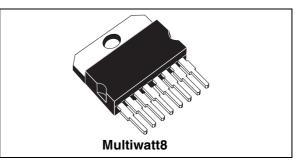


TDA7264

25 W + 25 W stereo amplifier with mute and standby

Features

- Wide supply voltage range (up to ±22.5 V)
- Split supply
- High output power
 - 25 W + 25 W into 8 Ω with V_S = ±20 V and THD = 10%
- No "pop" at turn on/off
- Mute ("pop"-free)
- Standby feature (low I_q)
- Few external components
- Short-circuit protection
- Thermal overload protection



Description

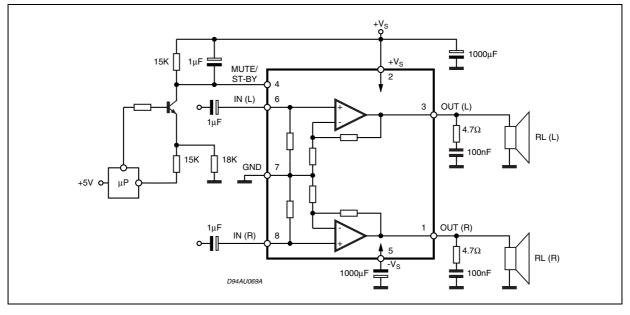
The TDA7264 is class-AB dual audio power amplifier assembled in a Multiwatt package.

It is specially designed for high-quality sound applications such as hi-fi music centers and stereo TV sets.

Table 1. Device summary

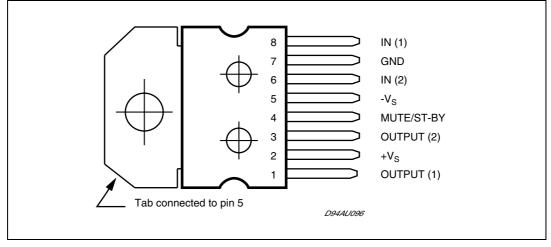
Order code	Operating temperature	Package	Packaging
TDA7264	0 to 70 °C	Multiwatt8	Tube

Figure 1. Applications circuit



1 Pin description





2 Electrical specifications

2.1 Absolute maximum ratings

Table 2. Absolute maximum ratings

Symbol	Parameter	Value	Unit
V _S	DC supply voltage	±25	V
I _O	Output Peak Current (internally limited)	4.5	А
P _{tot}	power Dissipation T _{case} = 70°C	30	W
Т _{ор}	Operating temperature	-20 to 85	°C
Т _ј	Junction temperature	-40 to 150	°C
T _{stg}	Storage temperature	-40 to 150	°C

2.2 Thermal data

Table 3. Thermal data

Symbol	Parameter	Min	Тур	Max	Unit
R _{th j-case}	Thermal resistance, junction to case	-	-	2	°C/W

2.3 Electrical specifications

Unless otherwise stated, the results in *Table 4* below are given for the conditions: $V_S = \pm 20 \text{ V}, \text{ R}_L (\text{load}) = 8 \Omega, \text{ R}_S (\text{source}) = 50 \Omega, \text{ f} = 1 \text{ kHz}, \text{ and } \text{T}_{amb} = 25^{\circ} \text{ C}.$ See also the applications circuit in *Figure 12 on page 9*.

Symbol	Parameter	Conditions	Min	Тур	Max	Unit	
V _S	Supply voltage range	-	±5	-	±22.5	V	
lq	Total quiescent current	-	-	80	130	mA	
P _{OM}	Music output power ⁽¹⁾	THD = 10%, R _L = 8 Ω, V _S = ±22.5 V	-	32	-	W	
Po	Output power	THD = 10%: $R_L = 8 \Omega, V_S = \pm 20 V$ $R_L = 4 \Omega, V_S = \pm 16 V$	20	25 25	-	10/	
		THD = 1%: $R_L = 8 \Omega$, $V_S = \pm 20 V$ $R_L = 4 \Omega$, $V_S = \pm 16 V$	-	20 20	-	W	

Table 4. Electrical specifications



Table 4.	Electrical specifications (continued)						
Symbol	Parameter	Conditions	Min	Тур	Max	Unit	
THD		$P_{O} = 1$ W, f = 1 kHz, R _L = 8 Ω, V _S = ±20 V,	-	0.02	-	- %	
	Total harmonic distortion	$P_{O} = 0.1$ to 15 W, f = 100 Hz to 15 kHz, R _L = 8 Ω, V _S = ±20 V	-	-	0.5		
Ш		$P_0 = 1$ W, f = 1 kHz, R _L = 4 Ω, V _S = ±16 V,	-	0.03	-		
			-	-	1.0		
CT	Crosstalk	f = 1 kHz f = 10 kHz	-	70 60	-	dB	
SR	Slew rate	-	-	10	-	V/µs	
G _V	Closed-loop voltage gain	-	29	30	31	dB	
ΔG_V	Voltage gain matching	-	-	0.2	-	dB	
eN	Total input noise	A curve f = 20 Hz to 22 kHz	-	2.5 3.5	8 -	μV	
R _i	Input resistance	-	15	20	-	kΩ	
SVRR	Supply voltage rejection ratio	f _r = 100 Hz, V _r = 0.5 V	-	60	-	dB	
т _ј	Junction temperature at thermal shut-down	-	-	145	-	°C	
Mute mod	le (see also <i>Table 5 on page 8</i>)						
VT _{MUTE}	Mute/play threshold	-	-7	-6	-5	V	
A _{MUTE}	Mute attenuation	-	60	90	-	dB	
Standby n	node (see also <i>Table 5 on page 8</i>)						
VT _{STBY}	Standby/mute threshold	-	-3.5	-2.5	-1.5	V	
A _{STBY}	Standby attenuation	-	-	110	-	dB	
I _{q_STBY}	Quiescent current in standby	-	-	3	-	mA	

Table 4. Electrical specifications (continued)

1.

FULL POWER up to $V_S = \pm 22.5 V$ with $R_L = 8 \Omega$ and $V_S = \pm 16 V$ with $R_L = 4 \Omega$. MUSIC POWER is the maximum power which the amplifier is capable of producing across the rated load resistance (regardless of non-linearity) 1 s after the application of a sinusoidal input signal of frequency 1 kHz.



3 Characterization curves

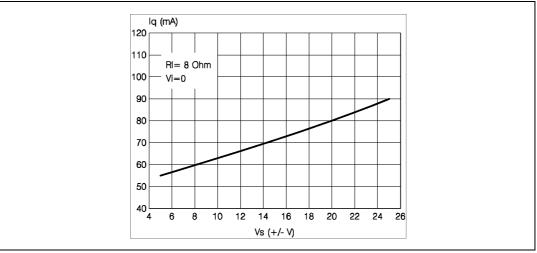
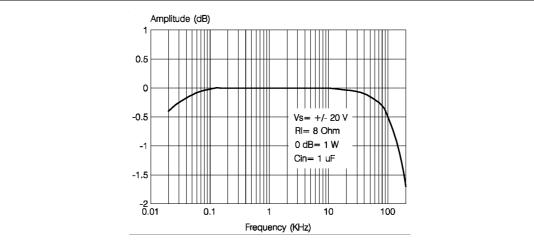


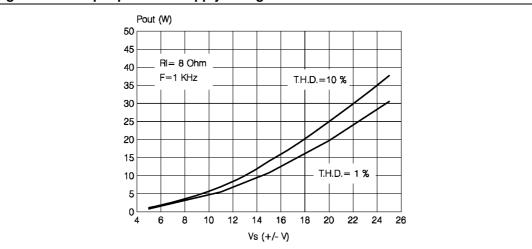
Figure 3. Quiescent current vs Supply Voltage













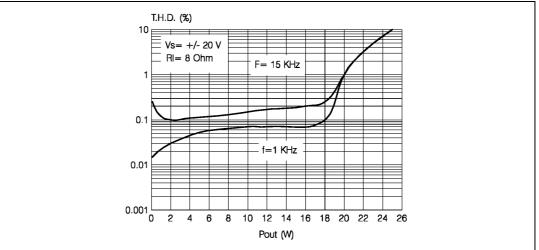
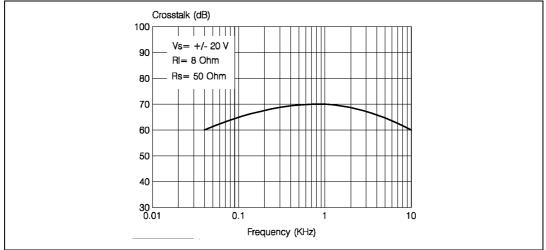


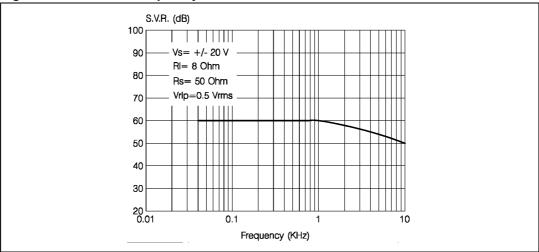
Figure 7. Crosstalk vs frequency



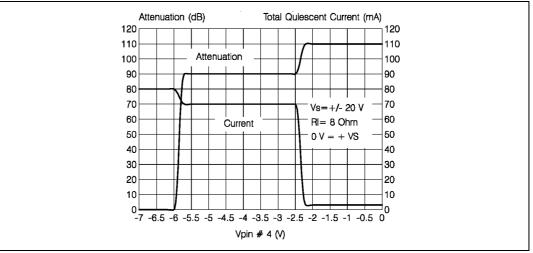
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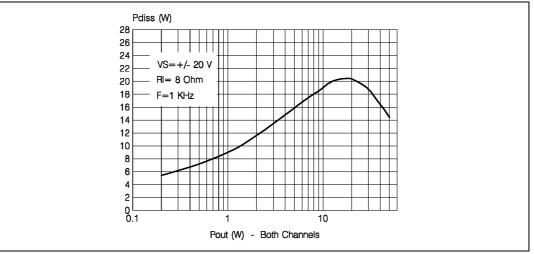














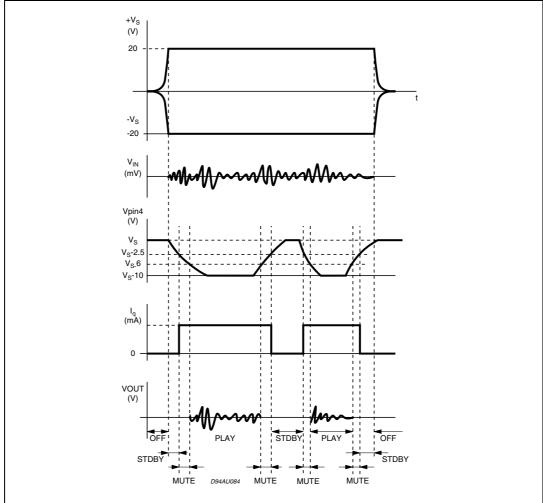
4 Mute and standby modes

Pin 4 (MUTE/STANDBY) controls the amplifier status by two different thresholds referenced to $+V_S$ as given in *Table 5* below. See also *Table 4: Electrical specifications on page 3*.

Table 5.	Mute and standby thresholds on pin 5
----------	--------------------------------------

Nominal voltage on pin 4, V _{PIN4}	Mode	Remarks
> +V _S - 2.5 V	Standby	Output stages turned off
$> +V_{S} - 6.0 V$, $< +V_{S} - 2.5 V$	Mute	Output stages turned on, amplifiers muted
< +V _S - 6.0 V	Play	Amplifiers active







5 Applications information

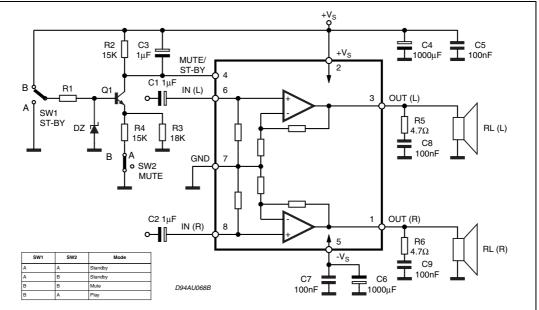
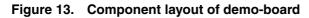
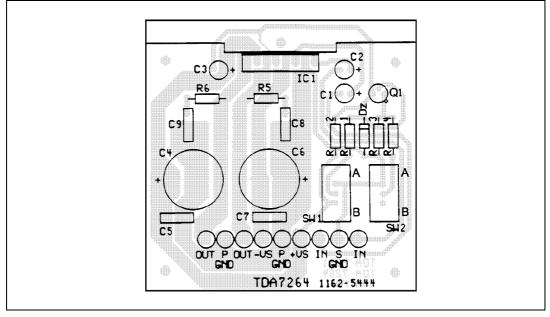


Figure 12. Schematic of demo board





Component	Recommended value	Purpose	Larger than recommended value	Smaller than recommended value
R1	10 kΩ	Mute circuit	Decrease in DZ biasing current	-
R2	15 kΩ	Mute circuit	V _{PIN4} shifted downwards	V _{PIN4} shifted upwards
R3	18 kΩ	Mute circuit	V _{PIN4} shifted upwards	V _{PIN4} shifted downwards
R4	15 kΩ	Mute circuit	V _{PIN4} shifted upwards	V _{PIN4} shifted downwards
R5, R6	4.7 Ω	Frequency stability	Danger of oscillation	Danger of oscillation
C1, C2	1 μF	Input AC coupling	-	Higher low- frequency cutoff
С3	1 µF	Standby/mute time constant	Longer on/off time	Shorter on/off time
C4, C6	1000 μF	Supply voltage decoupling	-	Danger of oscillation
C5, C7	0.1 μF	Supply voltage decoupling	-	Danger of oscillation
C8, C9	0.1 μF	Frequency stability	-	-
Dz	5.1 V	Mute circuit	-	-
Q1	BC107	Mute circuit	-	-

 Table 6.
 Recommended component values for demo board

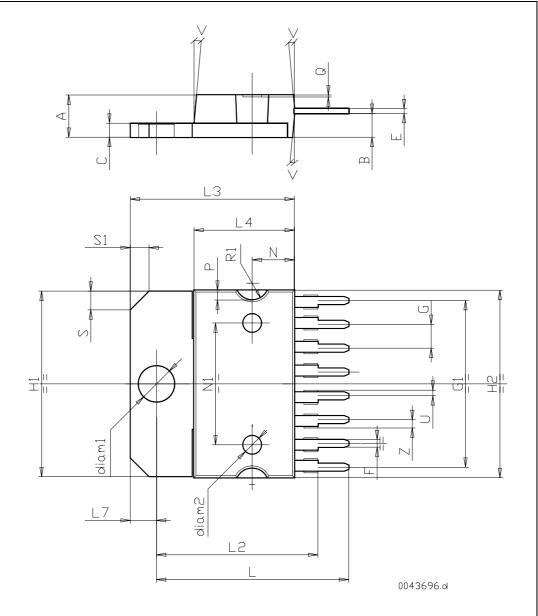


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6 Package mechanical data

The TDA7264 comes in a 8-pin Multiwatt package with pin 5 internally connected to the metal tab.





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Deferrence	D	Dimensions in mm			Dimensions in inches		
Reference	Min	Тур	Мах	Min	Тур	Мах	
A	-	-	5.00	-	-	0.197	
В	-	-	2.65	-	-	0.104	
С	-	-	1.60	-	-	0.063	
E	0.49	-	0.55	0.019	-	0.22	
F	0.78	-	0.85	0.031	-	0.033	
G	2.40	2.54	2.68	0.094	0.100	0.106	
G1	17.64	17.78	17.92	0.694	0.700	0.706	
H1	19.60	-	-	0.772	-	-	
H2	-	-	20.20	-	-	0.787	
L	20.35	-	20.65	0.801	-	0.813	
L2	17.05	17.20	17.35	0.671	0.677	0.683	
L3	17.25	17.50	17.75	0.679	0.689	0.699	
L4	10.30	10.70	10.90	0.406	0.421	0.429	
L7	2.65	-	2.90	0.104	-	0.114	
Ν	-	-	-	-	-	-	
N1	-	-	-	-	-	-	
Р	-	-	-	-	-	-	
Q	-	-	-	-	-	-	
R1	-	-	-	-	-	-	
S	1.90	-	2.60	0.075	-	0.102	
S1	1.90	-	2.60	0.075	-	0.102	
U	0.40	-	0.55	0.016	-	0.022	
V	-	5 deg	-	-	5 deg	-	
Z	0.70	-	0.85	-	-	0.033	
Diam.1	3.65	-	3.85	0.144	-	0.152	
Diam.2	-	-	-	-	-	-	

 Table 7.
 Multiwatt8 package dimensions



7 Revision history

Table 8.Document revision history

Date	Revision	Changes
Jan-2004	5	First issue in EDOCS
01-Jul-2009	6	Removed references to TDA7264A



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