

## 1-CH AUDIO POWER AMPLIFIER(1W)

### DESCRIPTION

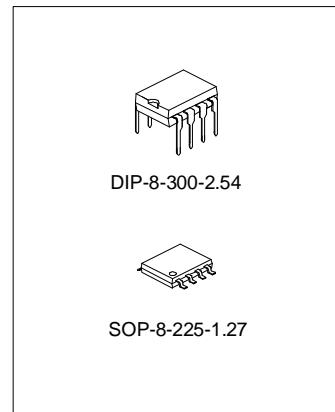
SA7411 is a single channel audio power amplifier capable of delivering 1W of maximum output power to a 8Ω load using a single 9V supply at 10% THD.

### FEATURES

- \* Max power 1W
- \* Single supply operation
- \* Integrated standby and mute function
- \* Internal thermal protection

### APPLICATIONS

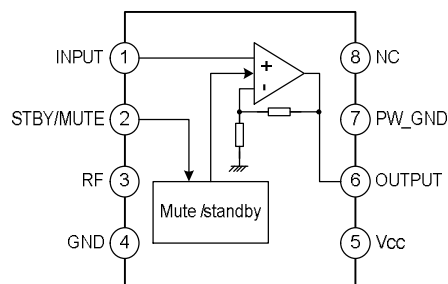
- \* Audio power amplifier with high performance
- \* TV
- \* Monitor



### ORDERING INFORMATION

Device	Package
SA7411	DIP-8-300-2.54
SA7411S	SOP-8-225-1.27

### BLOCK DIAGRAM



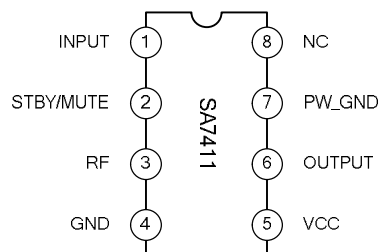
### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub>=25°C, unless otherwise specified)

Characteristic	Symbol	Value	Unit
Storage Temperature	T <sub>stg</sub>	-55 ~ +150	°C
Operating Ambient Temperature	T <sub>opr</sub>	-25 ~ +70	°C
Operating Ambient Pressure	P <sub>opr</sub>	1.013×10 <sup>5</sup> ± 0.61×10 <sup>5</sup>	Pa
Operating Constant Acceleration	G <sub>opr</sub>	9810	m/s <sup>2</sup>
Operating Shock	S <sub>opr</sub>	4900	m/s <sup>2</sup>
Supply Voltage	V <sub>CC</sub>	14	V
Supply Current	I <sub>CC</sub>	1.5	A
Power Current	P <sub>D</sub>	422	mW
Operating Supply Voltage Range	V <sub>CC</sub>	7.5 ~ 13.5	V

ELECTRICAL CHARACTERISTICS (Unless otherwise specified: VCC= 9V; RL =8Ω, Tamb =25°C, f =1kHz)

Characteristics	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Quiescent Current	ICQ	STBY/MUTE=3.3V; No input	--	13	40	mA
Standby Current	ISTB	STBY/MUTE =0V; No input	--	5	50	μA
Stand-by On Voltage	Vstb-on	No input	--	--	0.4	V
Stand-by Off Voltage	Vstb-off	No input	1.2	--	--	V
Output End Noise Voltage	Vno	STBY/MUTE =3.3V; No input; Rg=10kΩ	--	0.25	0.5	mVrms
Ripple Rejection Ratio	RR	STBY/MUTE =3.3V; Rg=10kΩ; Vripple=1Vrms; fripple=120Hz	30	50	--	dB
Voltage Gain	GV	STBY/MUTE =3.3V; Po=0.25W	31.5	33.5	35.5	dB
Total Harmonic Distortion	THD	STBY/MUTE =3.3V; Po=0.25W	--	0.15	0.5	%
Maximum Output Power	PO	STBY/MUTE =5.0V; THD=10%; VOL=3.3V	0.8	1.0	--	W
Muting Ratio	MR	STBY/MUTE=2.0V to 2.7V	65	75	--	dB
Mute On Voltage	Mute-on	MR ≥ 65dB	--	--	2	V
Mute Off Voltage	Mute-off	Gv ≥ 31.5dB	2.7	--	--	V
Under Voltage Lock Up	UVLO	STBY/MUTE =3.3V; ICQ<1mA; No Output	--	6.0	6.3	V

PIN CONFIGURATION



PIN DESCRIPTIONS

Pin No.	Pin Name	Pin Description
1	INPUT	Input pin
2	STBY/MUTE	Standby and Mute
3	RF	Ripple Rejection
4	GND	Signal Ground
5	VCC	Voltage of supply
6	OUTPUT	Output pin
7	PW_GND	Power ground
8	NC	Not connect

## FUNCTION DESCRIPTIONS

### 1. Standby and Mute Function

The PIN2 (STBY/MUTE) controls the amplifier status by three different thresholds:

- ∅ When Vpin2 is between 0V and 0.4V, the bias of amplifier is off and the amplifier is in standby mode.
- ∅ When Vpin2 is between 1.2V and 2.0V, the bias of amplifier is on but the gain of the circuit is zero. The amplifier is in mute mode.
- ∅ When Vpin2 is between 2.7V and 3.3V, the amplifier is play mode.

### 2. Ripple Rejection

Ground the RF so that there will be no difference in electric potential between the RF and ground.

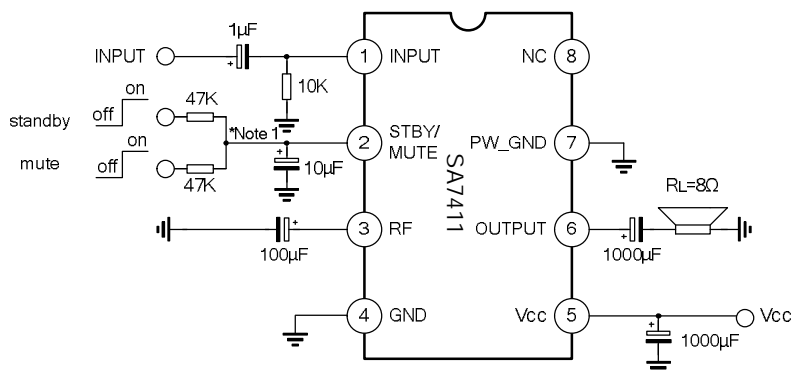
### 3. Thermal Protection

The thermal protection circuit operates at a Tj of approximately 145°C. The thermal protection circuit is reset automatically when the temperature drops.

### 4. Absence of Short Protection

Make sure that the IC is free of output pin short to ground, output pin short to VCC, IC mount in reverse direction and load short because there is no such protection in the IC. The IC will be damaged under such conditions and smoke may be observed.

## APPLICATION CIRCUIT



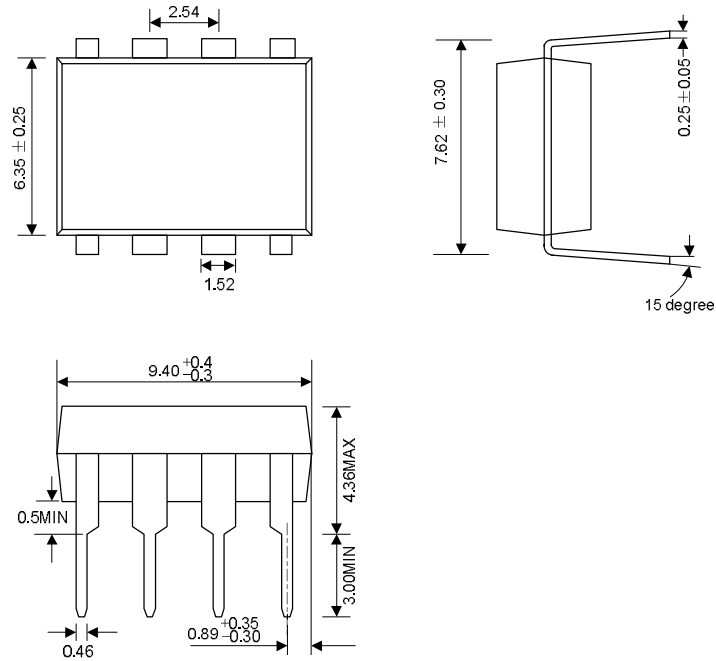
\*Note 1

Standby	Mute	IC	Sound
0V	0V	OFF	OFF
3.3V	0V	ON	OFF
3.3V	3.3V	ON	ON

PACKAGE OUTLINE

DIP-8-300-2.54

UNIT: mm



SOP-8-225-1.27

UNIT: mm

