

# KA2271B

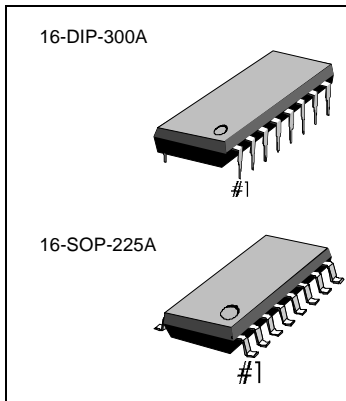
# DOLBY B-TYPE NR PROCESSOR

## INTRODUCTION

The KA2271B is a monolithic integrated circuit designed for use in Dolby®B-type noise reduction systems.

## FEATURES

- Few external components
- Low quiescent circuit current (typ  $I_{CCQ} = 5.3mA$ )
- High crosstalk rejection ratio
- Built in NR-switch, REC/PB-switch
- Recommended supply voltage :  $V_{CC} = 8V - 16V$



## ORDERING INFORMATION

Device	Package	Operating Temperature
KA2271B	16-DIP-300A	-30°C ~ +85°C
KA2271BD	16-SOP-225A	

## BLOCK DIAGRAM

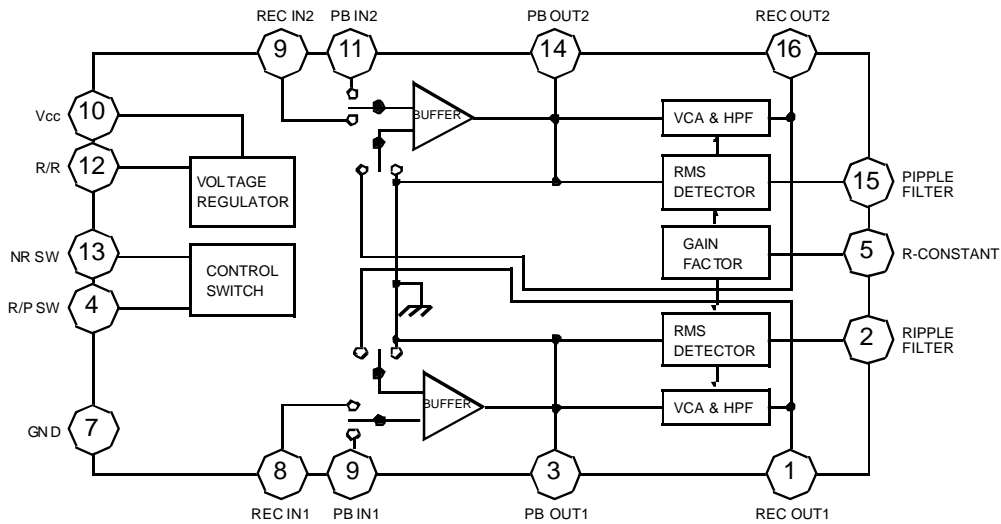


Fig. 1

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# KA2271B

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## PIN CONFIGURATION

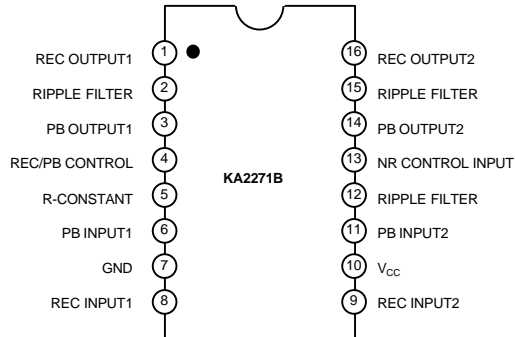


Fig. 2

## ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub> = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V <sub>CC</sub>	16	V
Power Dissipation	P <sub>D</sub>	750	mW
Operating Temperature	T <sub>OPR</sub>	-30 ~ +85	°C
Storage Temperature	T <sub>STG</sub>	-40 ~ +125	°C

Note : Derated above T<sub>a</sub> = 25 °C in the proportion of 10mW/°C

## ELECTRICAL CHARACTERISTICS

(Ta = 25°C, VCC = 12V, f = 1KHz, 0dB = 245mW (-10dBm) at REC OUT, unless otherwise specified)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Quiescent Circuit Current	I <sub>CCQ</sub>	REC mode, NR-off, V <sub>I</sub> = 0	3.5	5.6	7	mA
Buffer Voltage Gain	G <sub>V</sub>	REC mode, PB out = 0dB	25	27	29	dB
NR-REC Boost	G <sub>V(BST)</sub>	RECout = -25dB, f = 500Hz	1.4	2.9	4.4	dB
		RECout = -25dB, f = 2KHz	5.5	7.0	8.5	dB
		RECout = -25dB, f = 5KHz	3.9	5.4	6.9	dB
		RECout = -40dB, f = 10KHz	9.0	10.4	11.9	dB
		RECout = 0dB, f = 10KHz	-1.1	0.4	1.9	dB
NR-Boost Balance	CB	NR-REC boost CH to ratio		0	1	dB
MAX.RECout level	V <sub>O(MAX)</sub>	REC mode, NR-off THD = 1%	14	15.9		dB
REC Output Voltage	THD	REC mode, NR-off RECout = 10dB		0.04	0.2	%
		REC mode, NR-on RECout = 10dB		0.04	0.3	%
NR-effect S/N	S/N	REC mode, R <sub>G</sub> = 2.2K Filter = CCIR/ARM	65	69		dB
Crosstalk	CT	NR-off OUTPUT = 0dB PB to REC		-70	-60	dB
		CH to CH, NR-off OUTPUT = 0dB		-70	-60	dB
Input Impedance	Z <sub>I</sub>		30	47	60	KΩ
Switch Control Voltage	V <sub>CTL</sub>	High mode	2.4			V
		Low mode	0		0.4	V
Input Level	REC V <sub>I</sub>	REC mode, NR-off RECout = 0dB	-32	-30	-28	dBm
	PB V <sub>I</sub>	PB mode, NR-off RECout = 0dB	-32	-30	-28	dBm
Output Level	V <sub>O</sub>	REC mode, NR-off RECout = 0dB Testpoint = PB output	489	549	616	m V

TEST CIRCUIT

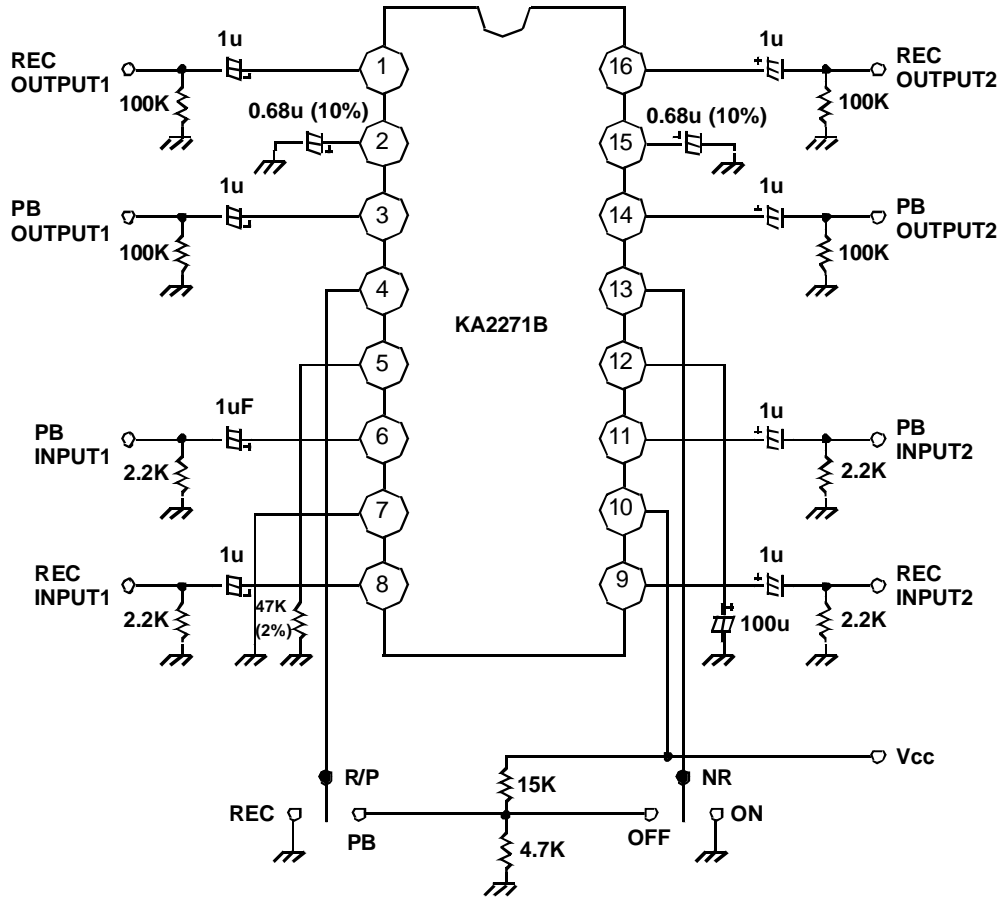
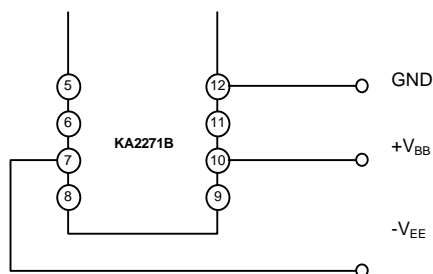


Fig. 3

## APPLICATION INFORMATION

## 1) POWER SUPPLY

The KA2271B can be operated at 8V ~ 16V in case of single and  $\pm 4V \sim \pm 8V$  in dual power supply.



Dual power connection

Fig. 4

## 2) SWITCH CONTROL

All function of KA2271B are controlled by internal electronic switches. The function switch is operated by D.C. voltage of NR and R.P control pins.

NR, R/P	V <sub>H</sub>	V <sub>L</sub>
Condition	PB	REC
	NR-off	NR-on

Single	Dual Power
$2.4V \geq V_H$	$V_H \geq V_{EE} + 2.4V$
$0.4V \geq V_L$	$V_{EE} + 0.4V \geq V_L$

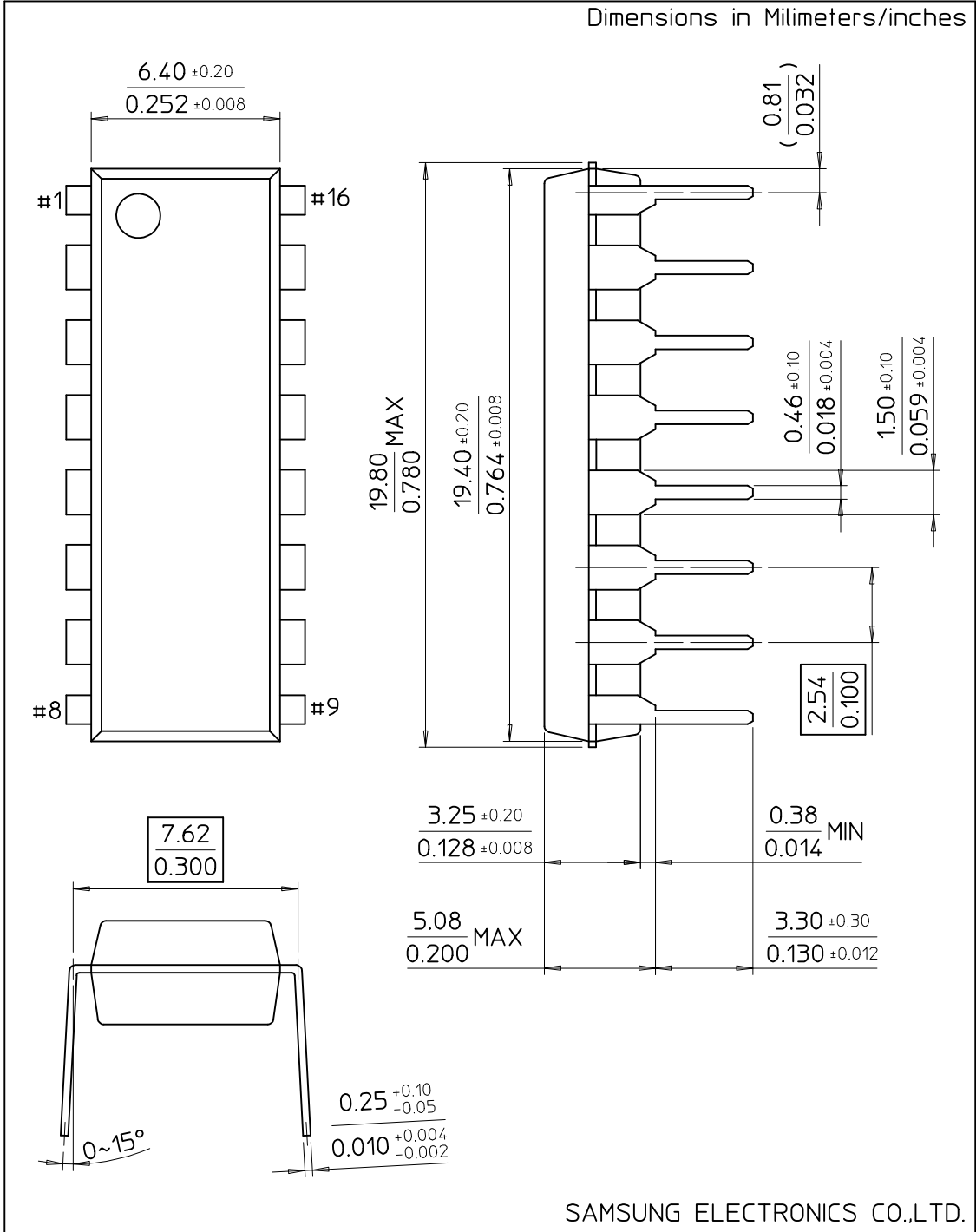
## VOLTAGE

## 3) REFERENCE LEVEL

The reference output level of Dolby noise reduction system is defined as Dolby level. The Dolby level of KA2271B is 245mV (-10dBm) at  $f = 400\text{Hz}$ .

# 16-DIP-300A

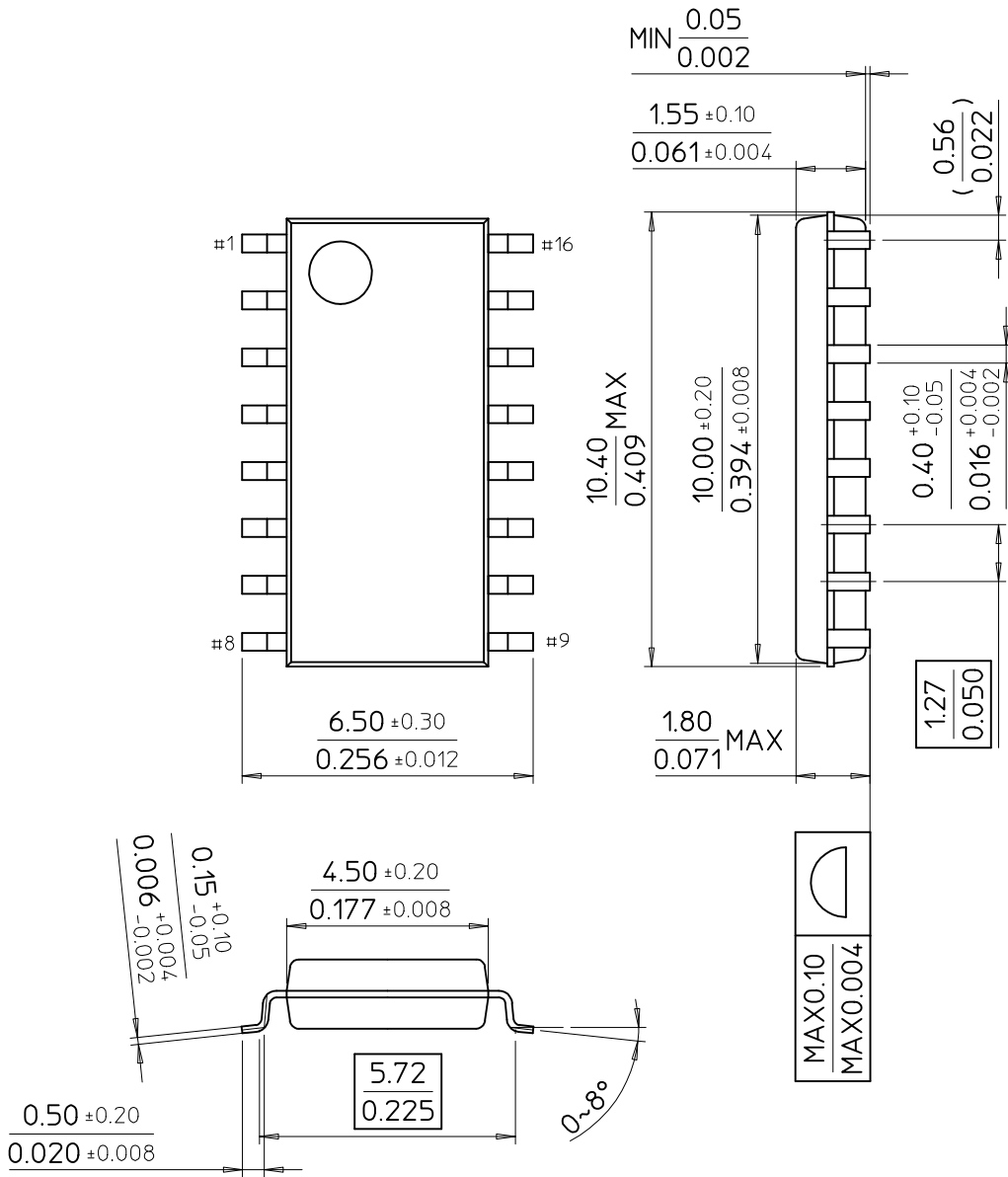
Dimensions in Millimeters/inches



SAMSUNG ELECTRONICS CO.,LTD.

# 16-SOP-225A

Dimensions in Millimeters/inches



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