KA2271B DOLBY B-TYPE NR PROCESSOR

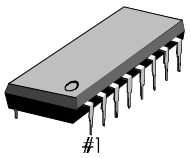
INTRODUCTION

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

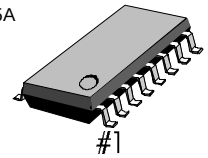
FEATURES

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

16-DIP-300A



16-SOP-225A



ORDERING INFORMATION

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

BLOCK DIAGRAM

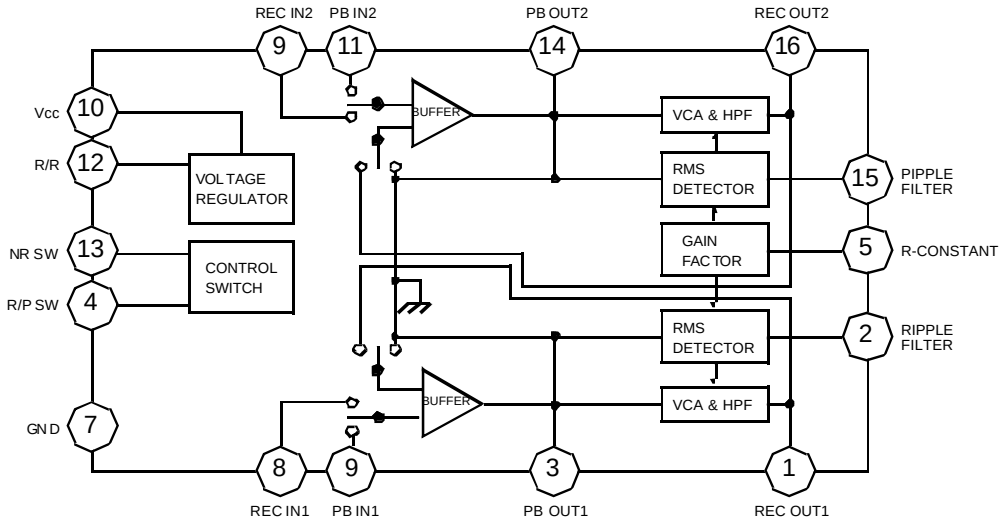


Fig. 1

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PIN CONFIGURATION

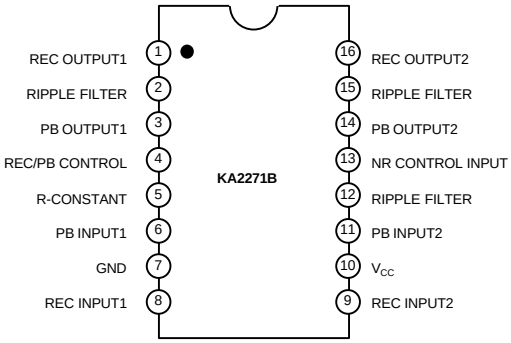


Fig. 2

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	16	V
Power Dissipation	P_D	750	mW
Operating Temperature	T_{OPR}	-30 ~ +85	°C
Storage Temperature	T_{STG}	-40 ~ +125	°C

Note : Derated above Ta = 25 °C in the propation 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 Citcuit Current	I_{CCQ}	REC mode, NR-off, V_I = 0	3.5	5.6	7	mA
Buffer Voltage Gain	G_V	REC mode, PB out = 0dB	25	27	29	dB
NR-REC Boost	$G_{V(BST)}$	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	$V_{O\ (MAX)}$	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_G = 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_I		30	47	60	KΩ
Switch Control Voltage	V_{CTL}	High mode	2.4			V
		Low mode	0		0.4	V
Input Level	REC V_I	REC mode, NR-off RECout = 0dB	-32	-30	-28	dBm
	PB V_I	PB mode, NR-off RECout = 0dB	-32	-30	-28	dBm
Output Level	V_O	REC mode, NR-off RECout = 0dB Testpoint = PB output	489	549	616	m V

TEST CIRCUIT

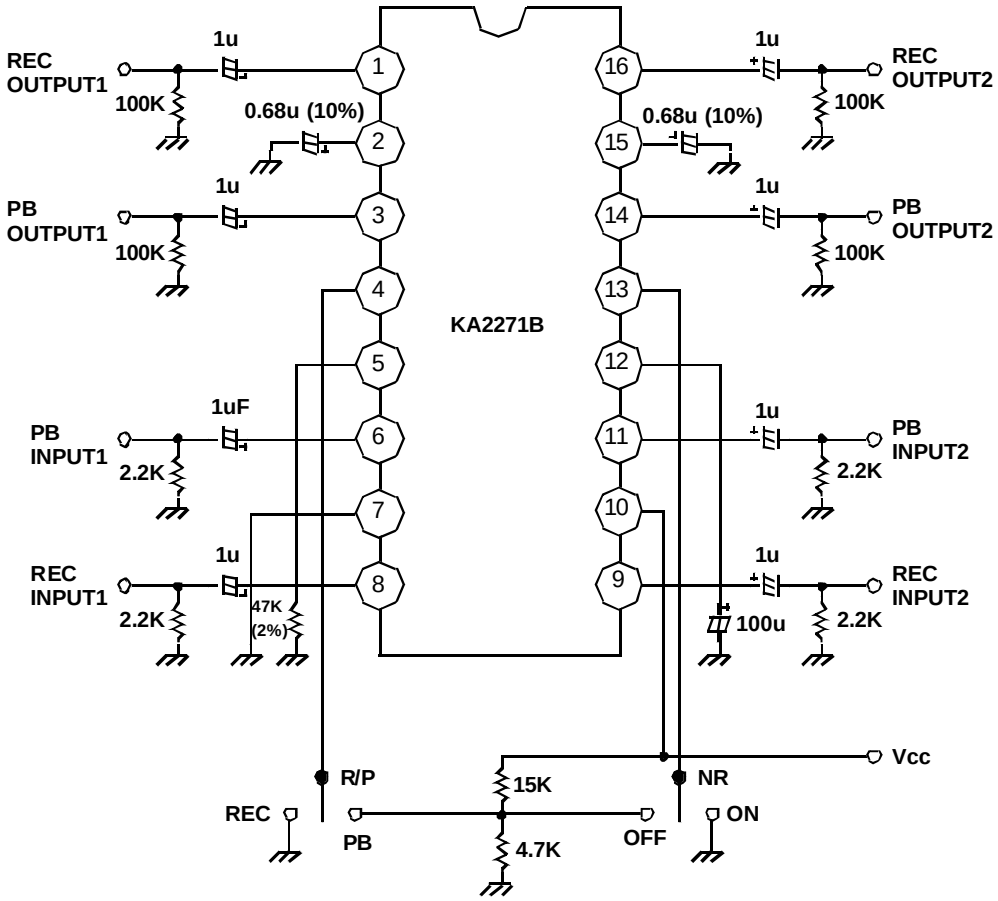
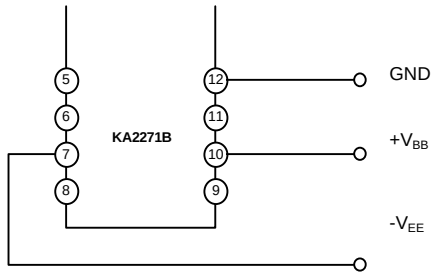


Fig. 3

APPLICATION INFORMATION

1) POWER SUPPLY

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



Dual power connection

Fig. 4

2) SWITCH CONTROL VOLTAGE

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

NR, R/P	V_H	V_L
Condition	PB	REC
	NR-off	NR-on

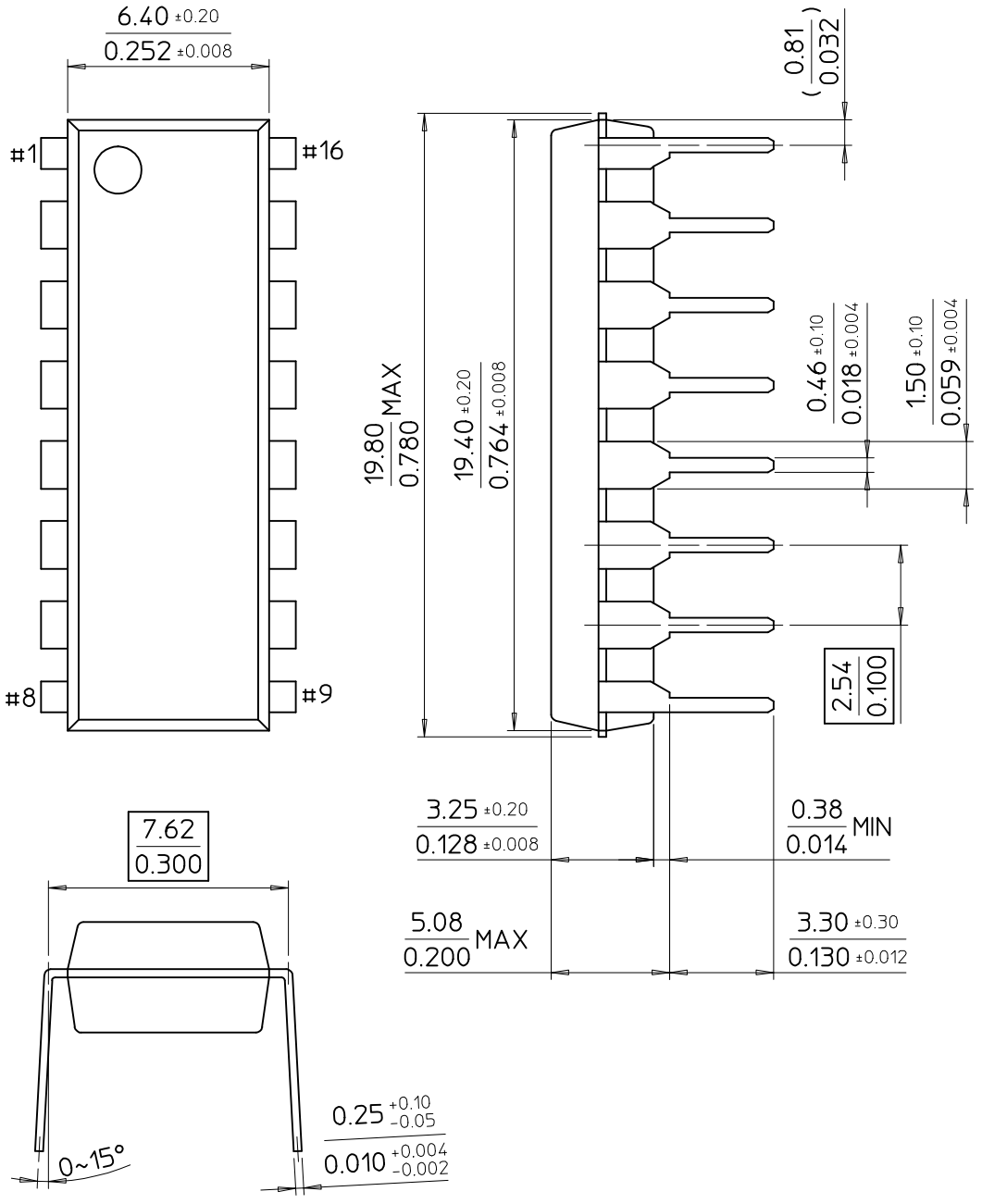
Single	Dual Power
$2.4V \geq V_H$	$V_H \geq V_{EE} + 2.4V$
$0.4V \geq V_L$	$V_{EE} + 0.4V \geq V_L$

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 = 400Hz.

16-DIP-300A

Dimensions in Milimeters/inches



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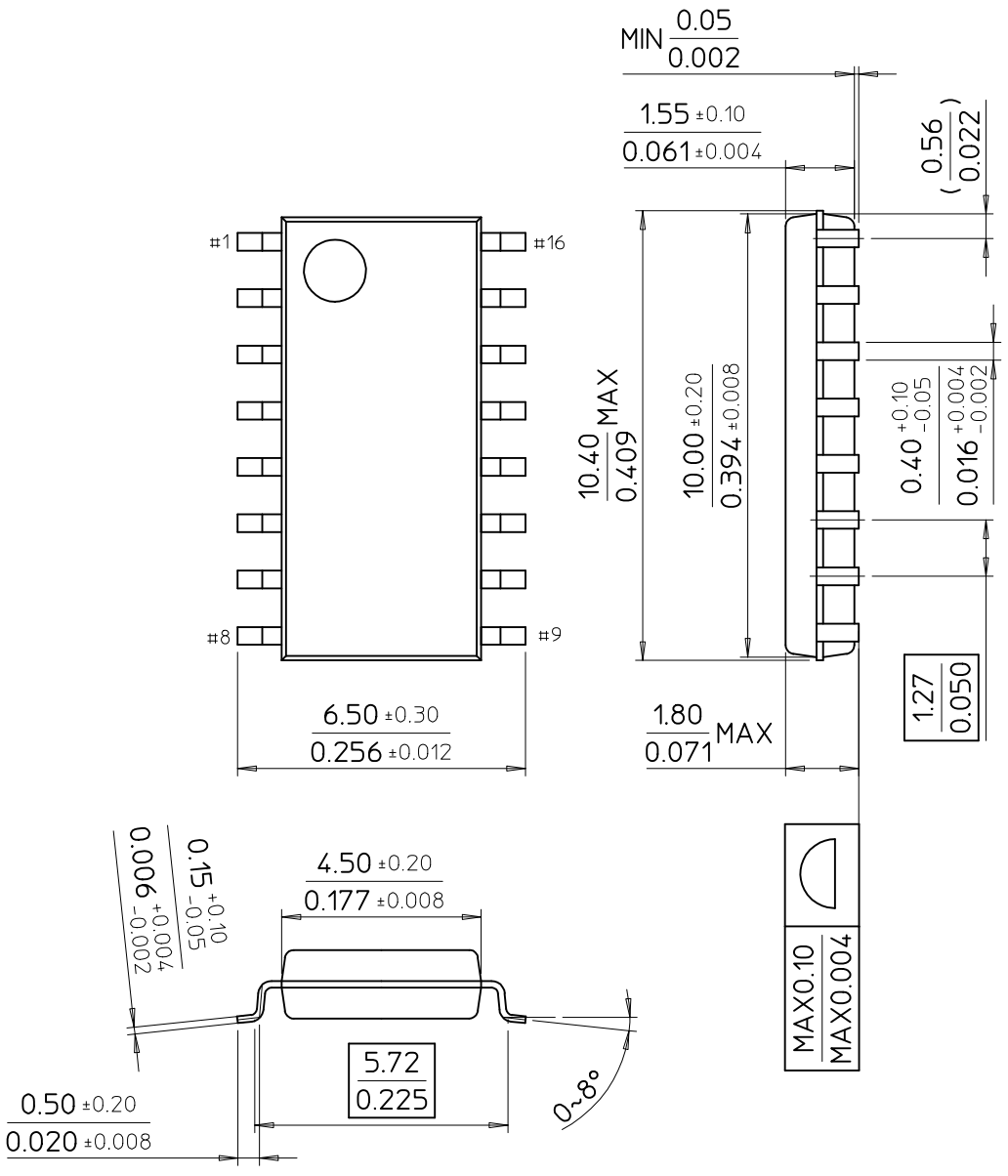
16-SOP-225A

Dimensions in Milimeters/inches



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