254 (6.45)
.168 (4.26) Max
.138
(3.5)
.100 (2.54)
.141
(3.6)
.700
(17.78)
.300 (7.62)