

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

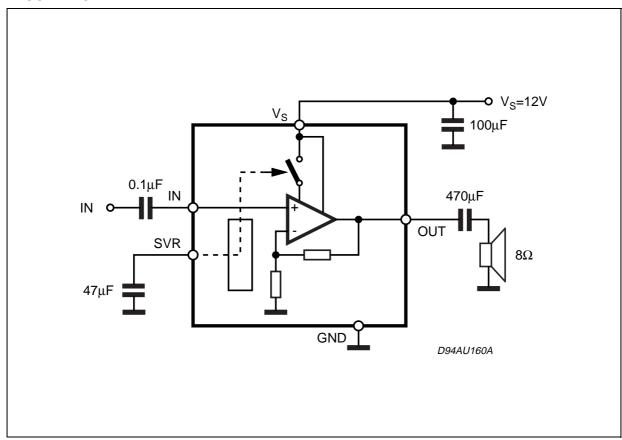
The device TDA7299 is a new technology Mono Audio Amplifier in SO package specially designed for 12V sound cards application.

Thanks to the fully complementary output configura-



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

BLOCK DIAGRAM

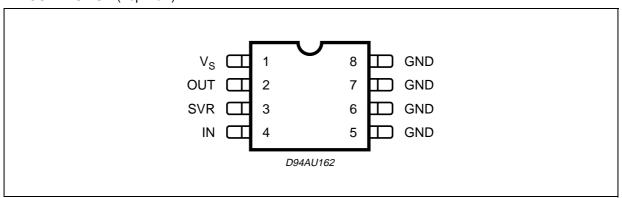


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ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
Vs	Operating Supply Voltage	18	V
Io	Output Put Peak Current	1.5	Α
T _{op}	Operating Temperature Range	0 to 70	°C
Tj	Junction Temperature	150	°C
T _{stg}	Storage Temperature Range	-40 to 125	°C

PIN CONNECTION (Top view)



THERMAL DATA

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

ELECTRICAL CHARACTERISTICS

 $(T_{amb} = 25$ °C; $V_S = 12$ V; $R_L = 8\Omega$; f = 1KHz; unless otherwise specified.)

Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Unit
Vs	Supply Voltage Range		4.5		18	V
IS	Quiescent Current			20	30	mA
I _{sb}	Stand-By Current	Pin 2 shorted to GND			0.3	mA
Vo	Quiescent Output Voltage			6		V
A _V	Voltage Gain			20		dB
R _{IN}	Input Impedance		50	100		ΚΩ
Po	Output Power	THD = 10%	1.8	2		W
		$R_L = 4\Omega$, $V_S = 8.5V$, THD = 10%		2		W

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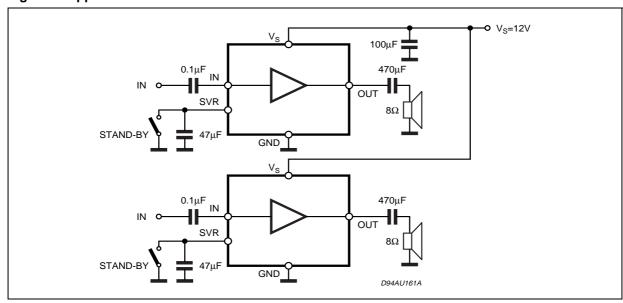
ELECTRICAL CHARACTERISTICS (continued)

 $(T_{amb} = 25^{\circ}C; V_{S} = 12V; R_{L} = 8\Omega; f = 1KHz; unless otherwise specified.)$

Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Unit
Pot	Transient Output Power *)	V_i = 400mVp, THD < 2%, R_L = 4 Ω		2		W
THD	Distortion	P _O = 1W			1	%
SVR	Supply Voltage Rejection	V _{ripple} = 150mVrms; F _{ripple} = 1KHz		50		dB
El	Input Noise Voltage	Rg = $10K\Omega$; BW = $20Hz$ to $20KHz$		1.5	5	μV
V _{sb}	Stand-By Enable Voltage				1	V

^{*)} Limited by the R_{TH} of the package

Figure 1. Application Circuit



APPLICATION HINTS:

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

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

Figure 2. On Board Copper Area

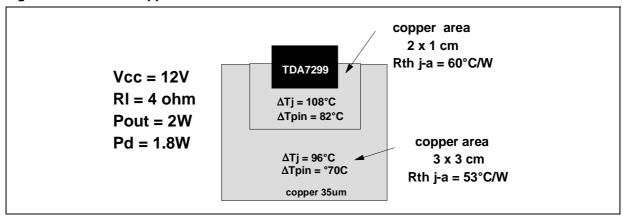


Figure 3. P_{out} vs Supply Voltage (Rload = 8Ω)

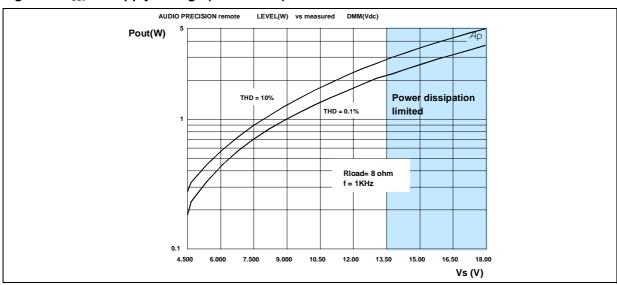
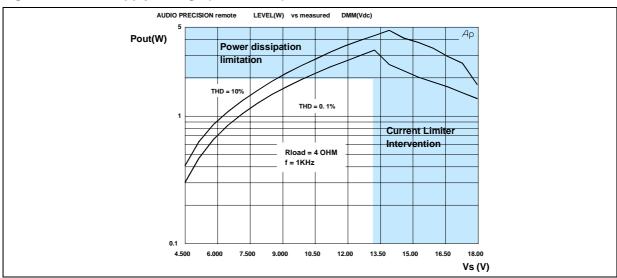
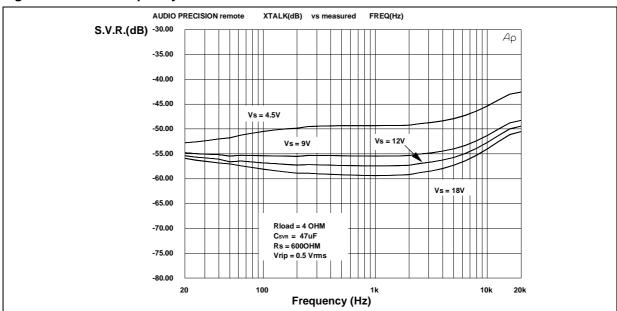


Figure 4. P_{out} vs Supply Voltage (Rload = 4Ω)



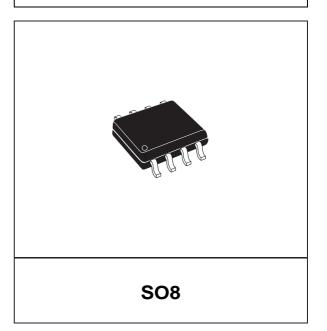
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Figure 5. SVR vs Frequency

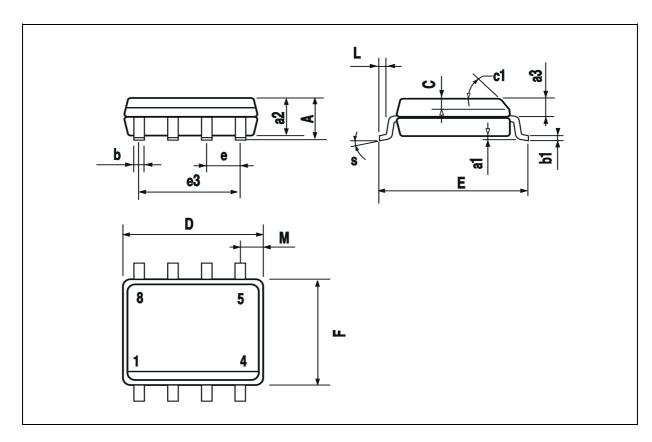


DIM.	mm			inch			
Dilvi.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
Α			1.75			0.069	
a1	0.1		0.25	0.004		0.010	
a2			1.65			0.065	
а3	0.65		0.85	0.026		0.033	
b	0.35		0.48	0.014		0.019	
b1	0.19		0.25	0.007		0.010	
С	0.25		0.5	0.010		0.020	
c1			45° ((typ.)			
D (1)	4.8		5.0	0.189		0.197	
Е	5.8		6.2	0.228		0.244	
е		1.27			0.050		
еЗ		3.81			0.150		
F (1)	3.8		4.0	0.15		0.157	
L	0.4		1.27	0.016		0.050	
М			0.6			0.024	
S	8° (max.)						

OUTLINE AND MECHANICAL DATA



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



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