

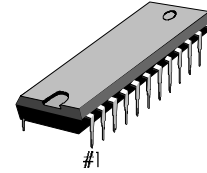
## INTRODUCTION

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

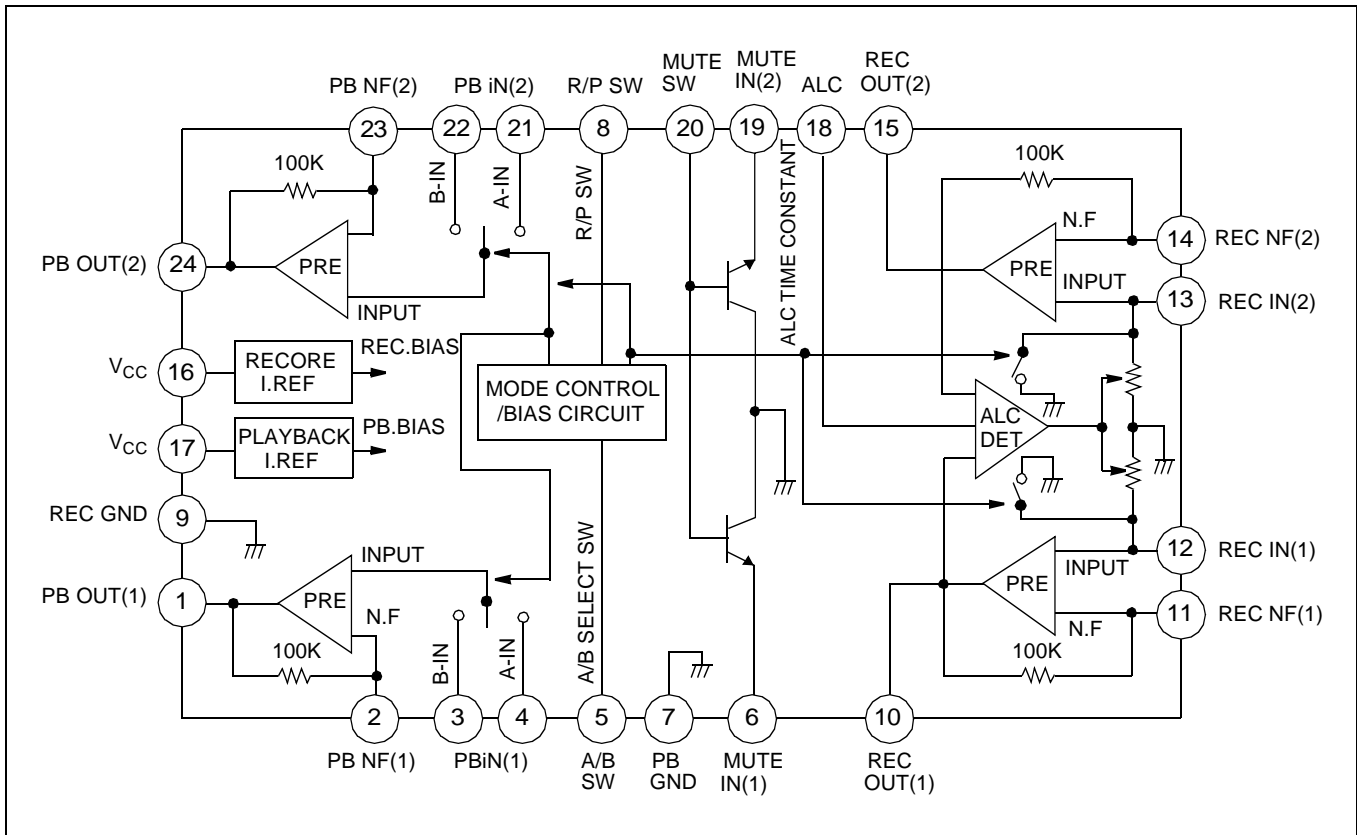
24-SDIP-300



## ORDERING INFORMATION

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

**BLOCK DIAGRAM**



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

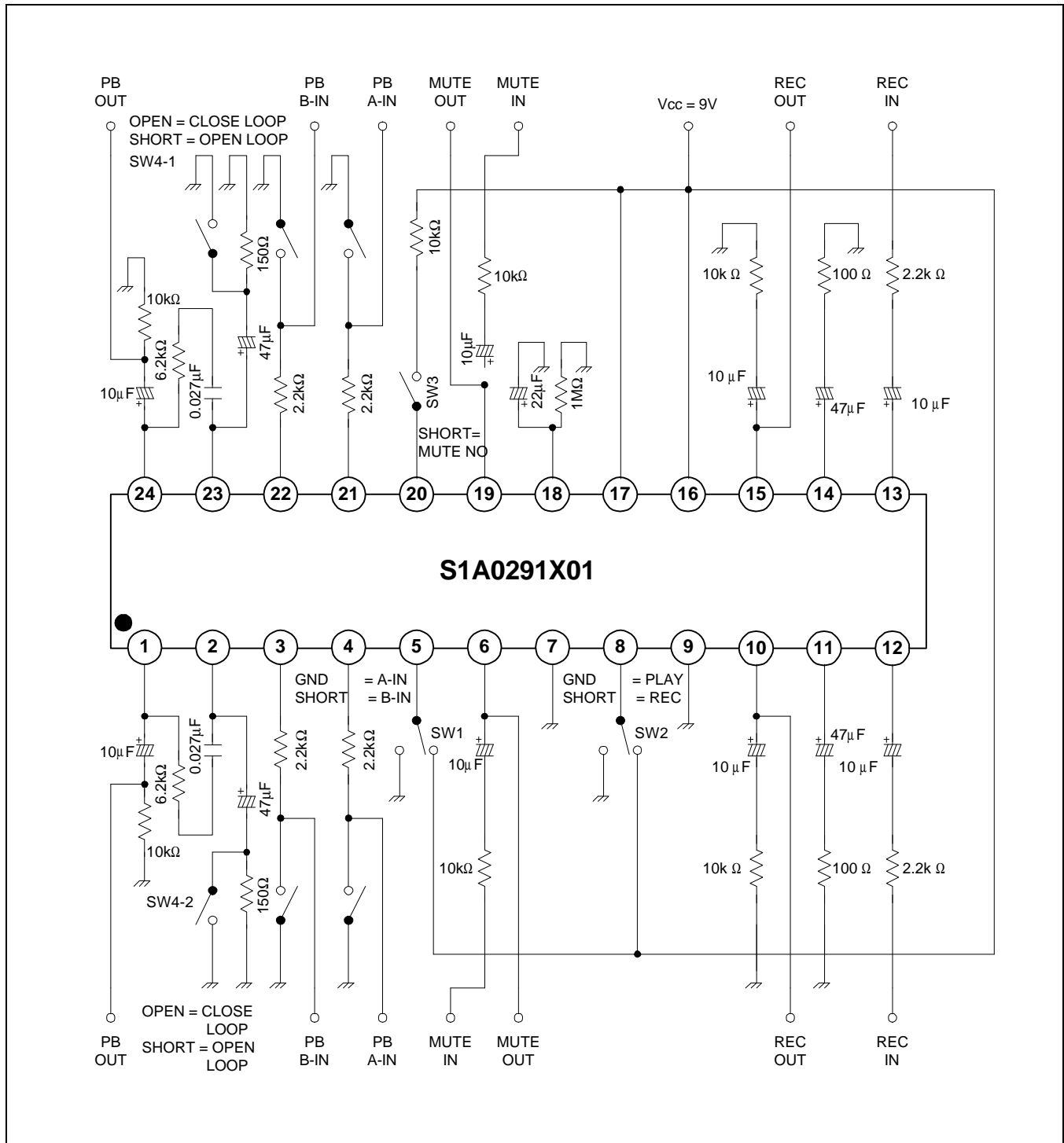
Characteristic	Symbol	Value	Unit
Supply Voltage	V <sub>CC</sub>	12	V
Power Dissipation	P <sub>D</sub>	1000	mW
Operating Temperature	T <sub>OPR</sub>	-25 — +75	°C
Storage Temperature	T <sub>STG</sub>	-55 — +125	°C

## ELECTRICAL CHARACTERISTICS

(Ta = 25°C, V<sub>CC</sub> = 9V, f = 1kHz, unless otherwise specified)

Characteristic		Symbol	Test Conditions	Min.	Typ.	Max.	Unit	
Circuit Current		I <sub>CCQ</sub>	V <sub>I</sub> = 0, REC MODE	10	18	26	mA	
PLAYBACK	Open Loop Voltage Gain	G <sub>VO</sub>	V <sub>I</sub> = -80dBm	60	90	-	dB	
	Output Voltage	V <sub>O1</sub>	THD = 1%, NAB	0.75	1.2	-	V	
	Total Harmonic Distortion	THD1	V <sub>O</sub> = 0.2V, NAB	-	0.05	0.3	%	
	Cross Talk	CH to CH	CT1	V <sub>O</sub> = 0.5V, NAB	-	-55	-45	dB
		Ain to Bin	CT2	V <sub>O</sub> = 0.5V, NAB	-	-55	-45	dB
Equivalent Input Noise Voltage		V <sub>NI</sub>	Fiter: 20Hz – 20kHz RG = 2.2kΩ, V <sub>I</sub> = 0	-	1.2	2.2	μV	
RECORD	Close Loop Voltage Gain	G <sub>VC</sub>	V <sub>I</sub> = 68dBm, ALC off	58	60	62	dB	
	Output Voltage	V <sub>O2</sub>	THD = 1%, ALC off	1.2	1.6	-	V	
	Total Harmonic Distortion	THD2	V <sub>I</sub> = 0dBm, ALC off	-	0.2	1	%	
	ALC Output Voltage	V <sub>O(ALC)</sub>	V <sub>I</sub> = -20dBm	0.75	0.95	1.35	V	
	ALC THD	THD <sub>ALC</sub>	V <sub>I</sub> = -20dBm	-	0.2	1.0	%	
	ALC Range	R <sub>ALC</sub> (ALCR)	V <sub>I</sub> = -60dBm, +3dB UP	40	50	-	dB	
	Cross Talk (ALC)	CT3	V <sub>I</sub> = -50dBm	-	-55	-40	dB	
Record TO Playback Cross Talk		CT4	REC input = GND PLAY output = 0.5V	-	-60	-40	dB	
Muting Range		MR	V <sub>I</sub> = -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.

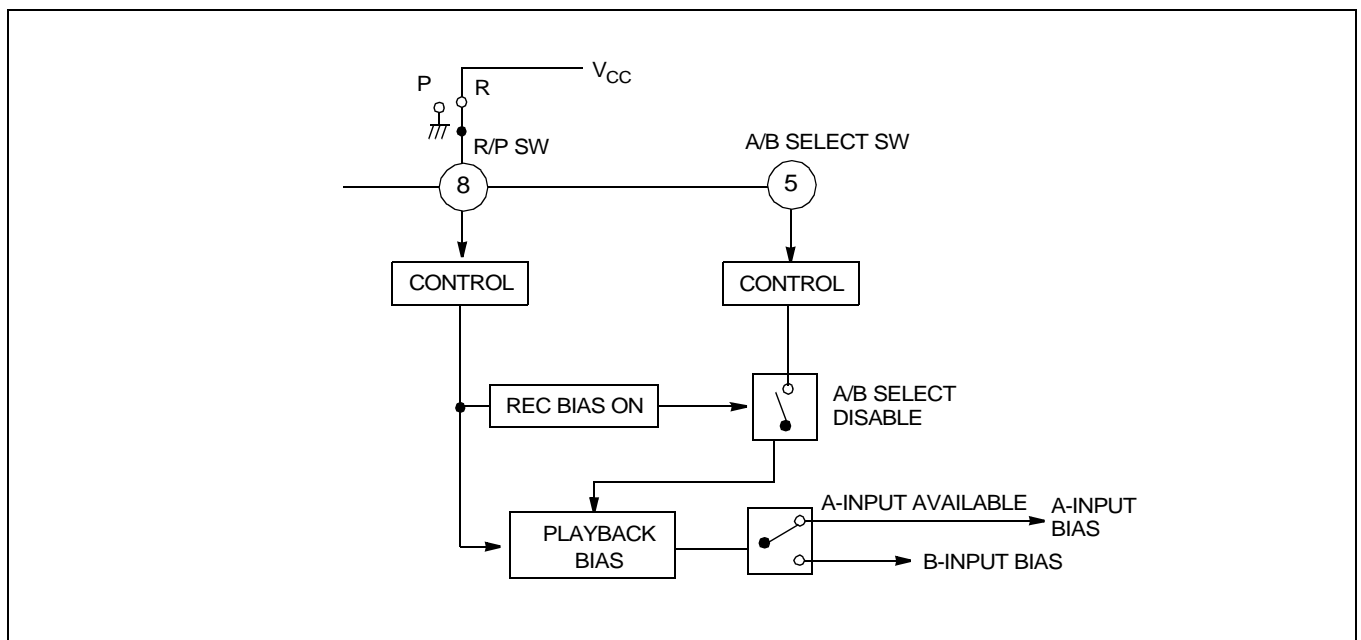
PLAY: 0V (GND)

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

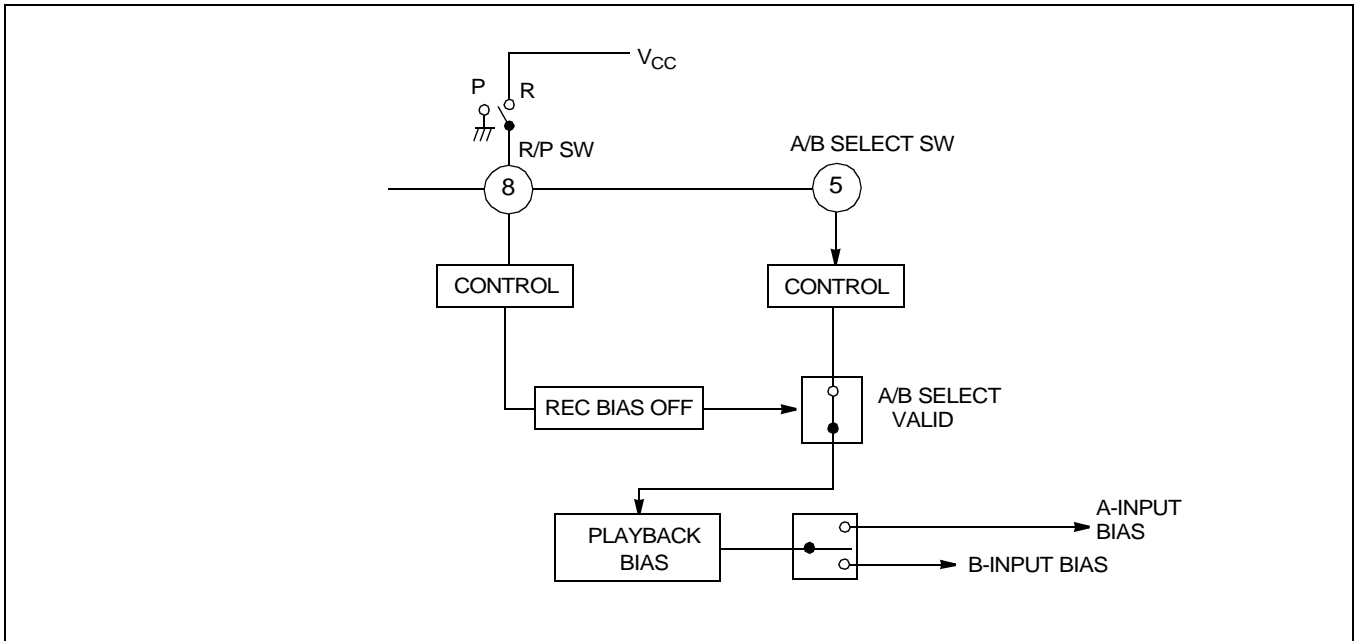
Only valid A/B input select in playback mode.

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

### A. Record Mode Schematic

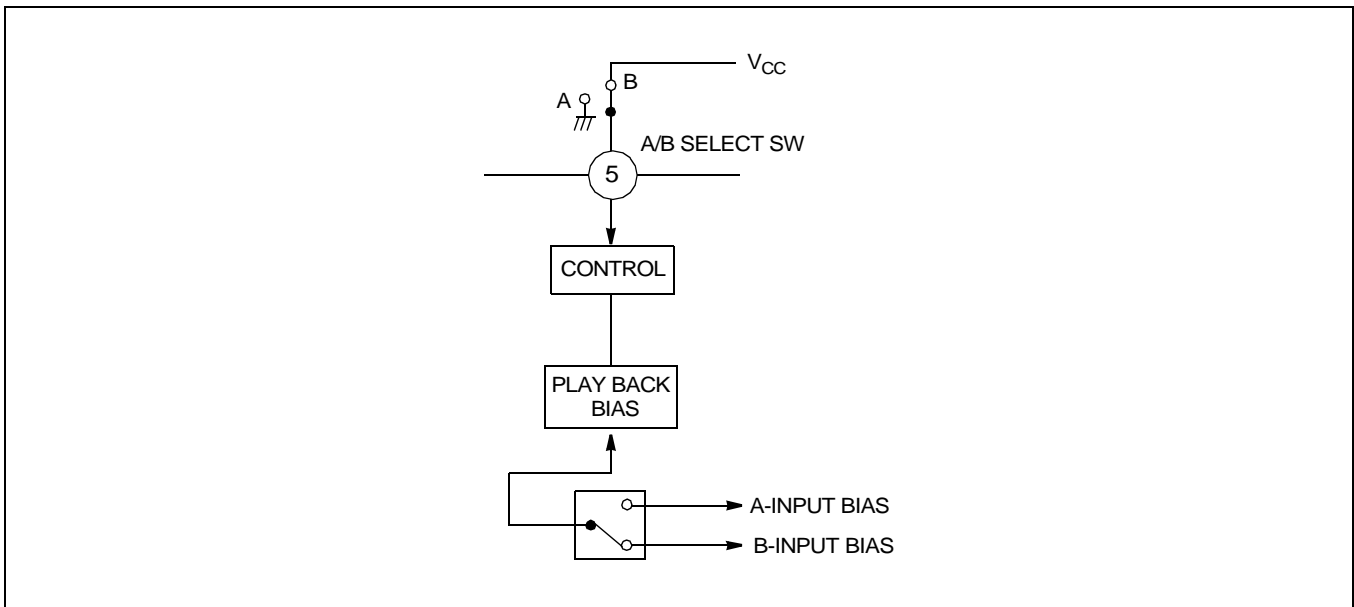


**B. Playback Mode Schematic**

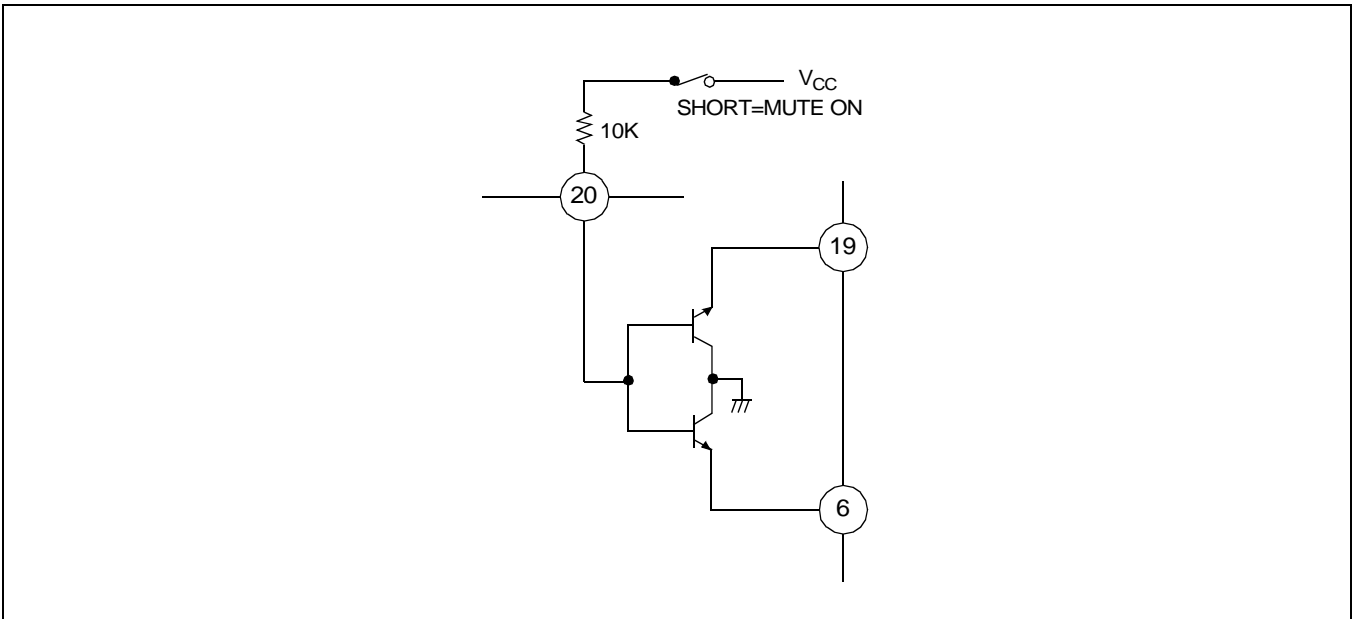


**NOTE:** These specification are object to change without notice.

**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

