



## SOUND 2W MONO AMPLIFIER

- CAN DELIVER 2W THD 10% 12V/8Ω
- INTERNAL FIXED GAIN 20dB
- NO BOUCHEROT CELL
- THERMAL PROTECTION
- AC SHORT CIRCUIT PROTECTION
- SVR CAPACITOR FOR BETTER RIPPLEREJECTION
- LOW TURN-ON/OFF POP
- STAND-BY MODE

### DESCRIPTION

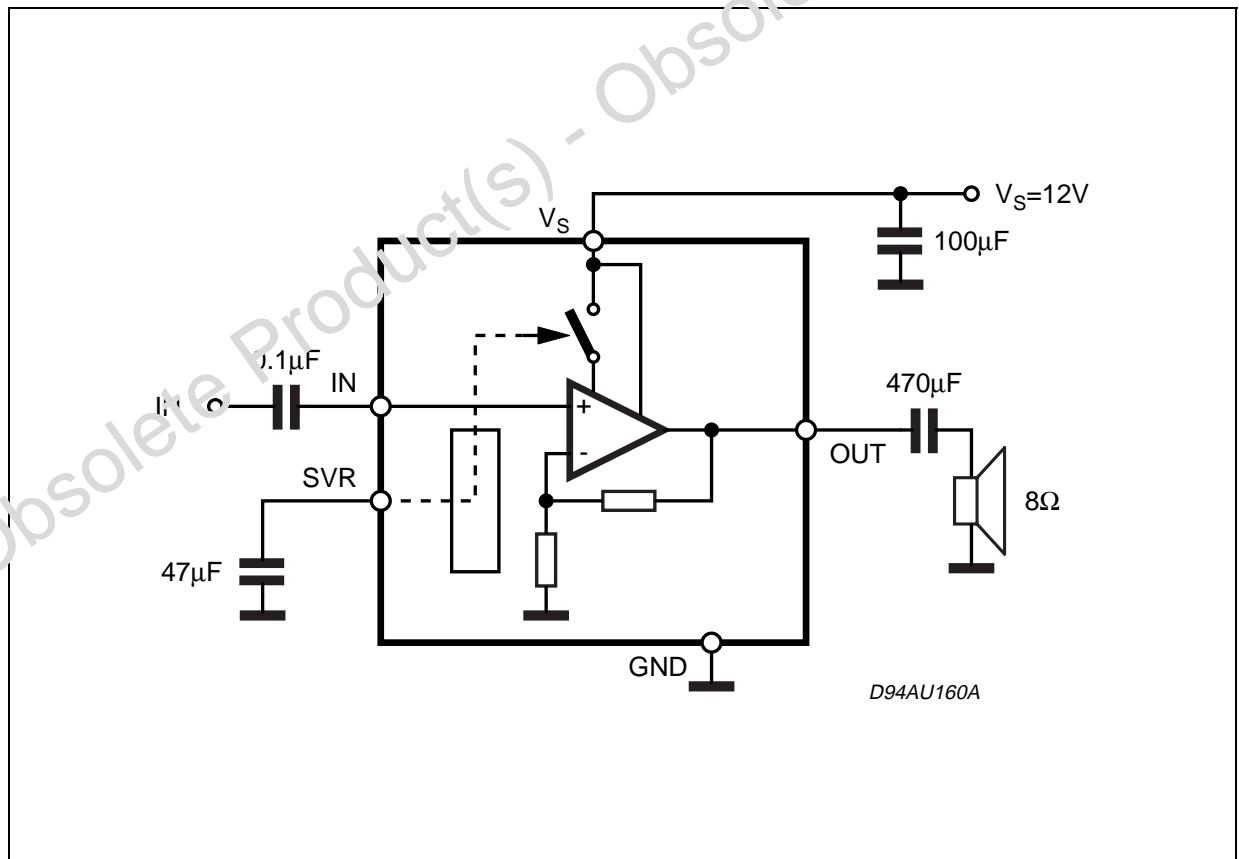
The device TDA7299 is a new technology Mono Audio Amplifier in SO package specially designed for 12V sound cards application.

Thanks to the fully complementary output configura-



tion the device delivers a rail voltage swing without need of bootstrap capacitors.

### BLOCK DIAGRAM

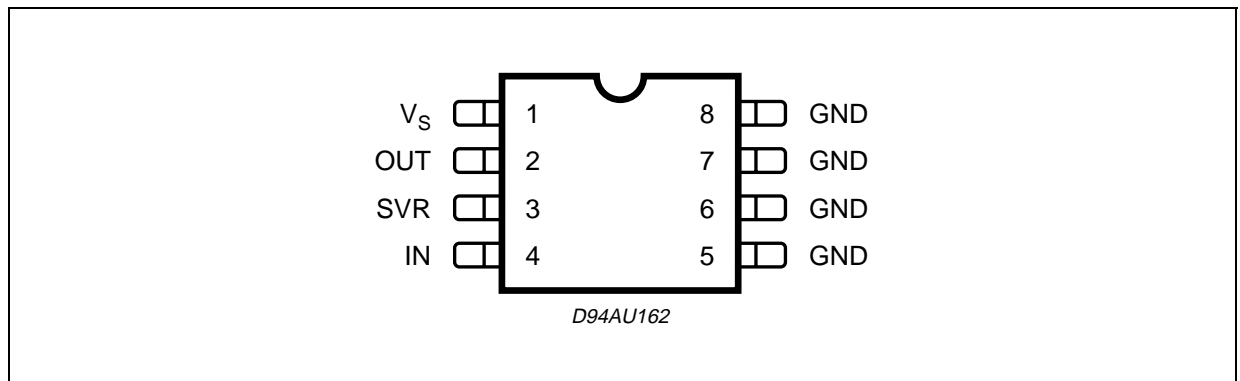


# TDA7299

## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V <sub>S</sub>	Operating Supply Voltage	18	V
I <sub>O</sub>	Output Put Peak Current	1.5	A
T <sub>op</sub>	Operating Temperature Range	0 to 70	°C
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature Range	-40 to 125	°C

## PIN CONNECTION (Top view)



## THERMAL DATA

Symbol	Parameter	Value	Unit
R <sub>th j-amb</sub>	Thermal Resistance Junction to ambient (on PCB)	80	°C/W
R <sub>th j-case</sub>	Thermal Resistance Junction to case	20	°C/W

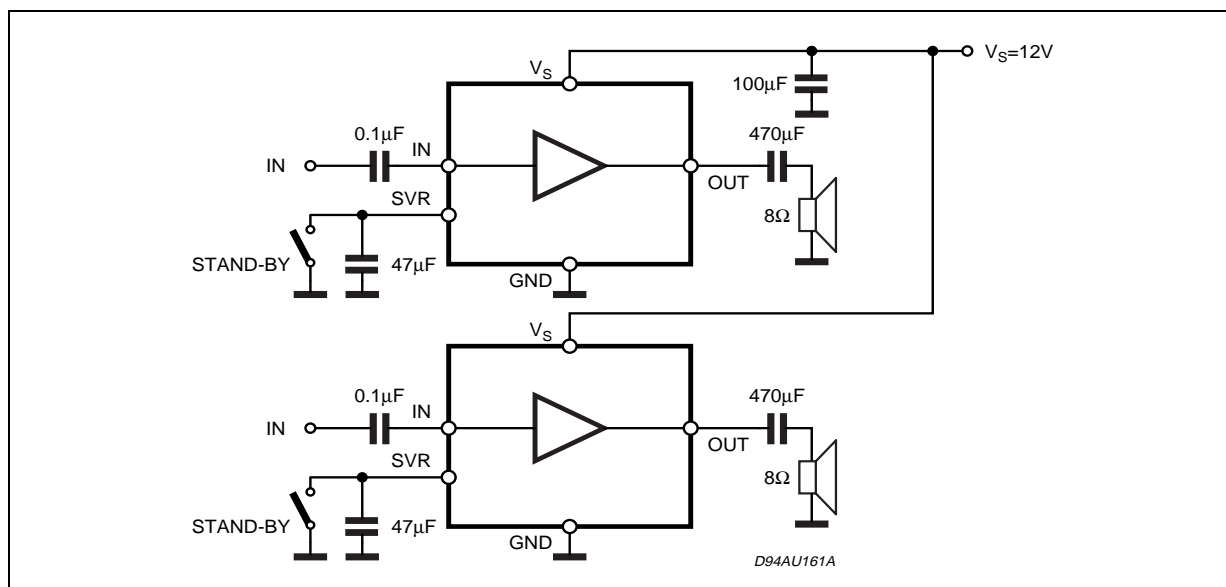
## ELECTRICAL CHARACTERISTICS

(T<sub>amb</sub> = 25°C; V<sub>S</sub> = 12V; R<sub>L</sub> = 8Ω; f = 1KHz; unless otherwise specified.)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V <sub>S</sub>	Supply Voltage Range		4.5		18	V
I <sub>S</sub>	Quiescent Current			20	30	mA
I <sub>sb</sub>	Stand-By Current	Pin 2 shorted to GND			0.3	mA
V <sub>O</sub>	Quiescent Output Voltage			6		V
A <sub>V</sub>	Voltage Gain			20		dB
R <sub>IN</sub>	Input Impedance		50	100		KΩ
P <sub>O</sub>	Output Power	THD = 10%	1.8	2		W
		R <sub>L</sub> = 4Ω, V <sub>S</sub> = 8.5V, THD = 10%		2		W

**ELECTRICAL CHARACTERISTICS** (continued)(T<sub>amb</sub> = 25°C; V<sub>S</sub> = 12V; R<sub>L</sub> = 8Ω; f = 1KHz; unless otherwise specified.)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
P <sub>ot</sub>	Transient Output Power *)	V <sub>i</sub> = 400mVp, THD < 2%, R <sub>L</sub> = 4Ω		2		W
THD	Distortion	P <sub>O</sub> = 1W			1	%
SVR	Supply Voltage Rejection	V <sub>ripple</sub> = 150mVrms; F <sub>ripple</sub> = 1KHz		50		dB
E <sub>i</sub>	Input Noise Voltage	R <sub>g</sub> = 10KΩ; BW = 20Hz to 20KHz		1.5	5	μV
V <sub>sb</sub>	Stand-By Enable Voltage				1	V

\*) Limited by the R<sub>TH</sub> of the package**Figure 1. Application Circuit****APPLICATION HINTS:**

For 12V supply and 8Ω speaker application, its maximum power dissipation is about 1.8W.

Assuming that max ambient temperature is 70°C, required thermal resistance of the device and heat dissipating means must be equal to  $(150 - 70)/1.8 = 45^{\circ}\text{C}/\text{W}$ .

Junction to pin thermal resistance of the package is about 20°C/W. That means external heat sink of about 25°C/W is required.

Cu ground plane of PCB can be used as heat dissipating means.

Stand-By switches must be able to discharge C<sub>SVR</sub> current.

Figure 2. On Board Copper Area

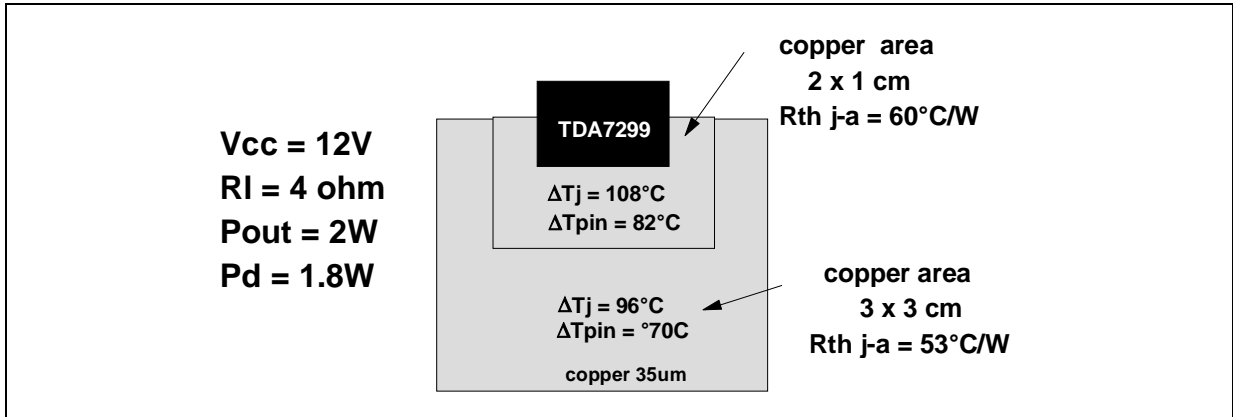


Figure 3. P<sub>out</sub> vs Supply Voltage (Rload = 8Ω)

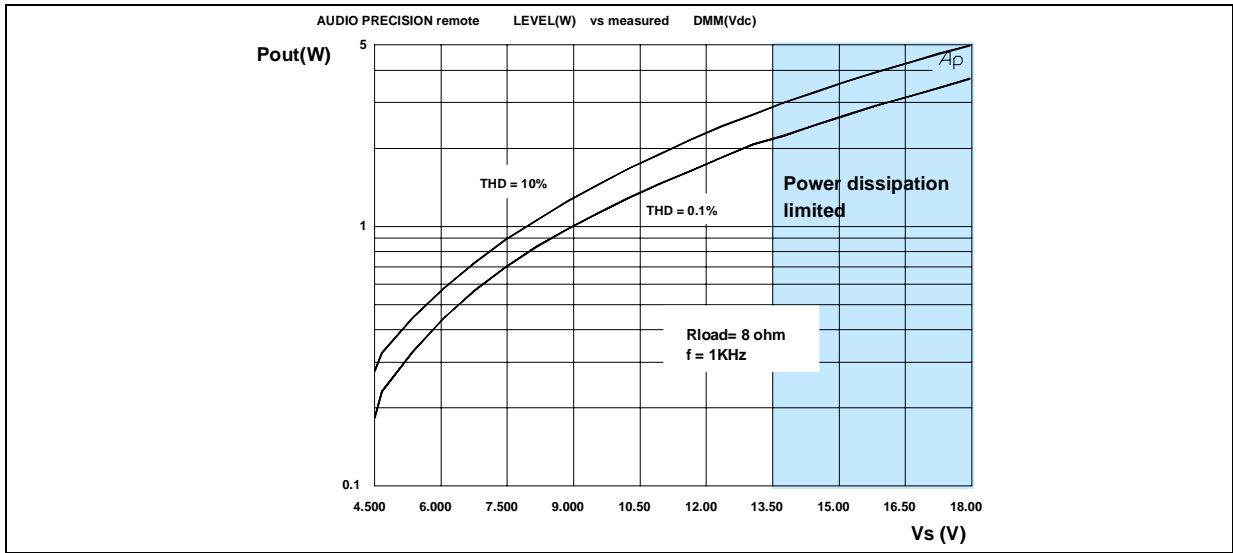


Figure 4. P<sub>out</sub> vs Supply Voltage (Rload = 4Ω)

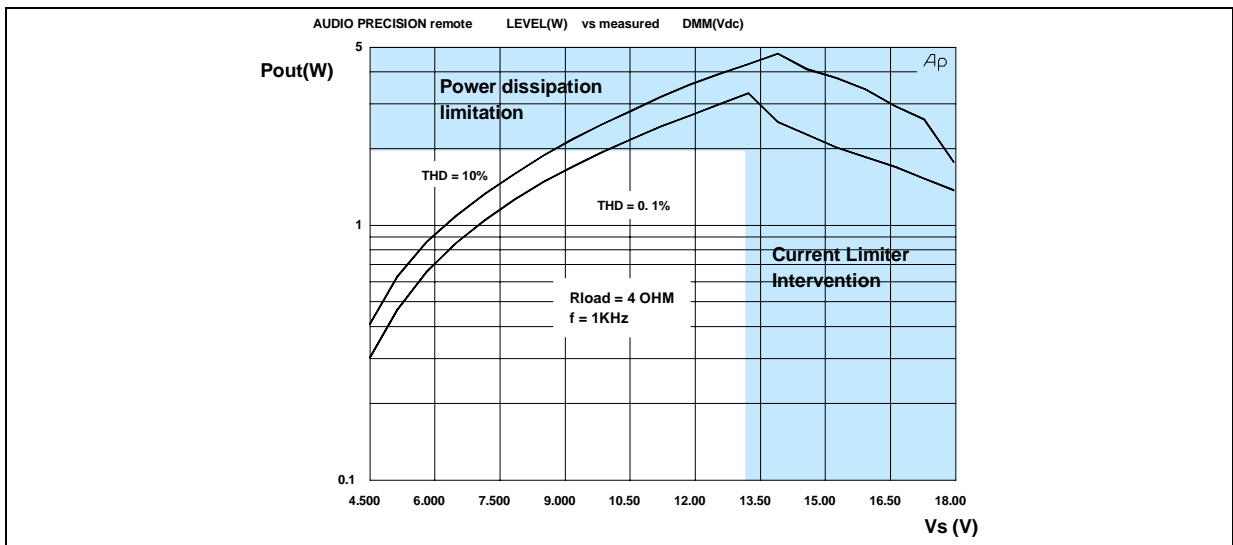
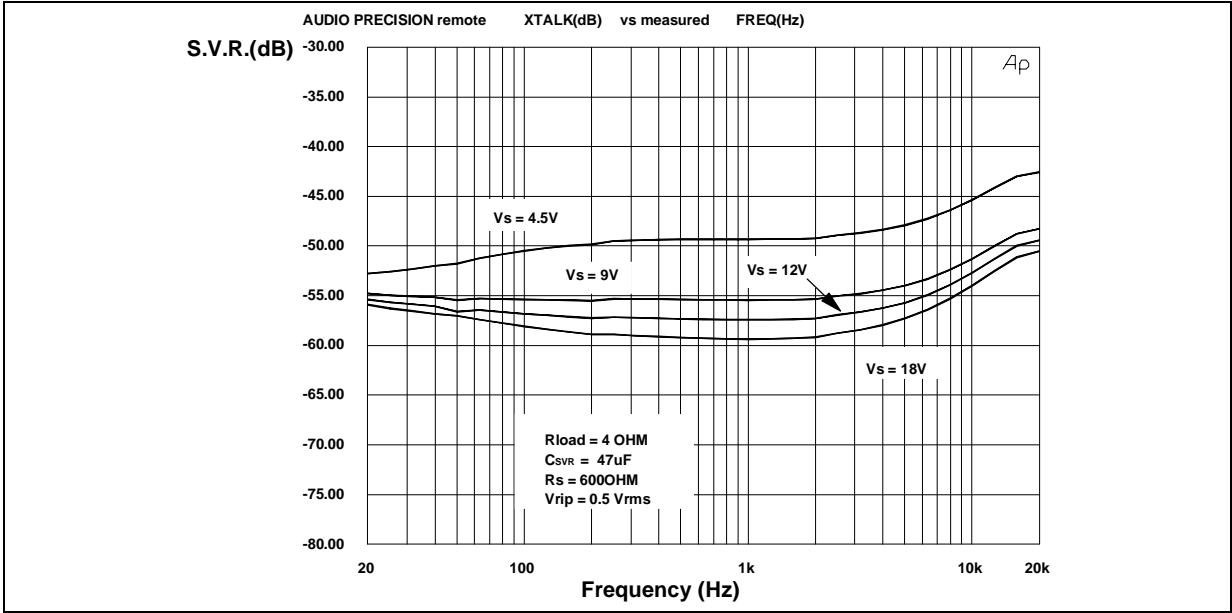
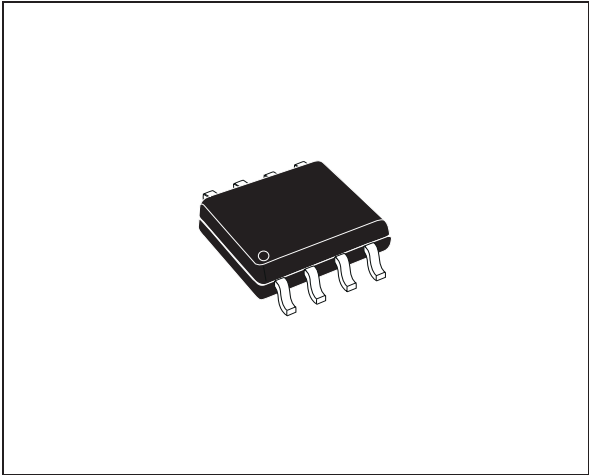


Figure 5. SVR vs Frequency



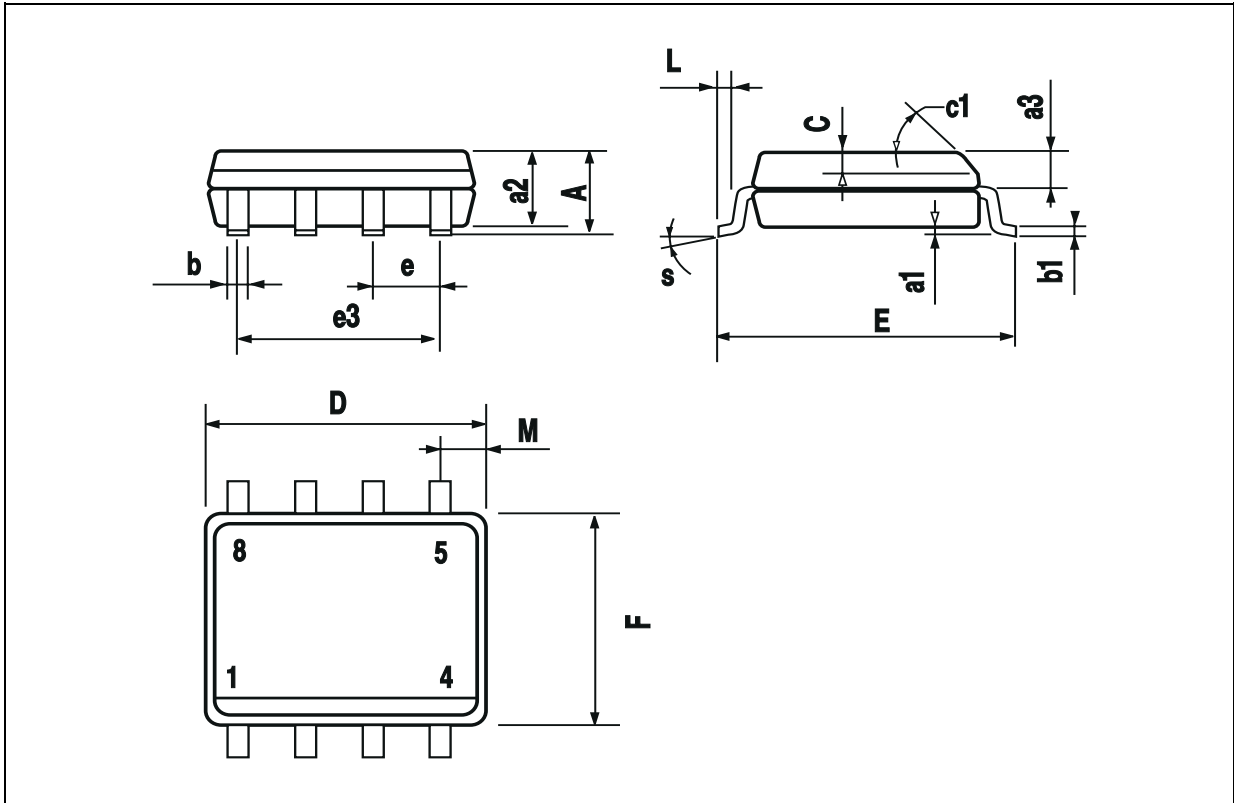
DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			1.75			0.069
a1	0.1		0.25	0.004		0.010
a2			1.65			0.065
a3	0.65		0.85	0.026		0.033
b	0.35		0.48	0.014		0.019
b1	0.19		0.25	0.007		0.010
C	0.25		0.5	0.010		0.020
c1	45° (typ.)					
D (1)	4.8		5.0	0.189		0.197
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		3.81			0.150	
F (1)	3.8		4.0	0.15		0.157
L	0.4		1.27	0.016		0.050
M			0.6			0.024
S	8° (max.)					

**OUTLINE AND MECHANICAL DATA**



**SO8**

(1) D and F do not include mold flash or protrusions. Mold flash or protrusions shall not exceed 0.15mm (.006inch).



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