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NTE778S Integrated Circuit Dual Operational Amplifier

Description:

The NTE778S is an integrated circuit designed as a low noise preamplifier in audio equipment and a general purpose operational amplifier in other electronic equipment. Two low noise operational amplifier circuits displaying internal phase-compensated high gain and low distortion are contained in a 8-pin SIP for applications over a wide range as a general-purpose dual amplifier in general electronic equipment. The device can also be used as a single power type and amplifier in portable equipment. It is also suitable as a headphone amplifier because of its high load current.

Features:

- High gain, Low Distortion
 $G_{VO} = 110\text{dB}$, $THE = 0.0015\%$ (typ.)
- High Slew Rate, High f_T
 $SR = 3.0\text{V}/\mu\text{s}$, $f_T = 7\text{MHz}$ (typ.)
- Low Noise ($R_S = 1\text{k}\Omega$)
 FLAT, $V_{NI} = 2\mu\text{V}_{\text{rms}}$ (typ.)
 RIAA, $V_{NI} = 1\mu\text{V}_{\text{rms}}$ (typ.)
- Operation with Low Supply Voltage
 $V_{CC} \geq 4\text{V}$ ($\pm 2\text{V}$)
- High Load Current, High Current Dissipation
 $I_{LP} = \pm 50\text{mA}$, $P_D = 800\text{mW}$

Recommended Operating Conditions:

Supply Voltage Range ± 2 to $\pm 16\text{V}$
 Rated Supply Voltage ± 15

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

Supply Voltage, V_{CC} , $\pm 18\text{V}$
 Load Current, I_{LP} $\pm 50\text{mA}$
 Differential Input Voltage, V_{id} $\pm 30\text{V}$
 Common Input Voltage, V_{ic} $\pm 15\text{V}$
 Power Dissipation, P_D 800mW
 Thermal Dirating ($T_A \geq 25^\circ\text{C}$), K_θ $8\text{mW}/^\circ\text{C}$
 Ambient Temperature Range, T_{opr} -20° to $+75^\circ\text{C}$
 Storage Temperature Range, T_{stg} -55° to $+125^\circ\text{C}$

Electrical Characteristics: ($T_A = +25^\circ$, $V_{CC} = +15V$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Circuit Current	I_{CC}	$V_{in} = 0$	-	3.0	6.0	mA
Input Offset Voltage	V_{IO}	$R_S \leq 10k\Omega$	-	0.5	6.0	mV
Input Offset Current	I_{IO}		-	5	200	nA
Input Bias Current	I_{IB}		-	-	500	nA
Input Resistance	R_{in}		0.3	5	-	$M\Omega$
Open Loop Voltage Gain	G_{VO}	$R_L \geq 2k\Omega$, $V_O = \pm 10V$	86	110	-	dB
Maximum Output Voltage	V_{OM}	$R_L \geq 10k\Omega$	± 12	± 14	-	V
		$R_L \geq 2k\Omega$	± 10	± 13	-	V
Common Input Voltage Range	V_{CM}		± 12	± 14	-	V
Common Mode Rejection Ratio	CMRR	$R_S \leq 10k\Omega$	70	90	-	dB
Supply Voltage	SVRR	$R_S \leq 10k\Omega$	-	30	150	$\mu V/V$
Power Dissipation	P_d		-	90	180	mW
Slew Rate	SR	$G_V = 0dB$, $R_L = 2k\Omega$	-	3.0	-	$V/\mu s$
Gain Bandwidth Product	f_T		-	7	-	MHz
Input Referred Noise Voltage	V_{NL}	$R_S = 1k\Omega$, BW: 1-Hz to 30Hz	-	2.0	-	μV_{rms}

Pin Connection Diagram

