

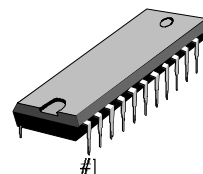
INTRODUCTION

The S1A0291X01 is a monolithic integrated circuit consisting of a dual input playback amplifier and a dual input record amplifier for double-deck or auto-reverse operation. 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: $V_{CC} = 4V — 12V$
- REC/PB power on quick start circuit
- Few external part required

24-SDIP-300



ORDERING INFORMATION

Device	Package	Operating Temperature
S1A0291X01-A0B0	24-SDIP-300	-25°C — +75°C

The diagram illustrates the internal architecture of the TDA1564Q audio IC. It features two main processing channels, labeled 1 and 2, each with its own input and output stages. The input stages include preamplifiers (PRE) and noise filters (N.F.). The output stages also incorporate preamplifiers and noise filters. A central mode control/bias circuit manages the operating conditions for both channels. An automatic level control (ALC) section is present, featuring a detector (ALC DET) and a time constant network. Various control pins are shown, including MUTE, R/P SW, and A/B SELECT SW. The diagram uses standard electronic symbols for resistors, capacitors, transistors, and logic gates. Pin numbers 1 through 24 are labeled around the perimeter, and internal nodes are numbered 1 through 14.

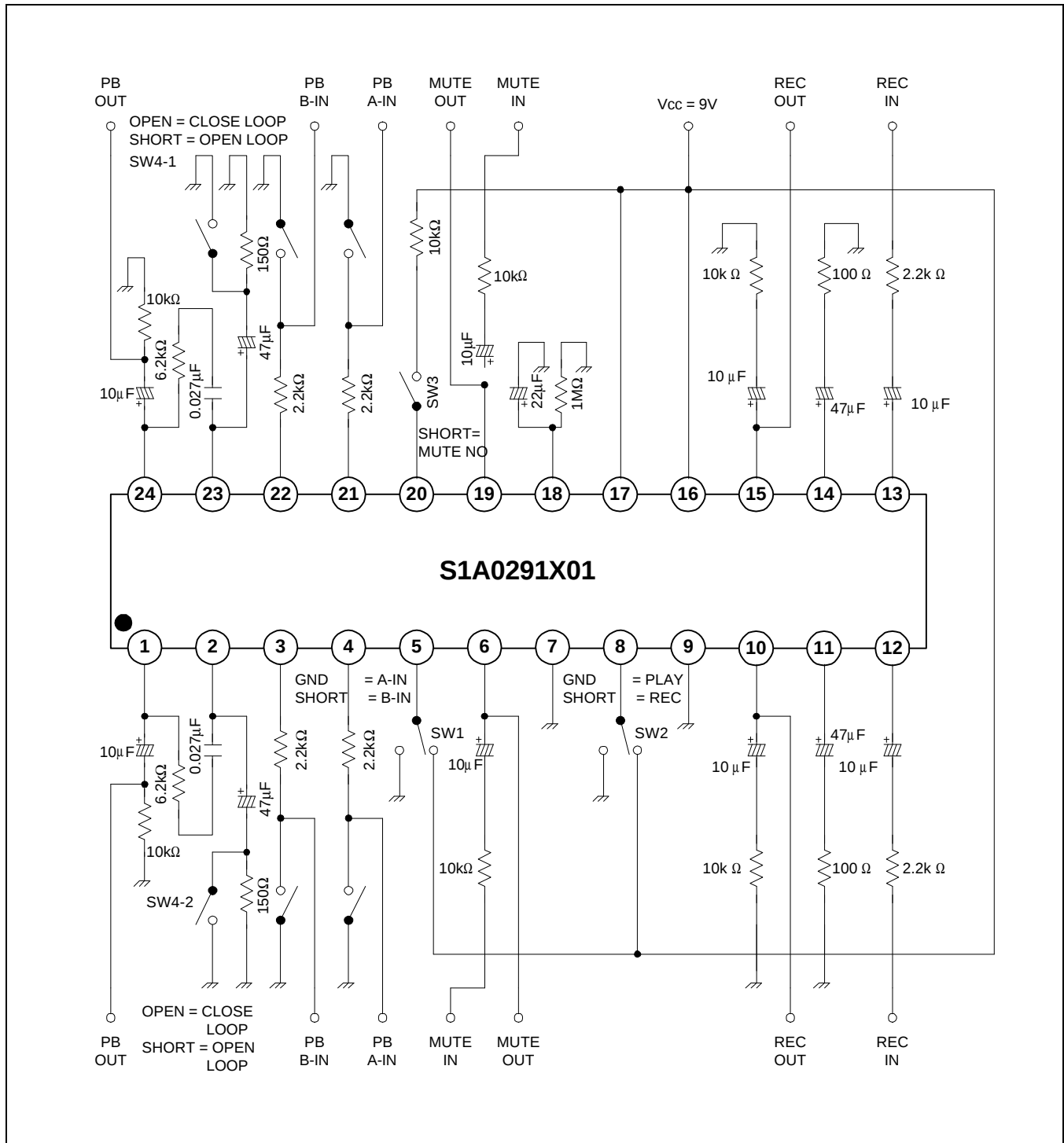
Characteristic	Symbol	Value	Unit
Supply Voltage	V _{CC}	12	V
Power Dissipation	P _D	1000	mW
Operating Temperature	T _{OPR}	−25 — +75	°C
Storage Temperature	T _{STG}	−55 — +125	°C

ELECTRICAL CHARACTERISTICS

(Ta = 25°C, V_{CC} = 9V, f = 1kHz, unless otherwise specified)

Characteristic		Symbol	Test Conditions	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	THD1	V _O = 0.2V, NAB	–	0.05	0.3	%
	Cross Talk	CH to CH	V _O = 0.5V, NAB	–	–55	–45	dB
		Ain to Bin	V _O = 0.5V, NAB	–	–55	–45	dB
	Equivalent Input Noise Voltage	V _{NI}	Fiter: 20Hz – 20kHz RG = 2.2kΩ, V _I = 0	–	1.2	2.2	μV
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	THD2	V _I = 0dBm, ALC off	–	0.2	1	%
	ALC Output Voltage	V _{O(ALC)}	V _I = -20dBm	0.75	0.95	1.35	V
	ALC THD	THD _{ALC}	V _I = -20dBm	–	0.2	1.0	%
	ALC Range	R _{ALC} (ALCR)	V _I = -60dBm, +3dB UP	40	50	–	dB
	Cross Talk (ALC)	CT3	V _I = -50dBm	–	–55	–40	dB
Record TO Playback Cross Talk		CT4	REC input = GND PLAY output = 0.5V	–	–60	–40	dB
Muting Range		MR	V _I = -20dBm	–	–55	–40	dB

TEST CIRCUIT



NOTE: These specifications are subject to change without notice.

APPLICATION INFORMATION

1. R/P SWITCH

Apply R/P input voltage at PIN 8.

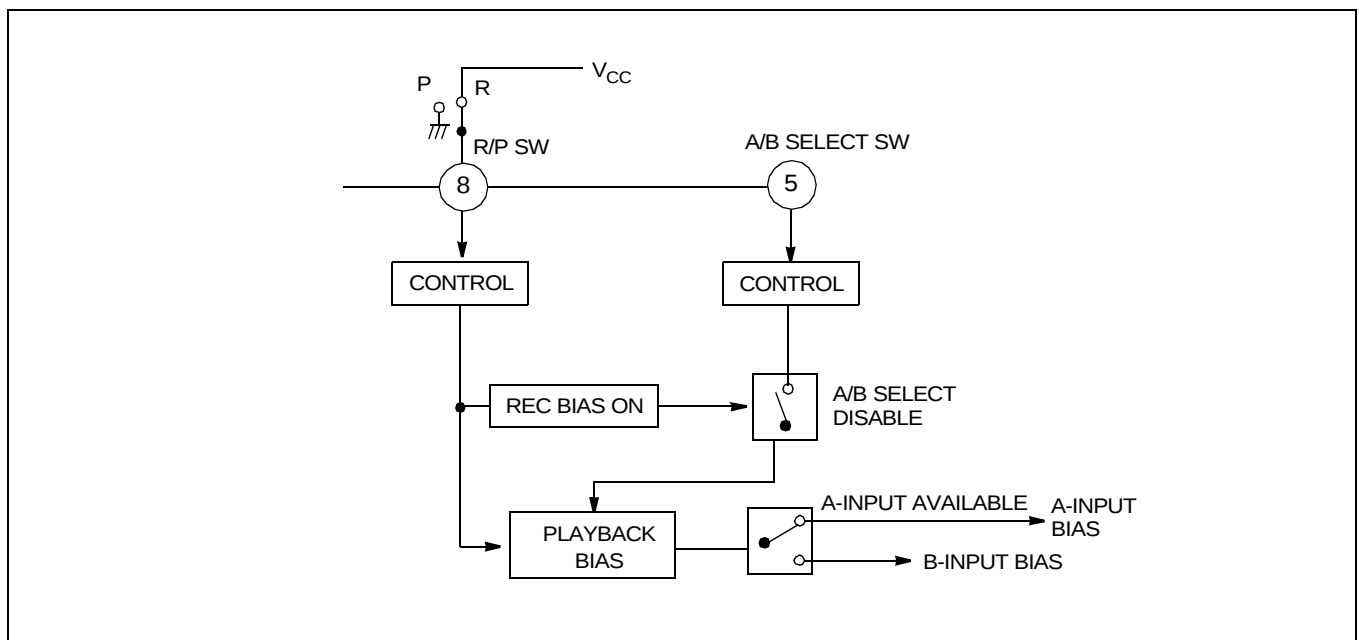
PLAY: 0V (GND)

REC: 4.5V – 12V (Do not apply above 13V).

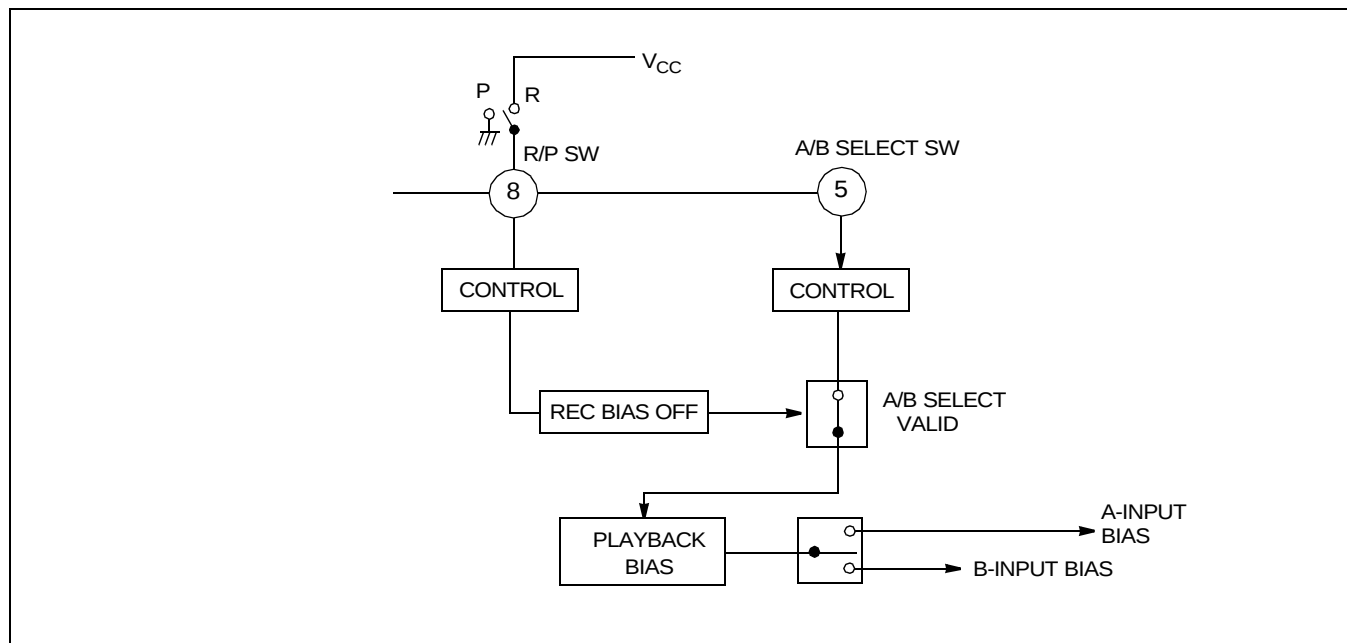
Only valid A/B input select in playback mode.

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

A. Record Mode Schematic

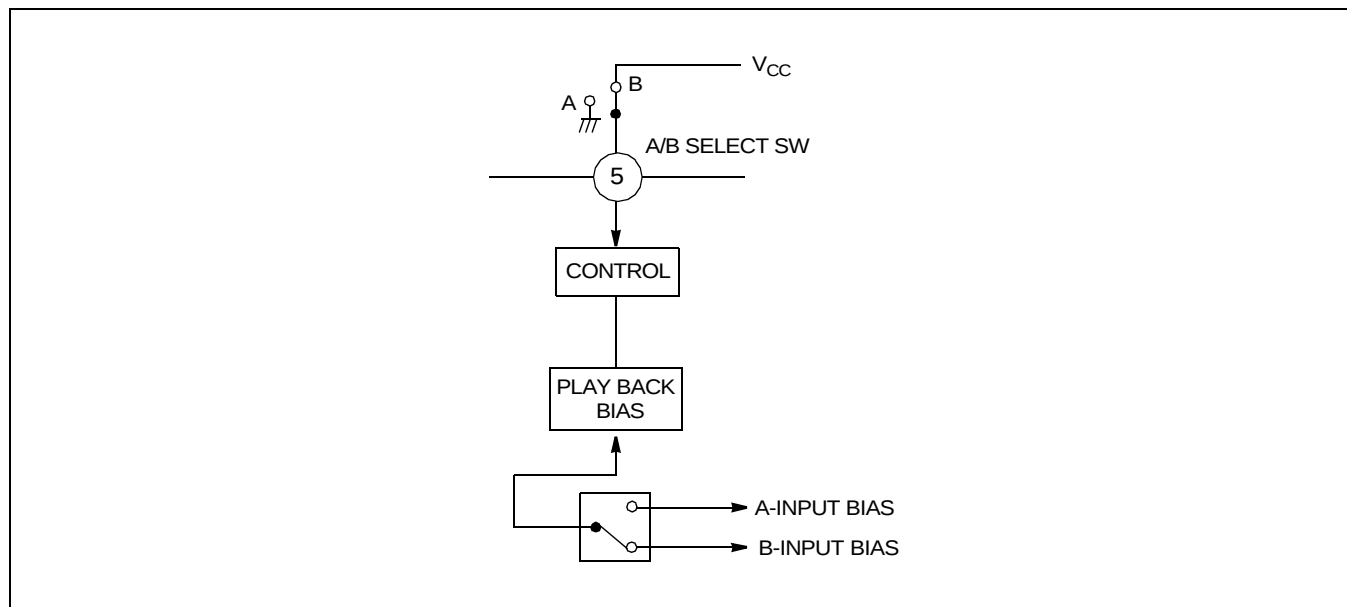


B. Playback Mode Schematic

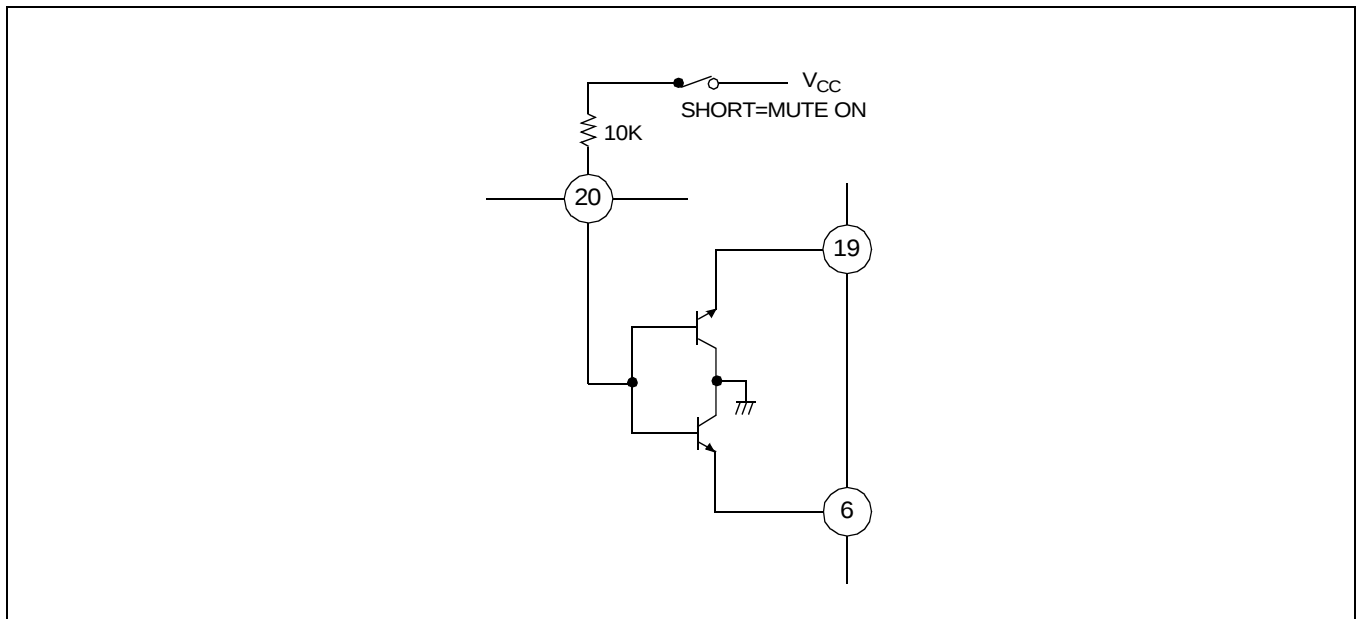


NOTE: These specification are object to change without notice.

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



3. MUTE SWITCH

**NOTES:**

1. THIS CIRCUIT IS OPERATED ON REVERSE SATURATION MODE
2. These specifications are subject to change without notice.

APPLICATION CIRCUIT

