

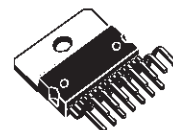
100V - 100W DMOS AUDIO AMPLIFIER WITH MUTE/ST-BY

- VERY HIGH OPERATING VOLTAGE RANGE ($\pm 40\text{V}$)
- DMOS POWER STAGE
- HIGH OUTPUT POWER (UP TO 100W MUSIC POWER)
- MUTING/STAND-BY FUNCTIONS
- NO SWITCH ON/OFF NOISE
- NO BOUCHEROT CELLS
- VERY LOW DISTORTION
- VERY LOW NOISE
- SHORT CIRCUIT PROTECTION
- THERMAL SHUTDOWN

DESCRIPTION

The TDA7294 is a monolithic integrated circuit in Multiwatt15 package, intended for use as audio class AB amplifier in Hi-Fi field applications (Home Stereo, self powered loudspeakers, Top-class TV). Thanks to the wide voltage range and

MULTIPOWER BCD TECHNOLOGY



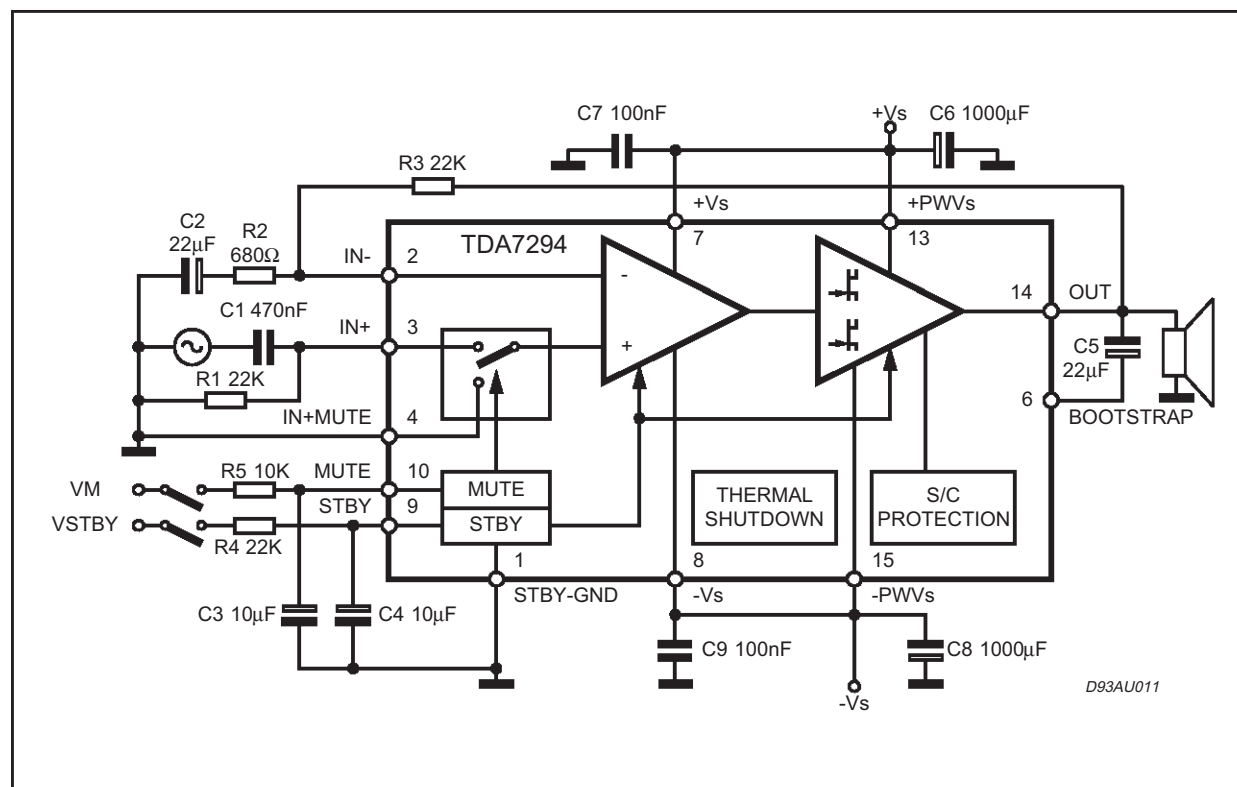
Multiwatt15

ORDERING NUMBER: TDA7294V

to the high out current capability it is able to supply the highest power into both 4 Ω and 8 Ω loads even in presence of poor supply regulation, with high Supply Voltage Rejection.

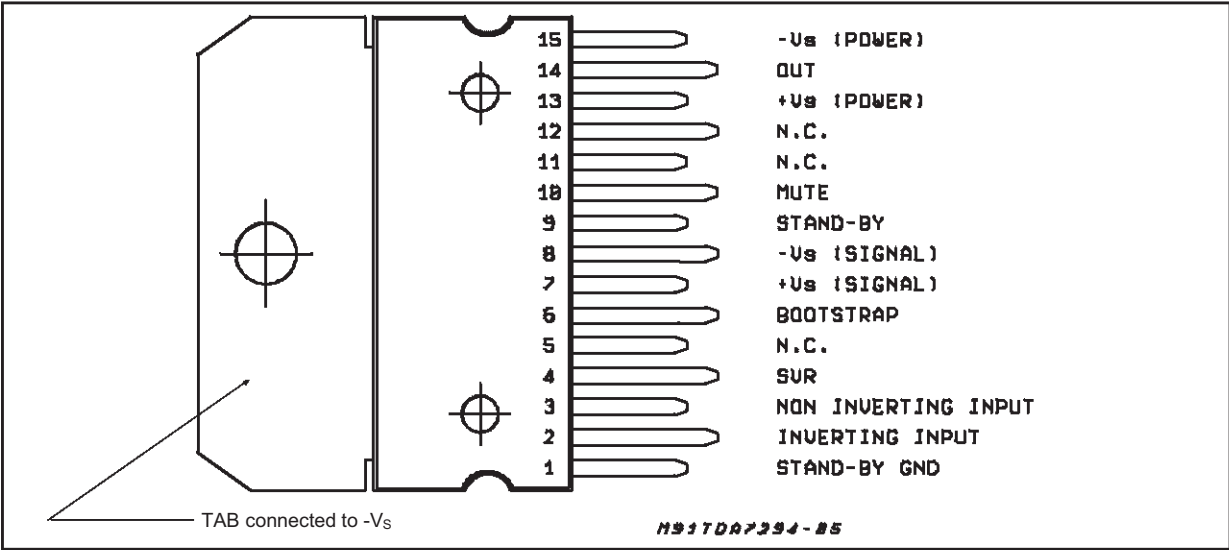
The built in muting function with turn on delay simplifies the remote operation avoiding switching on-off noises.

Figure 1: Typical Application and Test Circuit

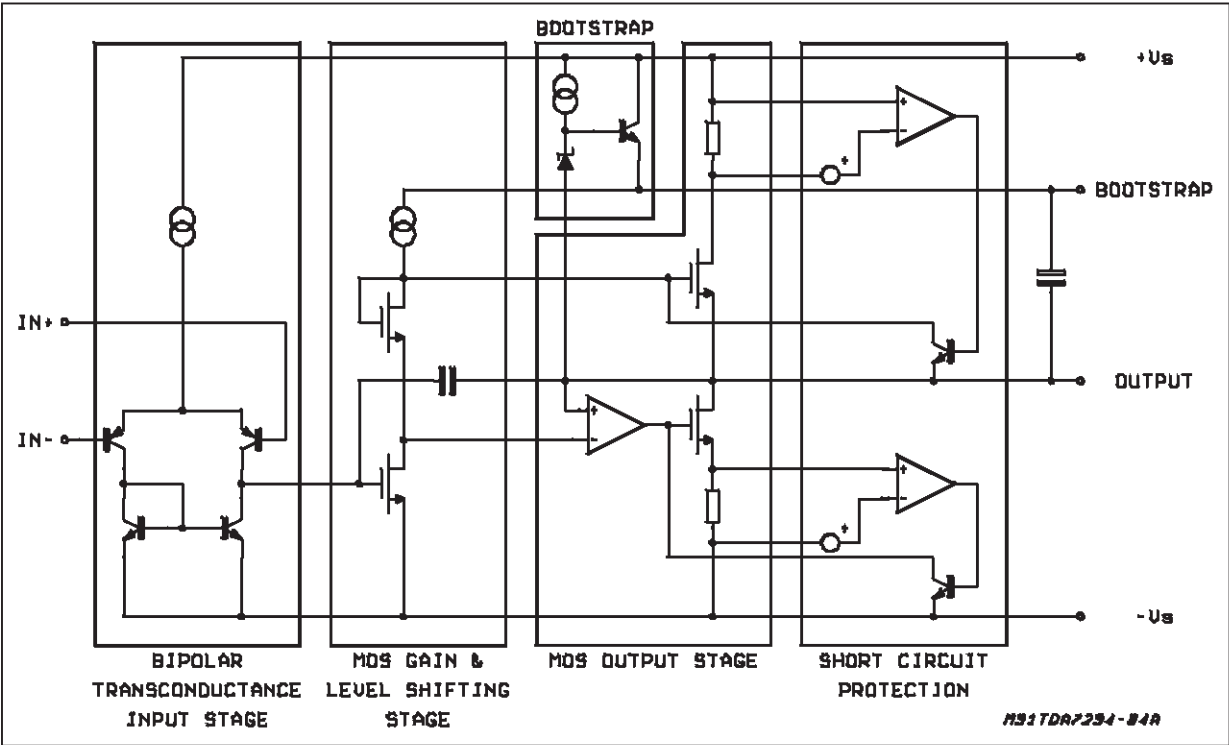


TDA7294

PIN CONNECTION (Top view)



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	Supply Voltage (No Signal)	± 50	V
I_O	Output Peak Current	10	A
P_{tot}	Power Dissipation $T_{case} = 70^\circ\text{C}$	50	W
T_{op}	Operating Ambient Temperature Range	0 to 70	$^\circ\text{C}$
T_{stg}, T_j	Storage and Junction Temperature	150	$^\circ\text{C}$

THERMAL DATA

Symbol	Description	Value	Unit
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max 1.5	°C/W

ELECTRICAL CHARACTERISTICS (Refer to the Test Circuit $V_S = \pm 35V$, $R_L = 8\Omega$, $G_V = 30dB$; $R_g = 50\Omega$; $T_{amb} = 25^\circ C$, $f = 1\ kHz$; unless otherwise specified.

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_S	Supply Range		± 10		± 40	V
I_q	Quiescent Current		20	30	60	mA
I_b	Input Bias Current				500	nA
V_{OS}	Input Offset Voltage				± 10	mV
I_{OS}	Input Offset Current				± 100	nA
P_O	RMS Continuous Output Power	$d = 0.5\%$: $V_S = \pm 35V$, $R_L = 8\Omega$ $V_S = \pm 31V$, $R_L = 6\Omega$ $V_S = \pm 27V$, $R_L = 4\Omega$	60 60 60	70 70 70		W W W
	Music Power (RMS) IEC268.3 RULES - $\Delta t = 1s$ (*)	$d = 10\%$ $R_L = 8\Omega$; $V_S = \pm 38V$ $R_L = 6\Omega$; $V_S = \pm 33V$ $R_L = 4\Omega$; $V_S = \pm 29V$ (***)		100 100 100		W W W
d	Total Harmonic Distortion (**)	$P_O = 5W$; $f = 1kHz$ $P_O = 0.1$ to $50W$; $f = 20Hz$ to $20kHz$		0.005	0.1	% %
		$V_S = \pm 27V$, $R_L = 4\Omega$: $P_O = 5W$; $f = 1kHz$ $P_O = 0.1$ to $50W$; $f = 20Hz$ to $20kHz$		0.01	0.1	% %
SR	Slew Rate		7	10		V/ μs
G_V	Open Loop Voltage Gain			80		dB
G_V	Closed Loop Voltage Gain		24	30	40	dB
e_N	Total Input Noise	A = curve $f = 20Hz$ to $20kHz$		1 2	5	μV μV
f_L, f_H	Frequency Response (-3dB)	$P_O = 1W$	20Hz to 20kHz			
R_i	Input Resistance		100			k Ω
SVR	Supply Voltage Rejection	$f = 100Hz$; $V_{ripple} = 0.5V_{rms}$	60	75		dB
T_S	Thermal Shutdown			145		°C
STAND-BY FUNCTION (Ref: $-V_S$ or GND)						
$V_{ST\ on}$	Stand-by on Threshold				1.5	V
$V_{ST\ off}$	Stand-by off Threshold		3.5			V
ATT_{st-by}	Stand-by Attenuation		70	90		dB
$I_{q\ st-by}$	Quiescent Current @ Stand-by			1	3	mA
MUTE FUNCTION (Ref: $-V_S$ or GND)						
V_{Mon}	Mute on Threshold				1.5	V
V_{Moff}	Mute off Threshold		3.5			V
ATT_{mute}	Mute Attenuation		60	80		dB

Note (*):**MUSIC POWER CONCEPT**

MUSIC POWER is the maximal power which the amplifier is capable of producing across the rated load resistance (regardless of non linearity) 1 sec after the application of a sinusoidal input signal of frequency 1KHz.

Note ():** Tested with optimized Application Board (see fig. 2)

Note (*):** Limited by the max. allowable current.