

NTE1221 Integrated Circuit Stereo Preamp

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

Maximum Supply Voltage, $V_{CC\text{max}}$	25V
Collector–Base Voltage (Q1), V_{CBO}	20V
Collector–Emitter Voltage (Q1), V_{CEO}	15V
Emitter–Base Voltage (Q1), V_{EBO}	5V
Collector Current (Q1), I_C	25mA
Operating Temperature Range, T_{opr}	-20° to $+70^\circ\text{C}$
Storage Temperature Range, T_{stg}	-30° to $+125^\circ\text{C}$

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

Recommended Supply Voltage, V_{CC}	6V
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Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{CC} = 6\text{V}$, $f = 1\text{kHz}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dissipation Current	I_4, I_{13}		–	3.5	6.0	mA
Voltage Gain	VG	$V_i = 0.5\text{mV}$	57	61	–	dB
Output Voltage	V_O	THD = 5%, $R_{NF} = 100\Omega$	1.0	1.5	–	V
Bandwidth	BW	$V_i = 0.5\text{mV}$, -3dB	–	400	–	kHz
Total Harmonic Distortion	THD	$V_O = 0.45\text{V}$, $R_{NF} = 100\Omega$	–	0.5	0.9	%
Input Resistance	r_i		–	90	–	$k\Omega$
Output Resistance	r_o		–	1	–	$k\Omega$
Crosstalk	CT		–	–40	–	dB
Noise Voltage Converted to Input	V_{NI}	$V_{CC} = 10\text{V}$, $R_g = 600\Omega$, NAB 4.8cm/s	–	1.0	3.0	μV
Transistor Characteristics						
Collector Cutoff Current	I_{CBO}	$V_{CB} = 15\text{V}$	–	–	1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4\text{V}$	–	–	1.0	μA
DC Current Gain	h_{FE}	$V_{CB} = 3\text{V}$, $I_C = 1\text{mA}$	70	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1\text{mA}$, $I_C/I_B = 10\text{mA}$	–	0.5	–	V

Pin Connection Diagram

Invert Input Amp 2	1	14	Non-Invert Input Amp 2
Gain Adjust	2	13	V _{CC} Amp 2
Output Amp 1	3	12	Output Amp 2
V _{CC} Amp 1	4	11	Freq Comp Amp 2
Non-Invert Input Amp 1	5	10	Q1 Base
Invert Input Amp 1	6	9	Q1 Collector
Gain Adjust	7	8	Q1 Emitter

