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NTE1794
Integrated Circuit
Volatge Controlled Amp (VCA)
for dbx Noise Reduction System

Description:

The NTE1794 is a dbx noise reduction system voltage controlled amp (VCA) in an 8–Lead SIP type package designed for use in tape decks and other audio equipment. This device features excellent linearity VCA for wider input level due to super low noise and a high gain NPN/PNP complementary process.

Features:

- Wide Operating Supply Voltage
- Excellent Linearity Control Constant
- Low Total Harmonic Distortion
- Low Noise

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

Supply Voltage, V_{CC}, V_{EE} 15V
Supply Current, I_{CC} 30mA
Power Dissipation (T_A = +75°C), P_D 330mW
Operating Temperature Range, T_{opr} . . . . . –20° to +75°C
Storage Temperature Range, T_{stg} . . . . . –40° to 125°C

Recommended Operating Conditions:

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Operating Supply Voltage	V_{CC}, V_{EE}	Note 1	±4	±12	±15	V
Bias Current	I_{SET}		–	2.0	–	mA
Input Level Range	υ_{in}		–40	–	+10	dBV

Note 1. $I_{SET} = V_{EE} – 4• V_{BE}/R_{EXT} = V_{EE} – 2.4/R_{EXT} = 2mA$

Electrical Characteristics: (T_A = +25°C, V_{CC} = +12V, V_{EE} = –12V, I_{SET} = 2mA, f = 1kHz, R_{IN} = R_{OUT} = 33kΩ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Current	I_{CC}	Non Signal	1.0	2.0	3.0	mA
Equivalent Input Bias Current	I_{IN}	Non Signal	–	6	20	nA
Gain Cell Idling Current	I_{DLE}	Non Signal	–	20	–	µA
Gain Cell Offset Voltage	V_{OFF}	A_V = 0dB, THD ≤ 0.07%	–	±0.5	–	mV
Control Constant	V_C	A_V = –30dB to +30dB	–5.8	–5.9	–6.1	mV/dB
Total Harmonic Distortion	THD	A_V = 0dB, V_O = 0dBV, BPF = 400Hz to 5kHz	–	0.007	0.07	%
		A_V = +20dB, V_O = 0dBV, BPF = 400Hz to 5kHz	–	0.02	0.10	%
		A_V = –20dB, V_{IN} = 0dBV, BPF = 400Hz to 5kHz	–	0.02	0.15	%
Output Noise Level	NV	A_V = 0dB, R_{IN} = 33kΩ, BPF = 10Hz to 20kHz	–	–94	–84	dBV
Symmetry Control Voltage	V_{SYM}	A_V = 0dB, THD ≤ 0.07%	–4	0	+4	mV

Pin Connection Diagram
(Front View)