ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089

NTE1799
Integrated Circuit
Electronics Switch for VCR & Audio Applications

Description:

The NTE1799 is a 3–channel 2–position high–performance analog switch in a 16–Lead DIP type package having wide applications from audio band to video band. It is also provided with 2 channels of muting function.

Features:

- 3–Channel 2–Position Switch
- Wide Input Dynamic Range
- Low Distortion
- Good Frequency Characteristic
- Muting Available

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

Maximum Supply Voltage, V_{CCmax} 15V
Allowable Power Dissipation ($T_A \leq$ +65°C), $P_d$max 500mW
Operating Temperature Range, T_{opg} . . . . . –20° to +65°C
Storage Temperature Range, T_{stg} . . . . . –40° to +125°C

Operating Characteristics: (T_A = +25°C, V_{CC} = 12V unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Current Dissipation	I_{CC}		–	30	39	mA
Total Harmonic Distortion	THD	R_g = 600Ω, 4.5$V_{P–P}$, f = 1kHz, R_L = ∞, Note 1	–	0.007	0.1	%
Noise Voltage	V_N	R_g = 600Ω, f = 20 to 20kHz, R_L = ∞, Note 1	–	–93	–80	dB
Crosstalk Ch1	CR1	Input 1: R_g = 50Ω, 2$V_{P–P}$, f = 3.58MHz, Input 2: R_g = 500Ω, Note 2	–	–50	–	dB
Ch2	CR2		–	–60	–	dB
Ch3	CR3		–	–50	–	dB
Pedestal Level	ΔV_{ped}	V_{CTL} (Pin10, Pin13, Pin15) = 0 to 12V, Note 1	–100	0	+100	mV
Maximum Input Voltage	V_{IN}max	R_g = 600Ω, f = 1kHz, R_L = ∞, THD = 1%, Note 1	5.0	–	–	$V_{P–P}$
2nd Harmonic Voltage	H2	R_g = 50Ω, 4$V_{P–P}$, f = 1MHz, R_L = ∞, Note 1	–46	–55	–	dB
3rd Harmonic Voltage	H3		–46	–55	–	dB

Note 1. Measurements are made for each of Ch1, Ch2, and Ch3 using input A and input B.
Input A: V_{CTL} (Pin10, Pin13, Pin15) is 12V at the measurement mode.
Input B: V_{CTL} is 0V at the measurement mode.

Operating Characteristics (Cont'd): (T_A = +25°C, V_{CC} = 12V unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Switch Changeover Voltage	V_{CTLs}	Note 1	2.6	3.1	4.0	V
Mute Threshold Voltage	V_{ML}	Low Level, Note 3	1.2	1.6	1.9	V
	V_{MH}	High Level, Note 3	5.5	6.9	8.2	V
Crosstalk Between Channels Ch1		R_g = 500Ω, R_L = ∞, Other channel input R_g = 50Ω, $2V_{P-P}$, f = 3.58MHz, Note 4	–50	–68	–	dB
Ch2			–50	–68	–	dB
Ch3			–50	–60	–	dB
Mute Compression Ratio		R_g = 600Ω, $2V_{P-P}$, f = 1kHz, R_L = ∞, Series Resistance 10kΩ, Note 3	–	–60	–	dB
Control Pin Flow–In Current	I_{CTL}	Note 1	–	3.8	–	µA
Input Impedance	z_{in}	Note 1	–	10	–	kΩ
Output Impedance	z_{out}	Note 1	–	29	–	Ω
Pin Voltage (Pin1)	V_1	V_{15} = 0V	–	7.9	–	V
		V_{15} = 12V	–	7.9	–	V
Pin Voltage (Pin2)	V_2		–	7.2	–	V
Pin Voltage (Pin5)	V_5	V_{13} = 0V	–	7.9	–	V
		V_{13} = 12V	–	7.9	–	V
Pin Voltage (Pin6)	V_6		–	7.2	–	V
Pin Voltage (Pin7)	V_7		–	7.2	–	V
Pin Voltage (Pin8)	V_8	V_{10} = 0V	–	7.9	–	V
		V_{10} = 12V	–	7.9	–	V
Pin Voltage (Pin9)	V_9	V_{10} = 0V	–	7.9	–	V
		V_{10} = 12V	–	7.9	–	V
Pin Voltage (Pin12)	V_{12}	V_{13} = 0V	–	7.9	–	V
		V_{13} = 12V	–	7.9	–	V
Pin Voltage (Pin16)	V_{16}	V_{15} = 0V	–	7.9	–	V
		V_{15} = 12V	–	7.9	–	V

Note 1. Measurements are made for each of Ch1, Ch2, and Ch3 using input A and input B.
Input A: V_{CTL} (Pin10, Pin13, Pin15) is 12V at the measurement mode.
Input B: V_{CTL} is 0V at the measurement mode.

Note 2. Measurements are made using input A and input B.

Note 3. Measurements are made for Ch2, Ch3.

Note 4. Measurements are made for each of Ch1, Ch2, and Ch3 using input A and input B on other channel.

Pin Connection Diagram