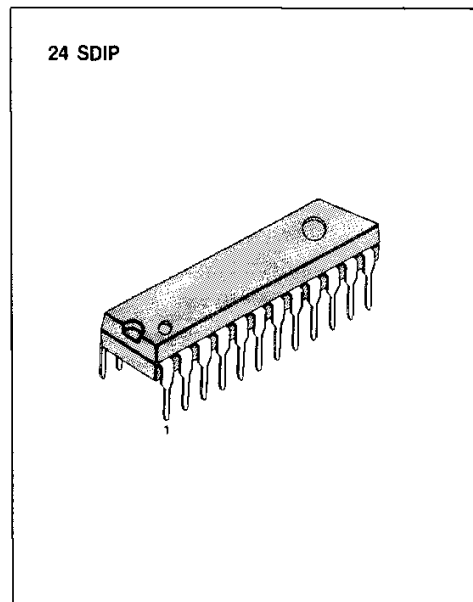


PLAYBACK/RECORD PRE AMPLIFIER FOR DOUBLE DECK

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.



BLOCK DIAGRAM

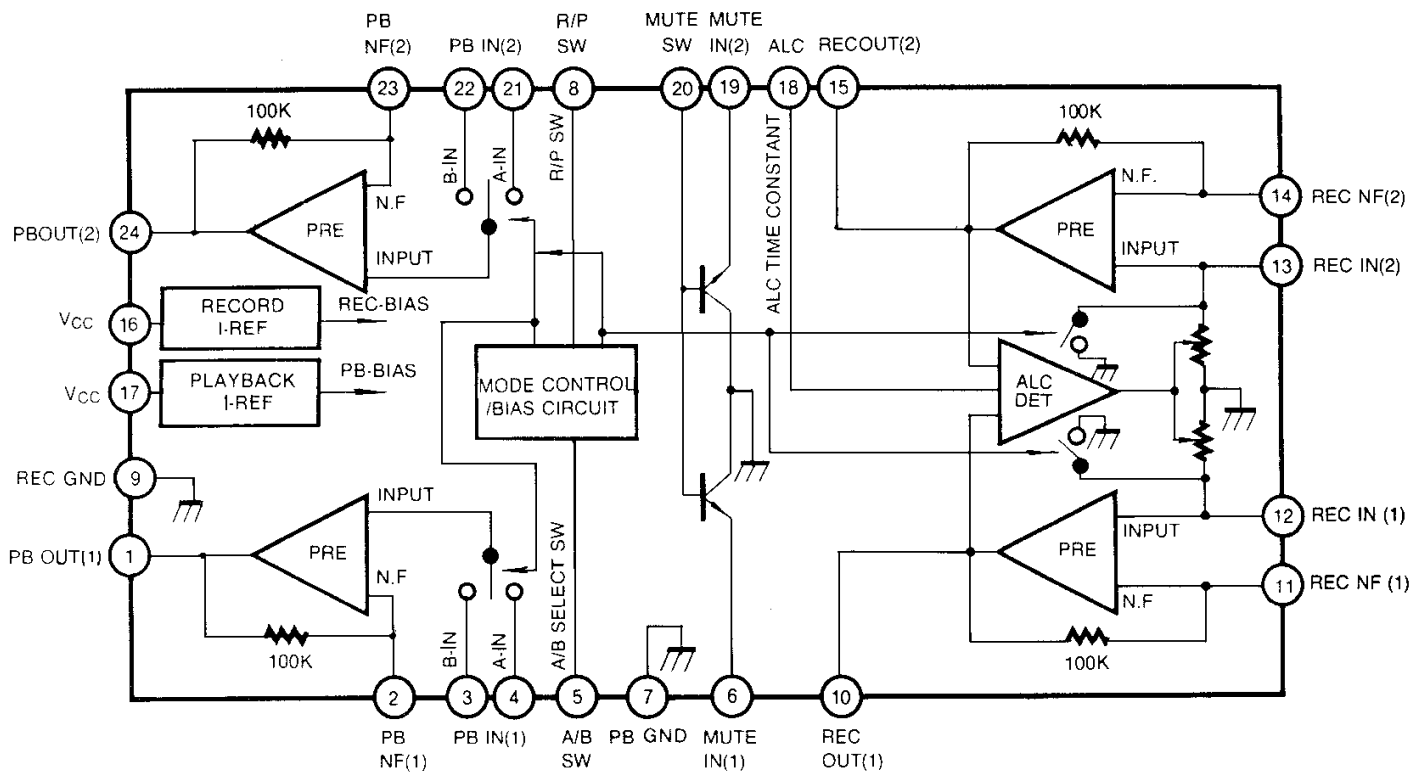


Fig. 1

* These specifications are subject to change without notice.

ORDERING INFORMATION

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

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_{CCO}	$V_I = 0$, REC MODE	10	18	26	mA	
PLAYBACK	Open Loop Voltage Gain	G_{VO}	$V_I = -80\text{dBm}$	60	90		dB	
	Output Voltage	V_{O1}	THD = 1%, NAB	0.75	1.2		V	
	Total Harmonic Distortion	THD_1	$V_O = 0.2\text{V}$, NAB		0.05	0.3	%	
	Cross Talk	Ch to Ch	CT_1	$V_O = 0.5\text{V}$, NAB		- 55	- 45	dB
		Ain to Bin	CT_2	$V_O = 0.5\text{V}$, NAB		- 55	- 45	dB
Equivalent Input Noise Voltage		V_{NI}	Filter: 20Hz ~ 20KHz $R_G = 2.2\text{K}$, $V_I = 0$		1.2	2.2	μV	
RECORD	Close Loop Voltage Gain	G_{VC}	$V_I = 68\text{dBm}$, ALC off	58	60	62	dB	
	Output Voltage	V_{O2}	THD = 1%, ALC off	1.2	1.6		V	
	Total Harmonic Distortion	THD_2	$V_I = 68\text{dBm}$, ALC off		0.2	1	%	
	ALC Output Voltage	$V_{O(ALC)}$	$V_I = -20\text{dBm}$	0.75	0.95	1.35	V	
	ALC THD	THD_{ALC}	$V_I = -20\text{dBm}$		0.2	1.0	%	
	ALC Range	ΔV_{ALC}	$V_I = -60\text{dBm}$, + 3dB UP	40	50		dB	
	Cross Talk (ALC)	CT_3	$V_I = -50\text{dBm}$		- 55	- 40	dB	
RECORD TO PLAYBACK Cross Talk		CT_4	REC input = 0 PLAY output = 0.5V		- 55	- 40	dB	
Muting Range		MR	$V_I = -20\text{dBm}$		- 55	- 40	dB	

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TEST CIRCUIT

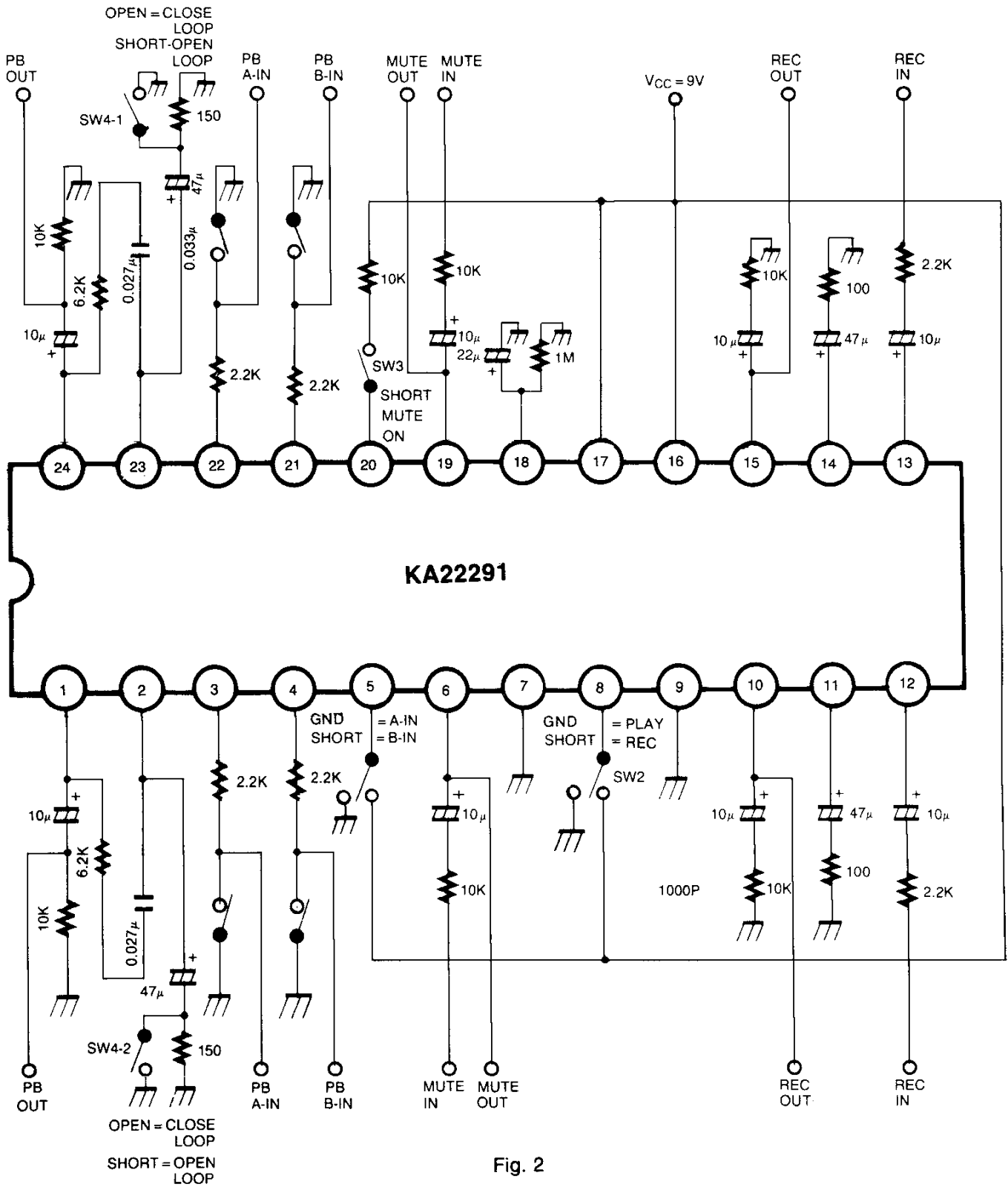


Fig. 2

* 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

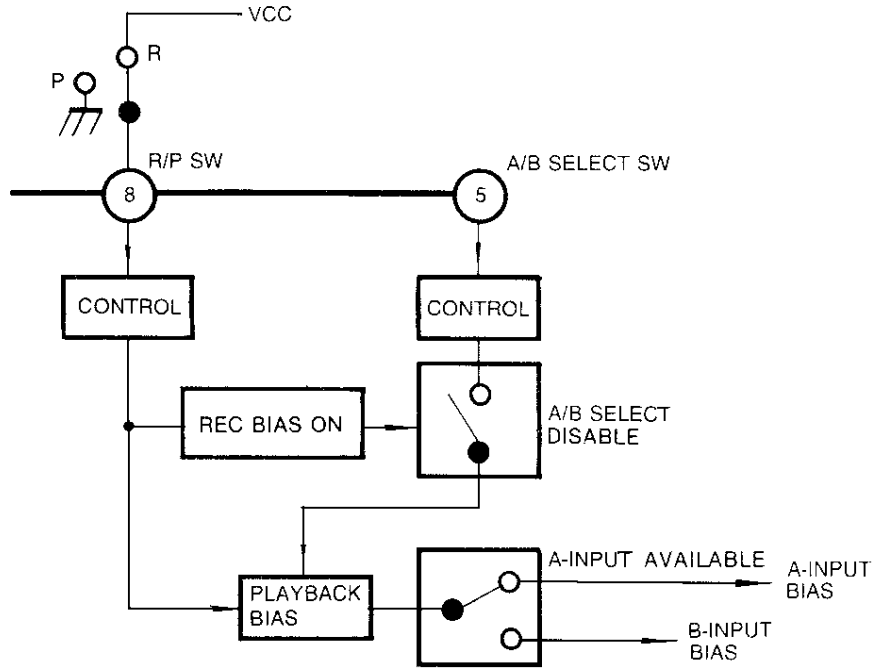


Fig. 3

B. PLAYBACK MODE SCHEMATIC

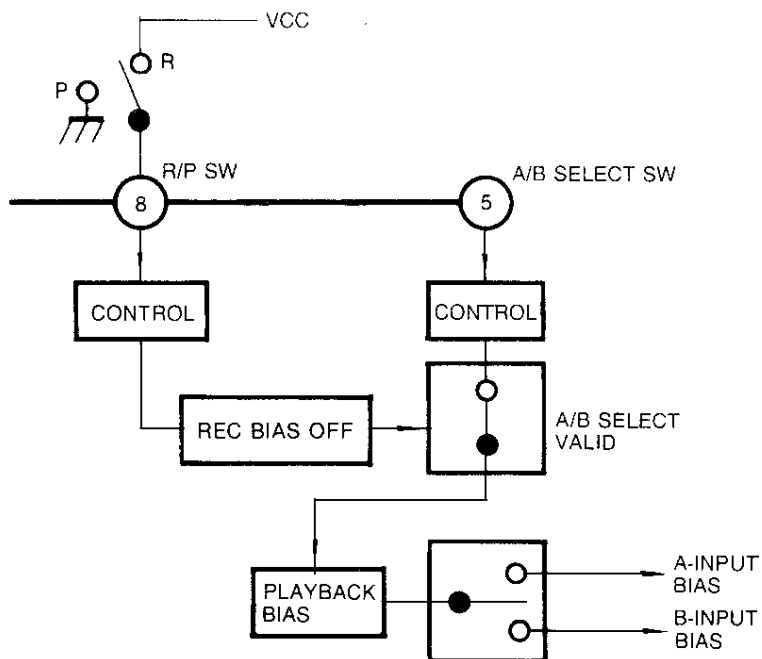


Fig. 4

* These specifications are subject to change without notice.

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

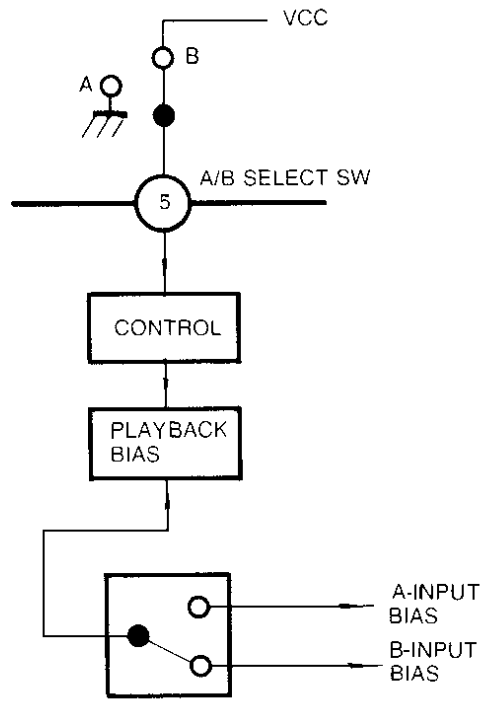
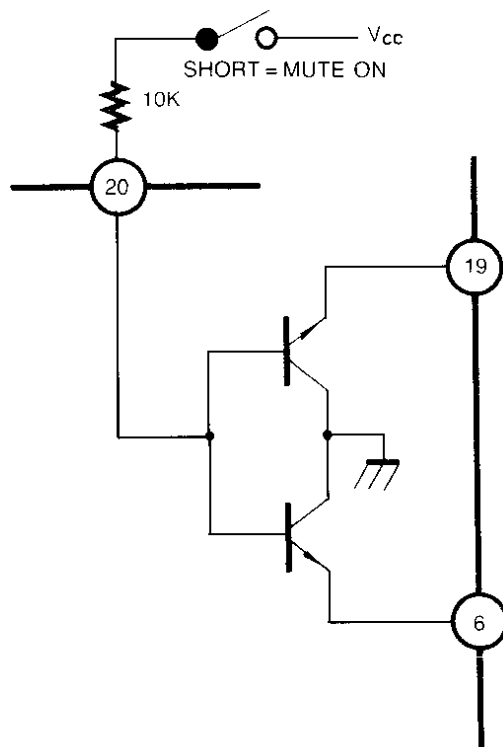


Fig. 5

3. MUTE SWITCH



*THIS CIRCUIT IS OPERATED ON REVERSE SATURATION MODE

Fig. 6

*These specification are subject to change without notice.



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