

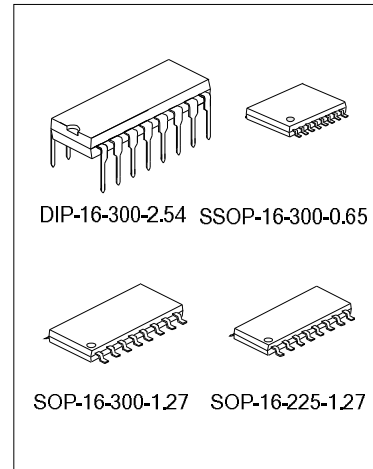
AUDIO PRE-AMPLIFIER&POWER AMPLIFIER (110mW X 2)

DESCRIPTION

The SA1622/S/A/B is a monolithic audio power amplifier IC. This IC include pre-amplifier, power amplifier and electrical volume. Option stereo and BTL power amplifier by OPT pin.

FEATURES

- * Option stereo and BTL power amplifier by OPT pin.
- * Built-in electrical volume
- * Built-in ripple filter
- * Audio Power amplifier output
- * Stereo mode
- SA1622S/A/B :110 mW (Typ.), VCC=3 V, RL=8Ω
- SA1622:450 mW (Typ.), VCC=6 V, RL=8 Ω
- * BTL mode
- SA1622S/A/B:320 mW (Typ.), VCC=3 V, RL=8 Ω
- SA1622:360 mW (Typ.), VCC=3 V, RL=8 Ω



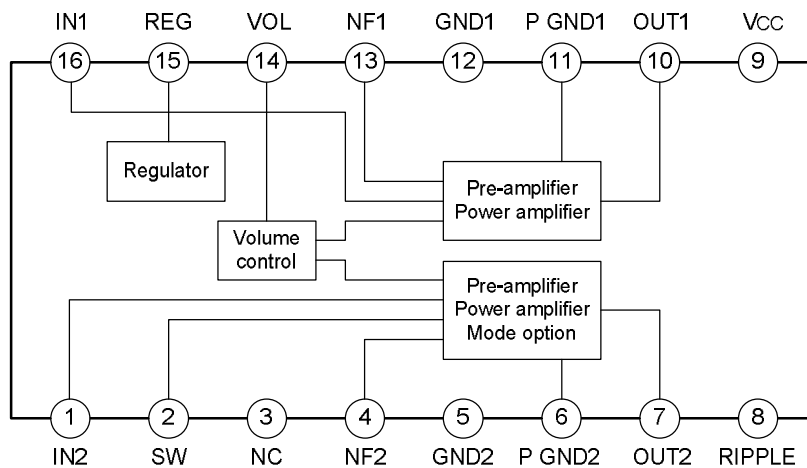
ORDERING INFORMATION

Part No.	Package
SA1622	DIP-16-300-2.54
SA1622S	SOP-16-300-1.27
SA1622A	SOP-16-225-1.27
SA1622B	SSOP-16-300-0.65

APPLICATION

- * Suitable for stereo and BTL audio power amplifier radios and clock radios and headphone radios and Walkman etc.

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (T_{amb}=25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V _{CC}	8	V
Operating Temperature	T _{opr}	-10~+60	°C
Storage Temperature	T _{stg}	-65~+150	°C
Allow Power Dissipation	P _D	410(SA1622S)	mW
		1200(SA1622)	mW
		400(SA1622A)	mW
		350(SA1622B)	mW

ELECTRICAL CHARACTERISTICS

(T_{amb}=25°C, other wise specified, SA1622: V_{CC}=6V; SA1622S/A/B: V_{CC}=3V)

Characteristic	Symbol	Test conditions	Min.	Typ.	Max.	Unit	
Stereo Mode							
Supply Voltage	V _{CC}	SA1622	1.8		7.0	V	
		SA1622S/A/B	1.8		4.5	V	
Circuit Current During No Signal	I _D	Circuit current during no signal	SA1622	1.0	3.0	8.2	mA
			SA1622S/A/B	1.0	3.0	7.7	
Audio Voltage Gain Lch	GV(Lch)	-40dBm 1kHz	SA1622	28	33.7	38	dB
			SA1622S/A/B	27	32.6	36	
Audio Voltage Gain Rch	GV(Rch)	-40dBm 1kHz	SA1622	28	33.7	38	dB
			SA1622S/A/B	27	32.6	36	
Channel Balance	B _{ch}	L and R channel balance	-3	0	3	dB	
Attenuation Lch	AV(Lch)	-40dBm 1kHz Output level difference between Max volume and half volume	SA1622	1.5	5.8	12	dB
			SA1622S/A/B	1.0	4.3	12	
Attenuation Rch	AV(Rch)	-40dBm 1kHz Output level difference between Max volume and half volume	SA1622	1.5	5.8	12	dB
			SA1622S/A/B	1.0	4.3	12	
EIAJ Output Lch	PO(Lch)	-20dBm 1kHz, RL=8Ω Output level where THD=10%	SA1622	350	450		mW
			SA1622S/A/B	90	110		

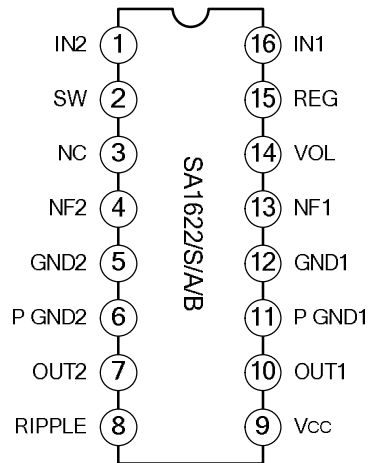
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Characteristic	Symbol	Test conditions	Min.	Typ.	Max.	Unit	
EIAJ Output Rch	PO(Rch)	-20dBm 1kHz, RL=8Ω Output level where THD=10%	SA1622	350	450	mW	
			SA1622S/A/B	90	110		
Audio Distortion Factor Lch	THD(Lch)	-20dBm 1kHz, RL=8Ω Distortion factor when output is 50mW		0.7	2.5	%	
Audio Distortion Factor Rch	THD(Rch)	-20dBm 1kHz, RL=8Ω Distortion factor when output is 50mW		0.7	2.5	%	
Residual Noise Level Lch	VD(Lch)	Noise level during no signal at Max volume		-65	-60	dBm	
Residual Noise Level Rch	VD(Rch)	Noise level during no signal at Max volume		-65	-60	dBm	
Crosstalk L→R	CT(LR)	-40dBm 1kHz Rch output level when Lch is input		-60	-56	dBm	
Crosstalk R → L	CT(RL)	-40dBm 1kHz Lch output level when Rch is input		-60	-56	dBm	
BTL mode VCC=3V							
Supply Voltage	VCC	SA1622 ; SA1622S	1.8	3	4.5	V	
Circuit Current During No Signal	ID	Circuit current during no signal		3	7	mA	
Output DC Bias Lag	VBL	Output DC bias lag		0	30	mV	
Audio Voltage Gain	GV	-40dBm 1kHz	SA1622	34	38	42	dB
			SA1622S/A/B	30	37	43	
Attenuation	AV	-40dBm 1kHz Output level difference between Max volume and half volume	SA1622	1.5	6.0	12	dB
			SA1622S/A/B	1.0	5.0	12	
EIAJ Output	PO	-20dBm 1kHz, RL=8Ω Output level where THD=10%	SA1622	260	360	mW	
			SA1622S/A/B	220	320		
Audio Distortion Factor	THD	-20dBm 1kHz, RL=8Ω Distortion Factor when output is 50mW			2.5	%	
Residual Noise Level	VD	Noise level during no signal at Max volume		-65	-62	dBm	

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PIN CONFIGURATION



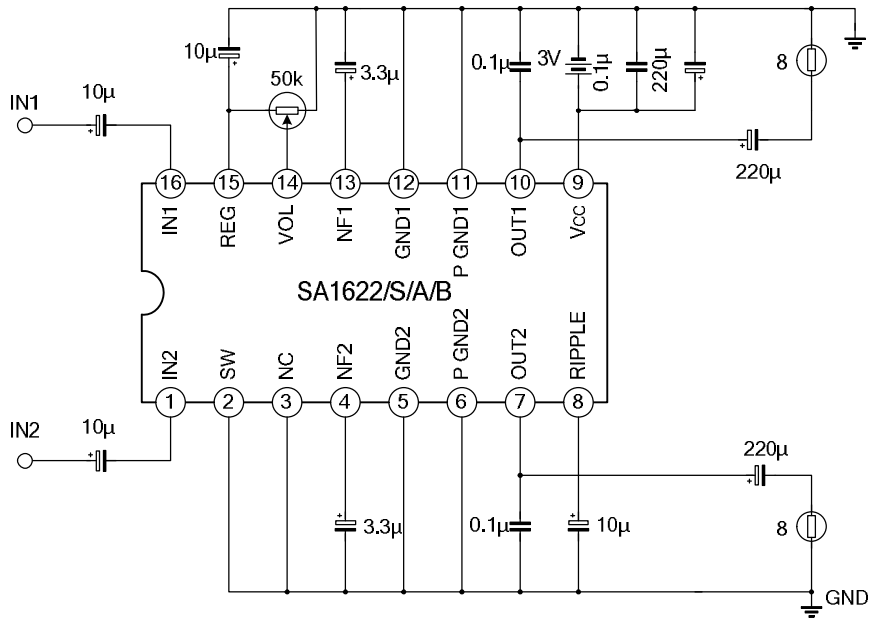
PIN DESCRIPTION

Pin NO.	Pin name	I/O	Description
1,16	IN2, IN1	I	Input
2	SW	I	Mode selection SW • BTL mode when open • Stereo mode when connected to GND
3	NC	--	
4,13	NF2, NF1	--	Power amplifier NF.
5,12	GND2, GND1	--	Pre-amplifier GND
6,11	P GND2 P GND1	--	Power amplifier GND
7,10	OUT2, OUT1	O	Power amplifier output
8	RIPPLE	--	Ripple filter.
9	Vcc	--	Vcc
14	VOL	I	Electrical volume control pin.
15	REG	O	Regulator

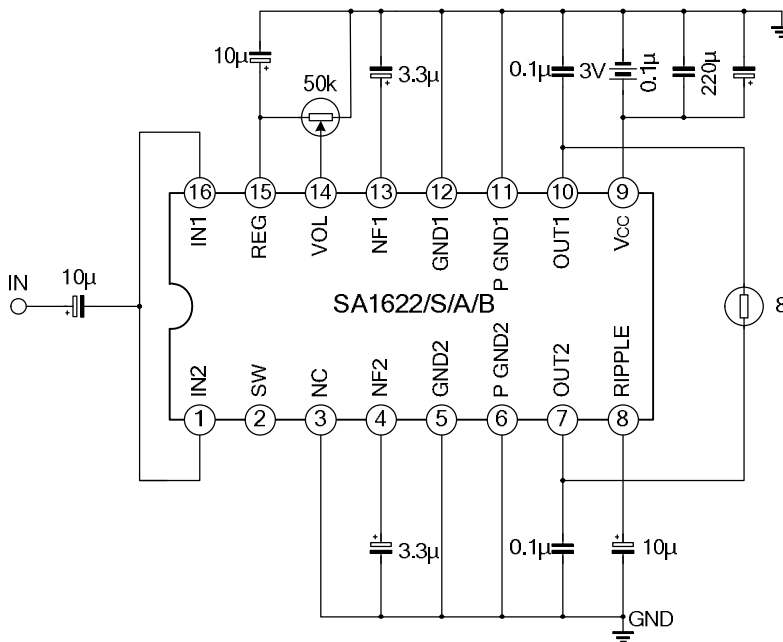
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APPLICATION CIRCUIT

1) Stereo output mode (when Pin14 connected to GND, IC gain Max.)

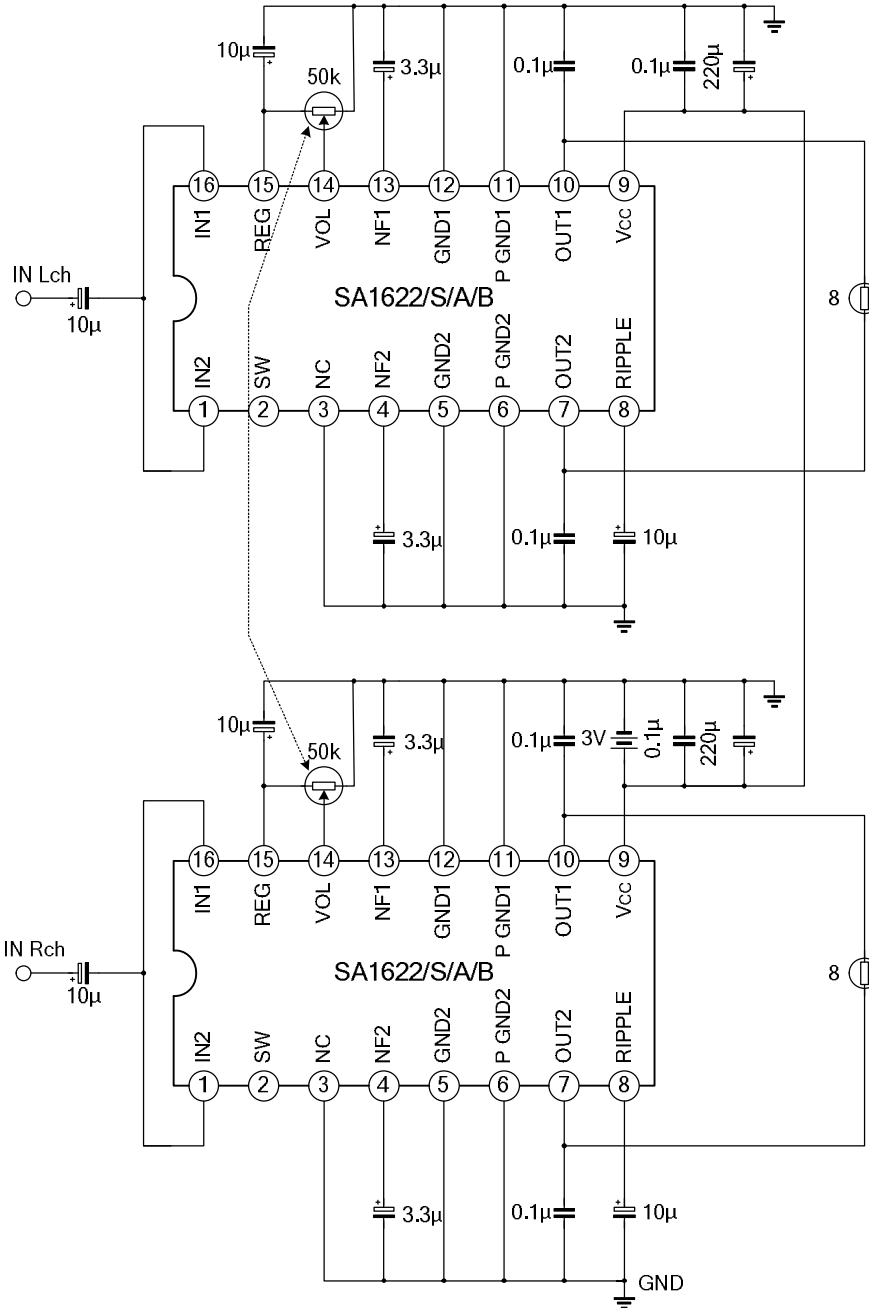


2) BTL output mode (when Pin14 connected to GND, IC gain Max.)



BTL, STEREO Application circuit

Using internal IC electrical volume (when Pin14 connected to GND, IC gain Max,)

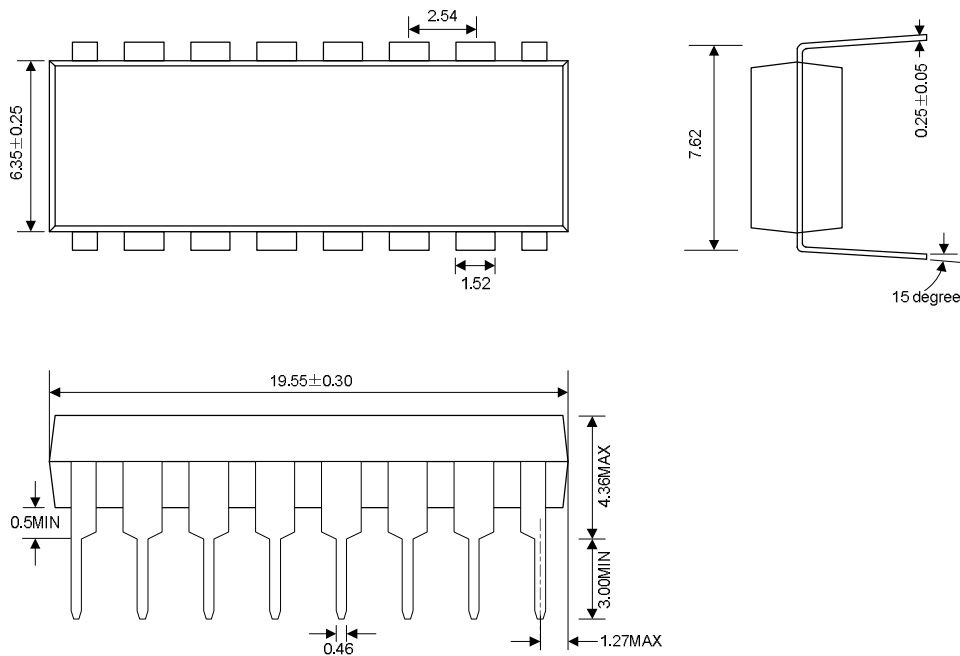


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PACKAGE OUTLINE

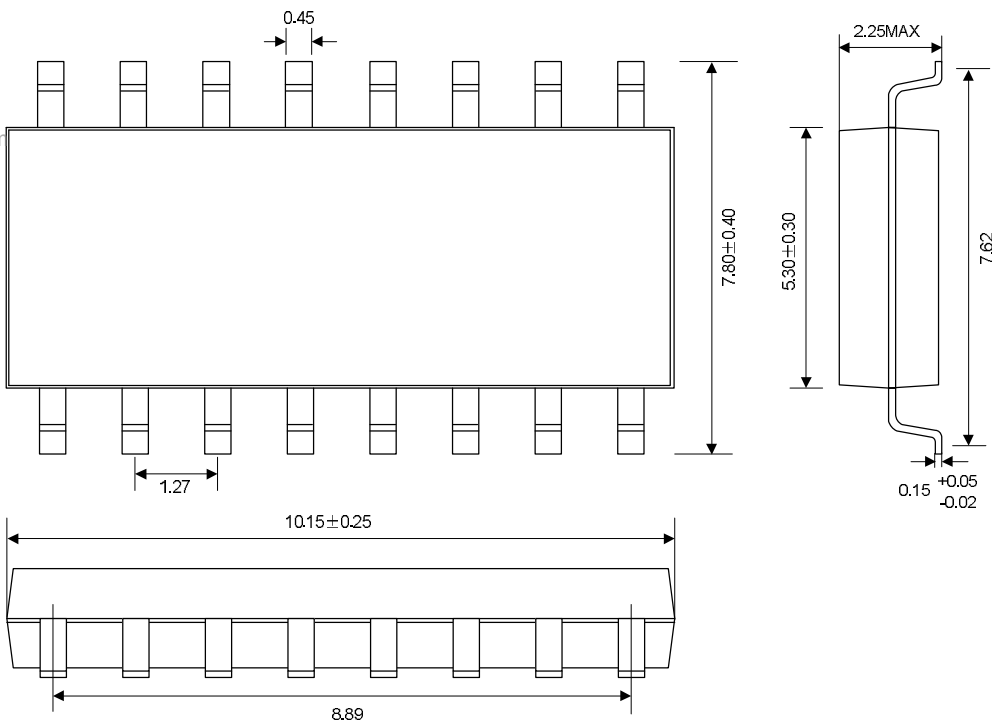
DIP-16-300-2.54

UNIT: mm



SOP-16-300-1.27

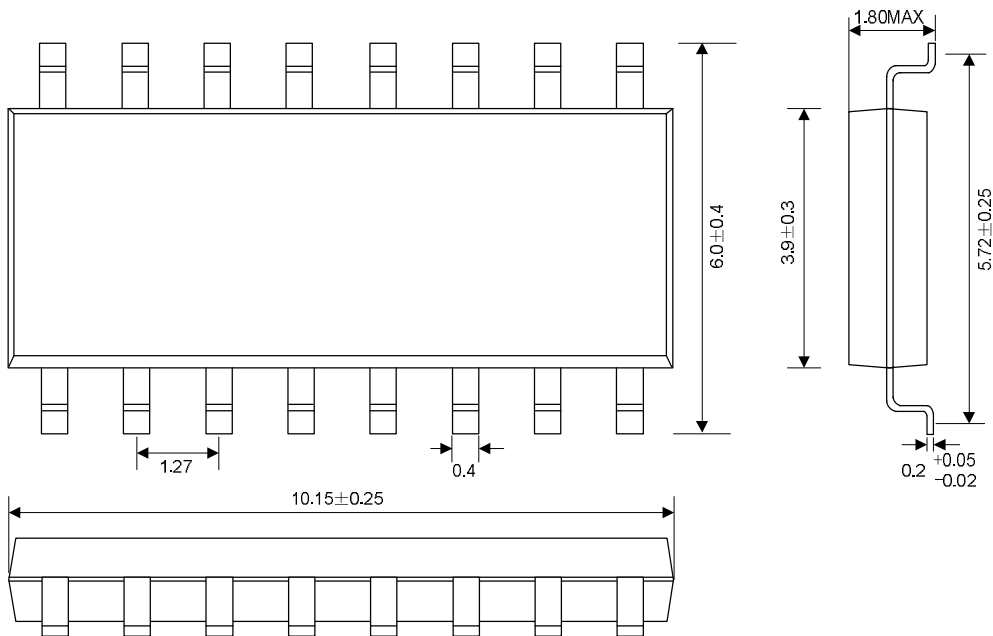
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PACKAGE OUTLINE

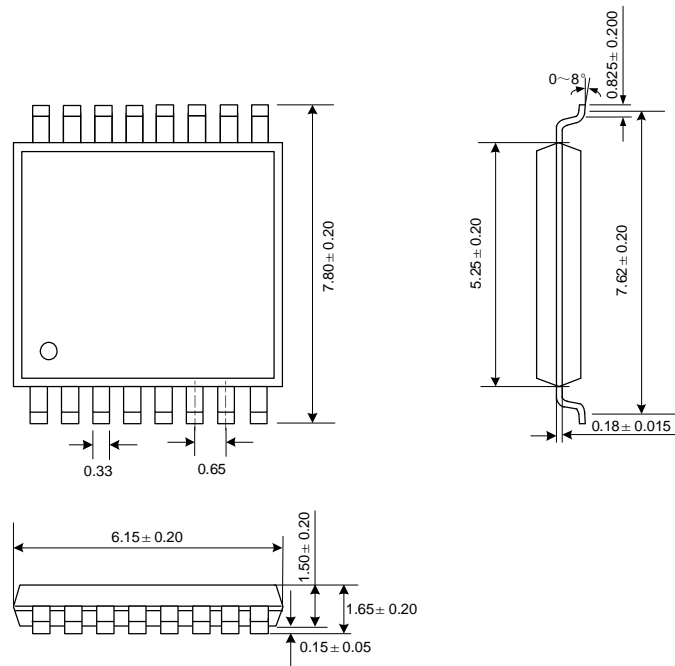
SOP-16-225-1.27

UNIT: mm



SSOP-16-300-0.65

UNIT: mm



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