

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 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: ($T_A = +25^{\circ}\text{C}$ unless otherwise specified)

Power Supply Voltage, V_+	+16V
Input Voltage, V_{in}	$0.7V_{(rms)}$
Power Dissipation (Package Limitation), P_D	625mW
Derate above $+25^{\circ}\text{C}$	$5.0\text{mW}/^{\circ}\text{C}$
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	$V_{in} = 20\text{mV}_{rms}$, AM = 30%, AMR = 20 log, Note 1	V_{OFM} : $f = 4.5\text{MHz}$, Deviation = $\pm 25\text{kHz}$, $Q_L = 24$	-	45	-	dB
			V_{OAM} : $f = 5.5\text{MHz}$, Deviation = $\pm 50\text{kHz}$, $Q_L = 30$	-	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.

