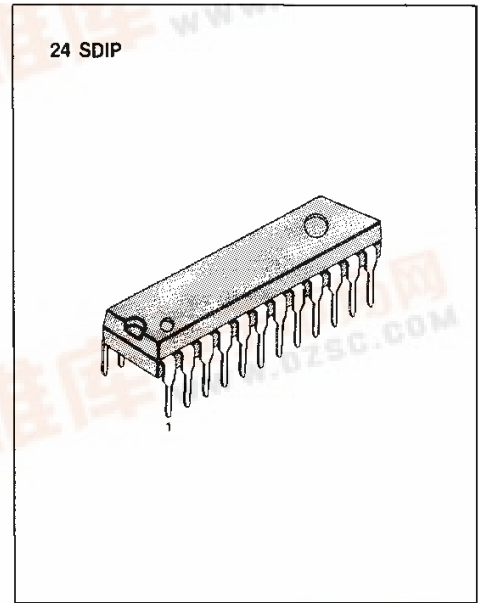


## PLAYBACK/RECORD PRE AMPLIFIER FOR DOUBLE DECK

The KA22291 is a monolithic integrated circuit consisting of a dual input playback amplifier, a channel for double or auto-reverse operation and a two-channel record amplifier. It is suitable for 6V-9V double deck or auto-reverse cassette applications.

### FEATURES

- Dual input two-channel playback amplifier
- Two-channel record amplifier
- Built in ALC and Muting circuit
- PB/REC and playback input select switch included
- Power ON ALC discharge circuit included
- Operating supply voltage:  $V_{CC} = 4V \sim 12V$
- REC/PB power on quick start circuit
- Few external part required.



### ORDERING INFORMATION

Device	Package	Operating Temperature
KA22291	24 SDIP	-25°C ~ +75°C

### BLOCK DIAGRAM

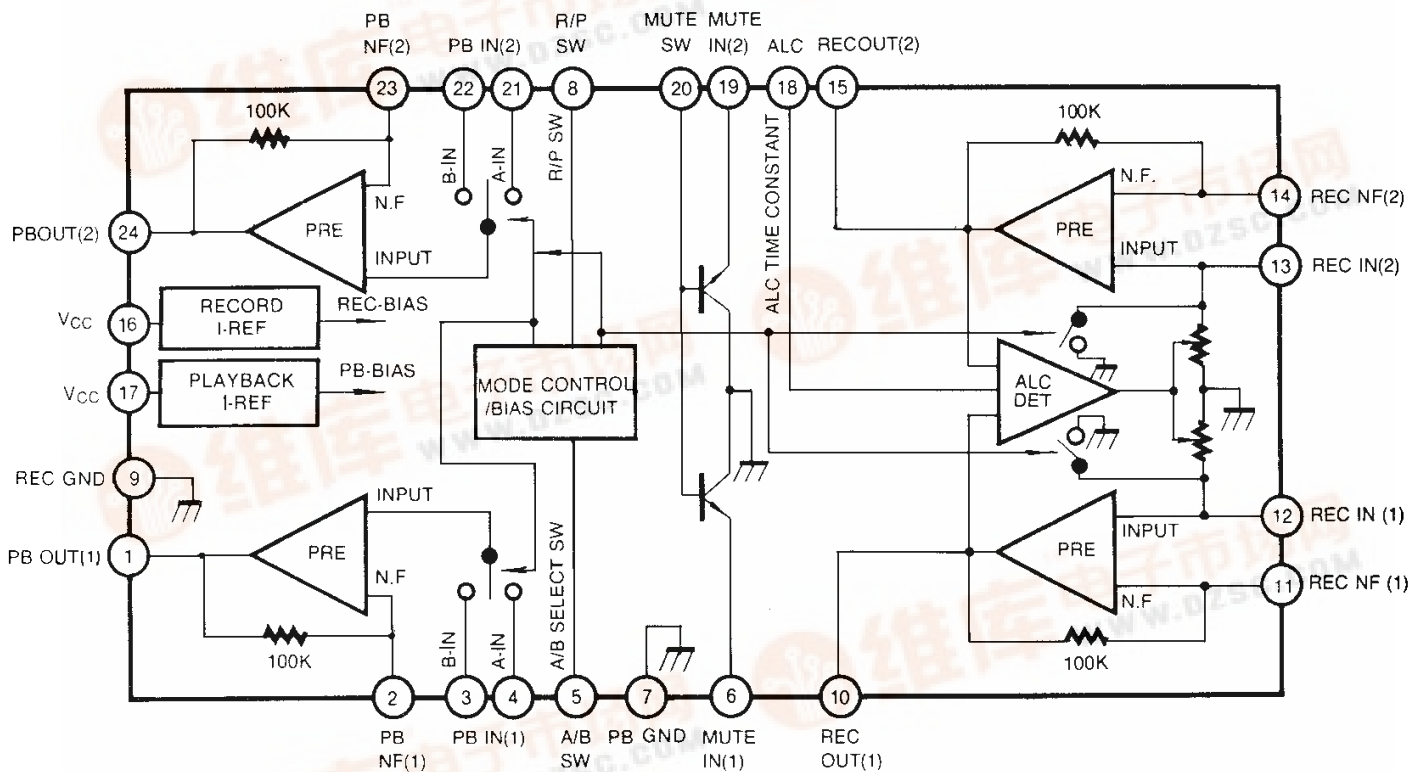


Fig. 1

\* These specifications are subject to change without notice.

**ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)**

Characteristic	Symbol	Value	Unit
Supply Voltage	$V_{CC}$	12	V
Power Dissipation	$P_D$	1000	mW
Operating Temperature	$T_{OPR}$	-25 ~ +75	°C
Storage Temperature	$T_{STG}$	-55 ~ +125	°C

**ELECTRICAL CHARACTERISTICS**

(Ta = 25°C, VCC = 9V, f = 1KHz, unless otherwise specified)

Characteristic		Symbol	Test Condition	Min	Typ	Max	Unit	
Circuit Current		$I_{CCQ}$	$V_I = 0$ , REC MODE	10	18	26	mA	
PLAYBACK	Open Loop Voltage Gain	$G_{VO}$	$V_I = -80dBm$	60	90		dB	
	Output Voltage	$V_{O1}$	THD = 1%, NAB	0.75	1.2		V	
	Total Harmonic Distortion	THD <sub>1</sub>	$V_O = 0.2V$ , NAB		0.05	0.3	%	
	Cross Talk	Ch to Ch	CT <sub>1</sub>	$V_O = 0.5V$ , NAB		-55	-45	dB
		Ain to Bin	CT <sub>2</sub>	$V_O = 0.5V$ , NAB		-55	-45	dB
Equivalent Input Noise Voltage		$V_{NI}$	Filter: 20Hz ~ 20KHz $R_G = 2.2K$ , $V_I = 0$		1.2	2.2	$\mu V$	
RECORD	Close Loop Voltage Gain	$G_{VC}$	$V_I = 68dBm$ , ALC off	58	60	62	dB	
	Output Voltage	$V_{O2}$	THD = 1%, ALC off	1.2	1.6		V	
	Total Harmonic Distortion	THD <sub>2</sub>	$V_I = 68dBm$ , ALC off		0.2	1	%	
	ALC Output Voltage	$V_{O(ALC)}$	$V_I = -20dBm$	0.75	0.95	1.35	V	
	ALC THD	THD <sub>ALC</sub>	$V_I = -20dBm$		0.2	1.0	%	
	ALC Range	$\Delta V_{ALC}$	$V_I = -60dBm$ , +3dB UP	40	50		dB	
	Cross Talk (ALC)	CT <sub>3</sub>	$V_I = -50dBm$		-55	-40	dB	
RECORD TO PLAYBACK Cross Talk		CT <sub>4</sub>	REC input = 0 PLAY output = 0.5V		-55	-40	dB	
Muting Range		MR	$V_I = -20dBm$		-55	-40	dB	

\*These specification are subject to change without notice.

TEST CIRCUIT

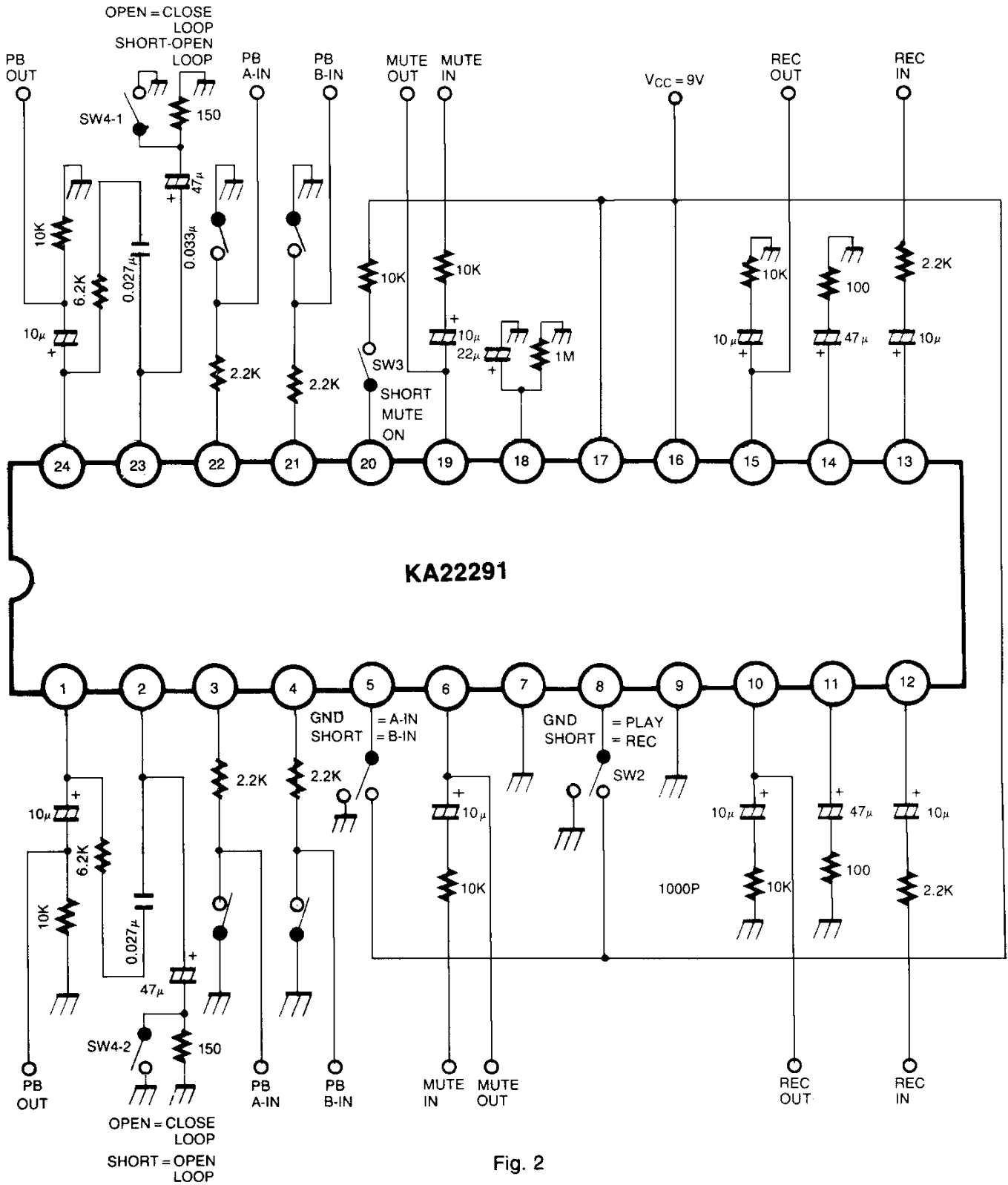


Fig. 2

\* These specifications are subject to change without notice.

## APPLICATION INFORMATION

### 1. R/P SWITCH

Apply R/P input voltage at PIN 8.

PLAY: 0V (GND)

REC: 4.5V ~ 12V (Don't apply 13V above).

Only valid A/B input select in playback mode.

In record mode, the playback A-input was available and the ALC was turned on by record bias.

### A. RECORD MODE SCHEMATIC

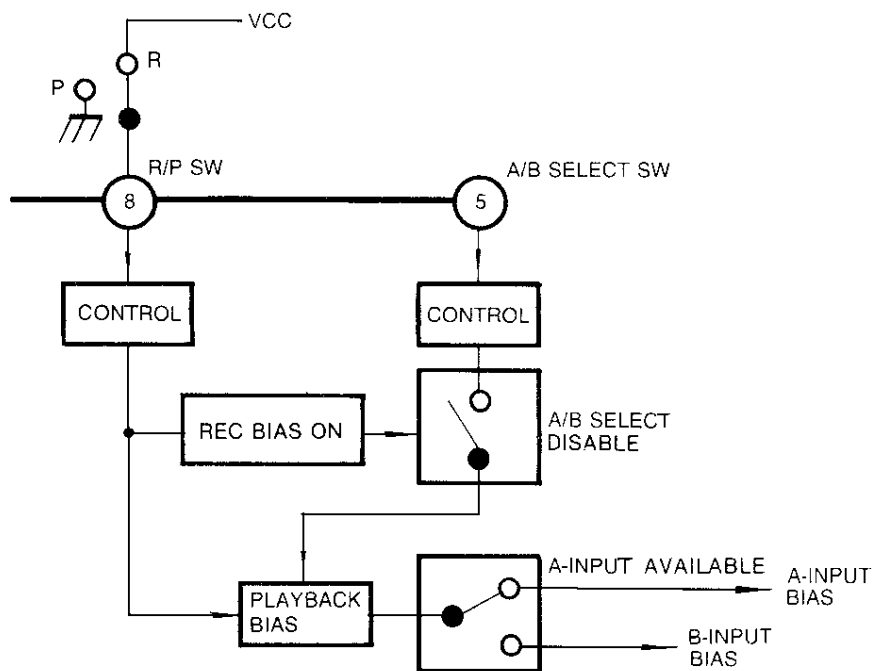


Fig. 3

### B. PLAYBACK MODE SCHEMATIC

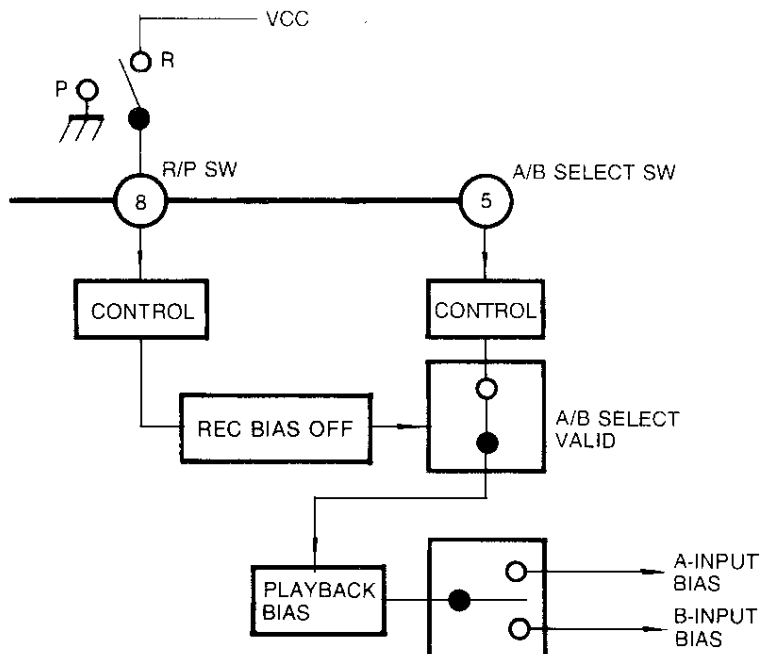


Fig. 4

## 2. PLAYBACK A/B INPUT SELECT SWITCH (only playback mode)

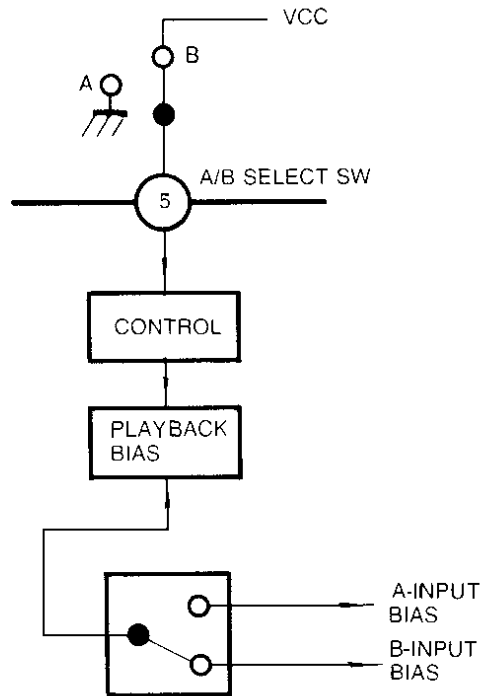
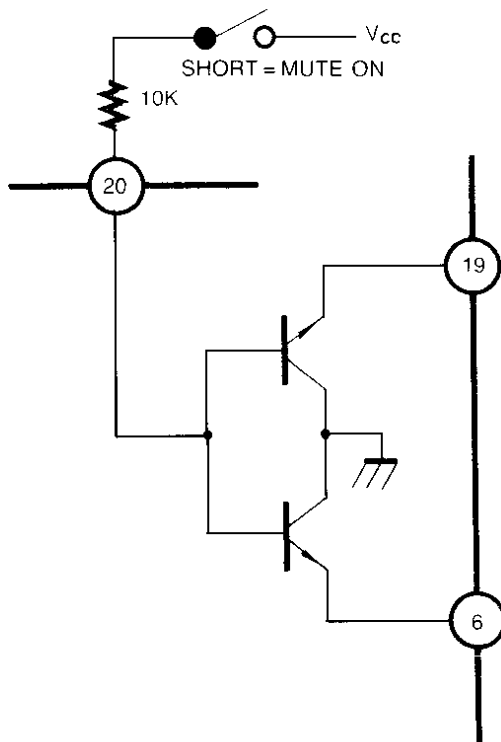


Fig. 5

## 3. MUTE SWITCH



\*THIS CIRCUIT IS OPERATED ON REVERSE SATURATION MODE

Fig. 6