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NTE748
Integrated Circuit
TV Sound Circuit

Description:

The NTE748 is an integrated circuit in a 14–Lead DIP type pacjage designed for IF limiting, detection, audio preamplifier and driver for the sound portion of a TV receiver.

Features:

- Excellent Limiting with 80μV(rms) Input Signal typ
- Large Output–Voltage Swing–to 3.5V(rms) typ
- High IF Voltage Gain–65dB typ
- Zener Power–Supply Regulation Built–in
- Short–Circuit Protection
- A Coincidence Discriminator that Requires Only One RLC Phase Shift Network
- Preamplifier to Drive a Single External–Transistor Class–A Audio Output Stage

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Power Supply Voltage, V+ . . . . . +16V
Input Voltage, V_{in} . . . . . $0.7V_{(rms)}$
Power Dissipation (Package Limitation), P_D 625mW
Derate above +25°C . . . . . 5.0mW/°C
Operating Temperature Range, T_A . . . . . 0° to +75°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C

Electrical Characteristics: (V+ = 12V, T_A = +25°C, f = 4.5MHz, Deviation = ±25kHz unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Input Voltage	V_L	–3dB Limiting		–	80	160	μV_{rms}
AM Rejection	AMR	V_{in} = 20mV$_{rms}$, AM = 30%, AMR = 20 log, Note 1	V_{OFM}: f = 4.5MHz, Deviation = ±25kHz, Q_L = 24	–	45	–	dB
			V_{OAM}: f = 5.5MHz, Deviation = ±50kHz, Q_L = 30	–	45	–	dB
Total Harmonic Distortion	THD	Q_L = 24, 7.5kHz Deviation, Note 1		–	1.0	–	%
Maximum Undistorted Audio Output Voltage (Pin10)	$V_{o(max)}$	Audio Gain Adjusted Externally, Q = 24, Note 1		–	3.5	–	V_{rms}

Electrical Characteristics (Cont'd): (V+ = 12V, T_A = +25°C, f = 4.5MHz, Deviation = ±25kHz unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Recovered Audio (Pin2)	V_A	f = 4.5MHz, Deviation = ±25kHz, Q_L = 24, Note 1	0.35	0.50	–	V_{rms}
		f = 5.5MHz, Deviation = ±50kHz, Q_L = 30, Note 1	–	0.80	–	V_{rms}
Audio Preamplifier	A_{VP}	Open Loop Gain	–	25	–	dB
IF Voltage Gain	A_{VIF}		–	65	–	dB
Parallel Input Resistance	R_{in}		–	9.0	–	kΩ
Parallel Input Capacitance	C_{in}		–	6.0	–	pF
Nominal Zener Voltage	V_{Reg}	I_Z = 5mA	–	11.6	–	V
Power Supply Current	I_D	I_Z = 5mA	–	31	–	mA
Power Dissipation	P_D	I_Z = 5mA	–	300	375	mW

Note 1. Q_L is loaded circuit Q.

Pin Connection Diagram