

**SWITCHLESS RECORDING/  
PLAYBACK AMPLIFIER**

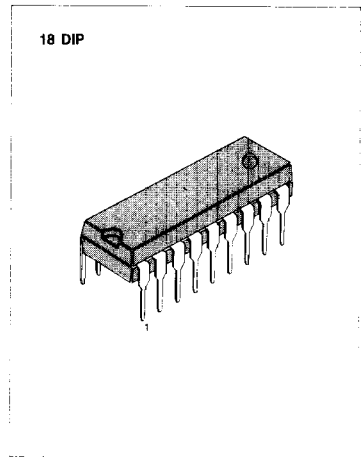
The KA2983 is a monolithic integrated circuit designed to simplify VCR audio signal circuitry. Logic control is used, so that by merely setting the recording/playback control pin voltage, the amplifier and signal paths are automatically switched between recording and playback and the muting functions are appropriately controlled.

**FUNCTION**

- Record/Playback preamplifier
- Recording amplifier
- Recording/Playback/Muting control circuit
- Analog switch
- Line amplifier
- ALC Circuit

**FEATURES**

- Contains all Recording/Playback amplifiers required for VCR audio signal systems.
- Capable of setting each mode of Recording/Playback/Muting by changing only the control pin voltage.
- Very small pop noise occurring at the time of mode selection.
- Easy to adjust recording level, playback sensitivity.
- Improvement in reliability due to electronic switch.



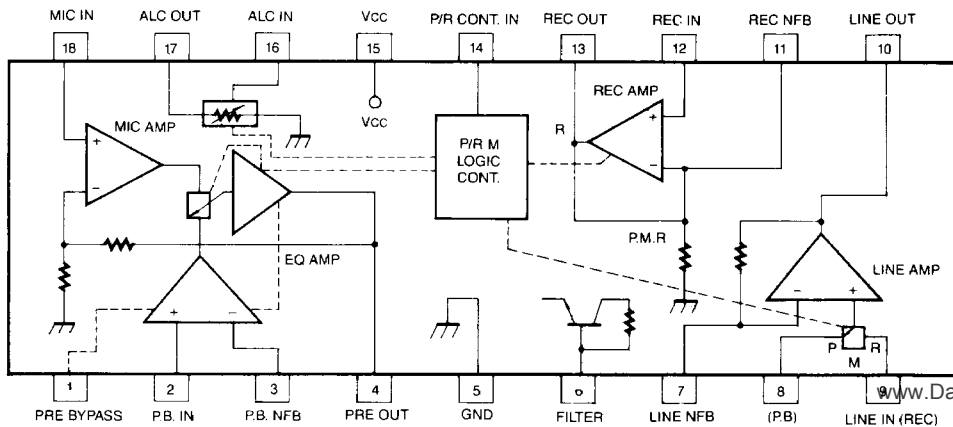
**ORDERING INFORMATION**

Device	Package	Operating Temperature
KA2983	18 DIP	- 10 ~ + 75°C

**APPLICATION**

- 9 and 12V VCR audio system units.
- Logic-controlled tape recorders.

**BLOCK DIAGRAM**



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ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

Characteristic	Symbol	Value	Unit
Supply Voltage	$V_{CC}$	15	V
Power Dissipation	$P_d$	700	mW
Operating Temperature	$T_{opr}$	-10 ~ +75	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 ~ +125	$^\circ\text{C}$

RECOMMENDED OPERATING CONDITION ( $T_a=25^\circ\text{C}$ )

Characteristic	Symbol	Value	Unit
Supply Voltage	$V_{CC}$	9	V

## ELECTRICAL CHARACTERISTICS

( $T_a=25^\circ\text{C}$ ,  $V_{CC}=9\text{V}$ ,  $f=1\text{KHz}$ )

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Current (PLAYBACK)	$I_{CCP}$	$V_{CC}=9\text{V}$	5	8.5	13	mA
Supply Current (RECORD)	$I_{CCR}$	$V_{CC}=9\text{V}$	6	10	15	mA

## EQ AMPLIFIER

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Voltage Gain	GVC	$V_O=0\text{dBm}$		44		dB
Output Voltage	$V_{OM}$	THD = 3%		2.2		V
Total Harmonic Distortion	THD	$V_O=0\text{dBm}$		0.1		%
Input Resistance	$R_{IN}$		40	55		$\text{K}\Omega$
Input Referred Noise Voltage	$V_{NIN}$	$R_g=2.2\text{K}\Omega$ (DIN AUDIO)		1	1.8	$\mu\text{V}$

## MIC AMPLIFIER

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Voltage Gain	GVC	$V_O=0\text{dBm}$	35.5	37.5	39.5	dB
Output Voltage	$V_{OM}$	THD = 3%		2.2		V
Total Harmonic Distortion	THD	$V_O=0\text{dBm}$		0.07		%
Input Resistance	$R_{IN}$		40	55		$\text{K}\Omega$
Input Referred Noise Voltage	$V_{NIN}$	$R_g=2.2\text{K}$ (DIN AUDIO)		1	2	$\mu\text{V}$

**LINE AMPLIFIER**

Voltage Gain	GVC	$V_o = 0dBm$	35 (PB) 30 (REC)		dB
Output Voltage	$V_{OM}$	THD = 3%	1.9	2.4	V
Total Harmonic Distortion	THD	$V_o = 0dBm$	0.3		%

**REC AMPLIFIER**

Voltage Gain (OPEN LOOP)	GVO	$V_o = 0dBm$	38	42	dB	
Voltage Gain (CLOSED LOOP)	GVC	$V_o = 0dBm$	11.5	13	14.5	dB
Output Voltage	$V_{OM}$	THD = 3%	1.9	2.3	V	
Total Harmonic Distortion	THD	$V_o = 0dBm$	0.2		0.6	%

**TEST CIRCUIT**

