

NTE748 Integrated Circuit TV Sound Circuit

Description:

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

Features:

- Excellent Limiting with 80 μ V(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: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

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

Electrical Characteristics: ($V_+ = 12\text{V}$, $T_A = +25^\circ\text{C}$, $f = 4.5\text{MHz}$, Deviation = $\pm 25\text{kHz}$ 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): ($V_+ = 12V$, $T_A = +25^{\circ}C$, $f = 4.5MHz$, Deviation = $\pm 25kHz$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Recovered Audio (Pin2)	V_A	$f = 4.5MHz$, Deviation = $\pm 25kHz$, $Q_L = 24$, Note 1	0.35	0.50	–	V_{rms}
		$f = 5.5MHz$, Deviation = $\pm 50kHz$, $Q_L = 30$, 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	–	$k\Omega$
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.

