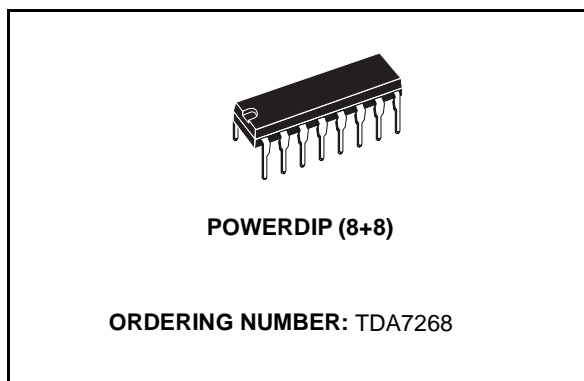


2 x 2W STEREO AUDIO AMPLIFIER

- WIDE OPERATING RANGE FROM 4.5V TO 18V
- $P_{OUT} = 2W$ @ THD 10% 12V/8 Ω
- INTERNAL FIXED GAIN 32dB
- NO FEEDBACK CAPACITOR
- NO BOUCHEROT CELL
- THERMAL PROTECTION
- AC SHORT CIRCUIT PROTECTION
- SVR CAPACITOR FOR BETTER RIPPLE REJECTION
- LOW TURN-ON/OFF POP
- VERY FEW EXTERNAL COMPONENTS
- STAND-BY MODE ($I_{ST-BY} < 300\mu A$)



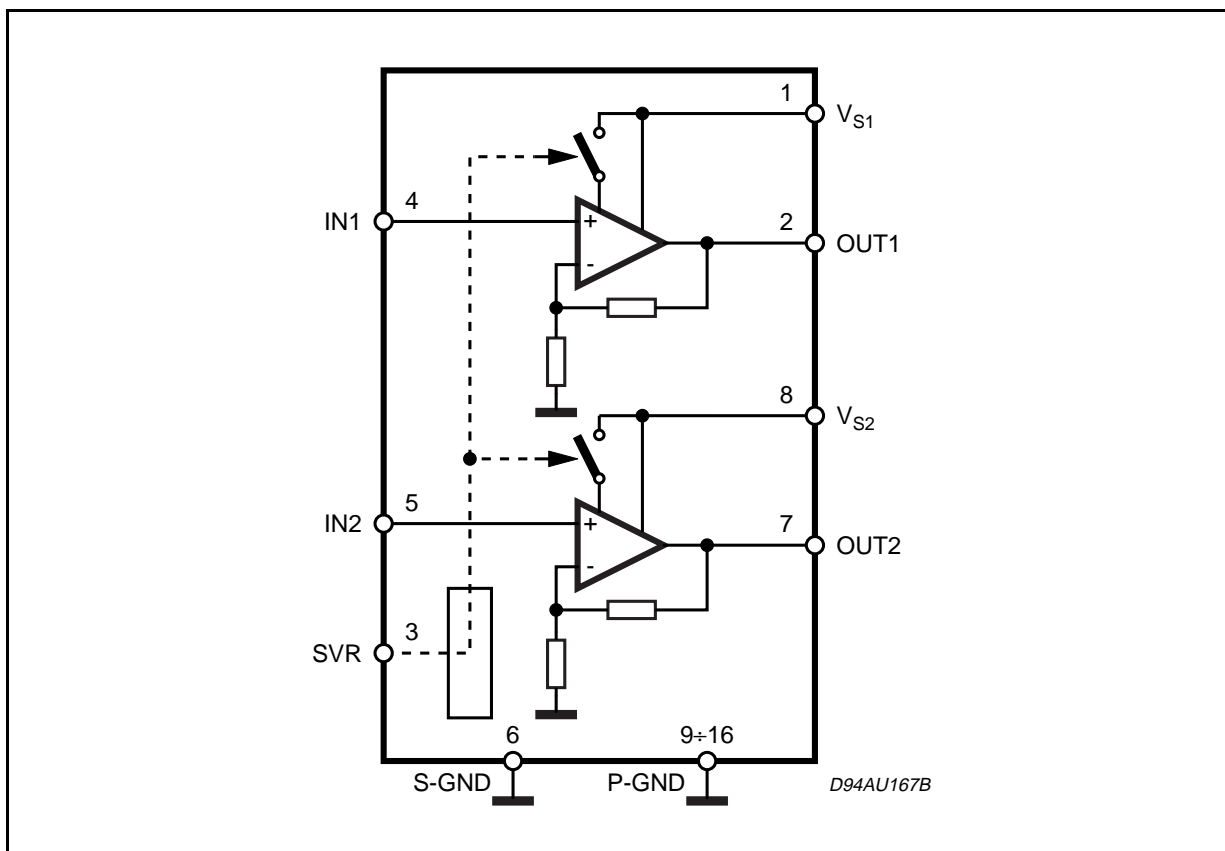
DESCRIPTION

The device TDA7268 is a new technology stereo Audio Amplifier in DIP package specially de-

signed for TV application.

Thanks to the fully complementary output configuration the device delivers a rail to rail voltage swing without need of bootstrap capacitor.

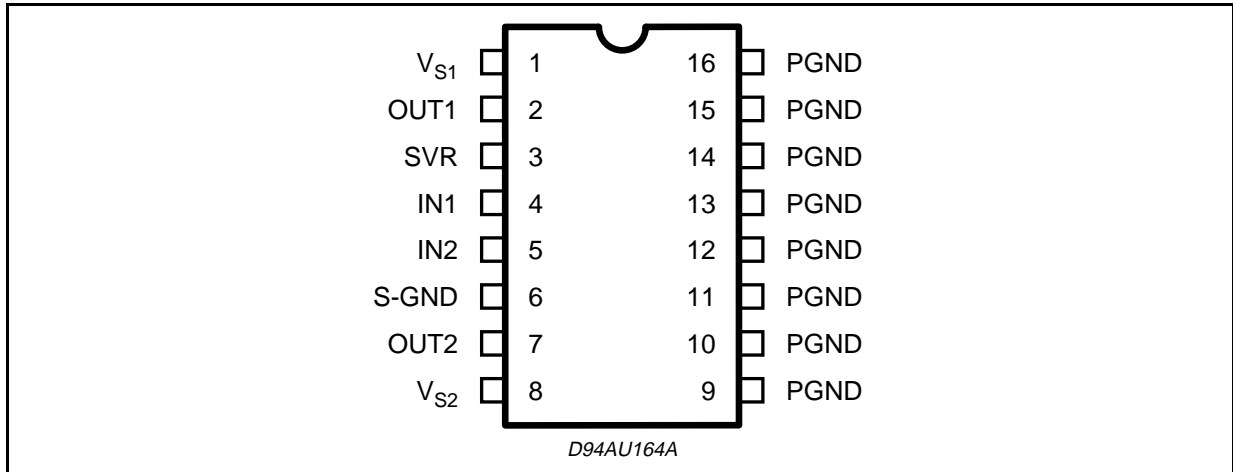
BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|-----------------------------|------------|------|
| V_S | Operating Supply Voltage | 18 | V |
| I_o | Output Peak Current | 1.5 | A |
| T_{op} | Operating Temperature Range | 0 to 70 | °C |
| T_j | Junction Temperature | 150 | °C |
| T_{stg} | Storage Temperature Range | -40 to 125 | °C |

PIN CONNECTION

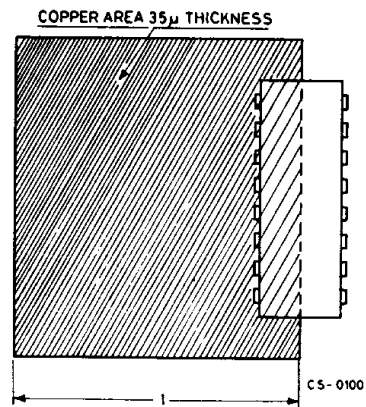
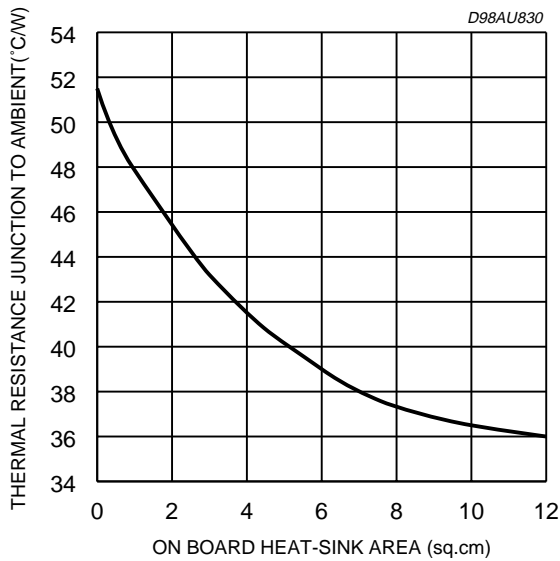


THERMAL DATA

| Symbol | Parameter | Value | Unit |
|------------------|--|-------|------|
| $R_{th\ j-amb}$ | Thermal Resistance Junction to ambient (on PCB) Max. | 70 | °C/W |
| $R_{th\ j-case}$ | Thermal Resistance Junction to case Max. | 15 | °C/W |

R_{th} with "on Board" Square Heat Sink vs. Copper Area

Example of heatsink using PC board copper



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

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Unit |
|--------------|---------------------------|---|------|----------|------|---------------|
| V_S | Supply Voltage Range | | 4.5 | | 18 | V |
| I_S | Quiescent Current | | | 40 | 60 | mA |
| I_{sb} | Stand-By Current | Pin 3 shorted to GND | | 0.15 | 0.3 | mA |
| V_O | Quiescent Output Voltage | | 5.5 | 6 | 6.5 | V |
| A_V | Voltage Gain | | 31 | 32 | 33 | dB |
| ΔA_V | Voltage Gain Matching | | | | 1.0 | dB |
| R_{IN} | Input Impedance | | 50 | 100 | | K Ω |
| P_O | Output Power | THD = 10% | 1.9 | 2 | | W |
| THD | Distortion | $P_O = 1\text{W}$ | | 0.1 | 0.4 | % |
| SVR | Supply Voltage Rejection | $V_{rip.} = 150\text{mVrms}$; $F_{rip.} = 1\text{KHz}$ $R_S = 10\text{k}\Omega$ $R_S = 50\Omega$ | 40 | 50 46 | | dB dB |
| e_n | Total Input Noise Voltage | $R_g = 10\text{K}\Omega$; BW = 20Hz to 20KHz | | 4 | 8 | μV |
| CT | Cross Talk | $P_O = 1\text{W}$; | 50 | 60 | | dB |
| V_{sb} | Stand-By Enable Voltage | $I_{sb} < 300\mu\text{A}$ | | | 1 | V |
| A_{sb} | Stand-By Attenuation | | 60 | 80 | | dB |
| P_O | Output Power | THD = 10%; $V_S = 9\text{V}$; $R_L = 4\Omega$ | | 1.8 | | W |

Fig. 1: Standard Test and Application Circuit

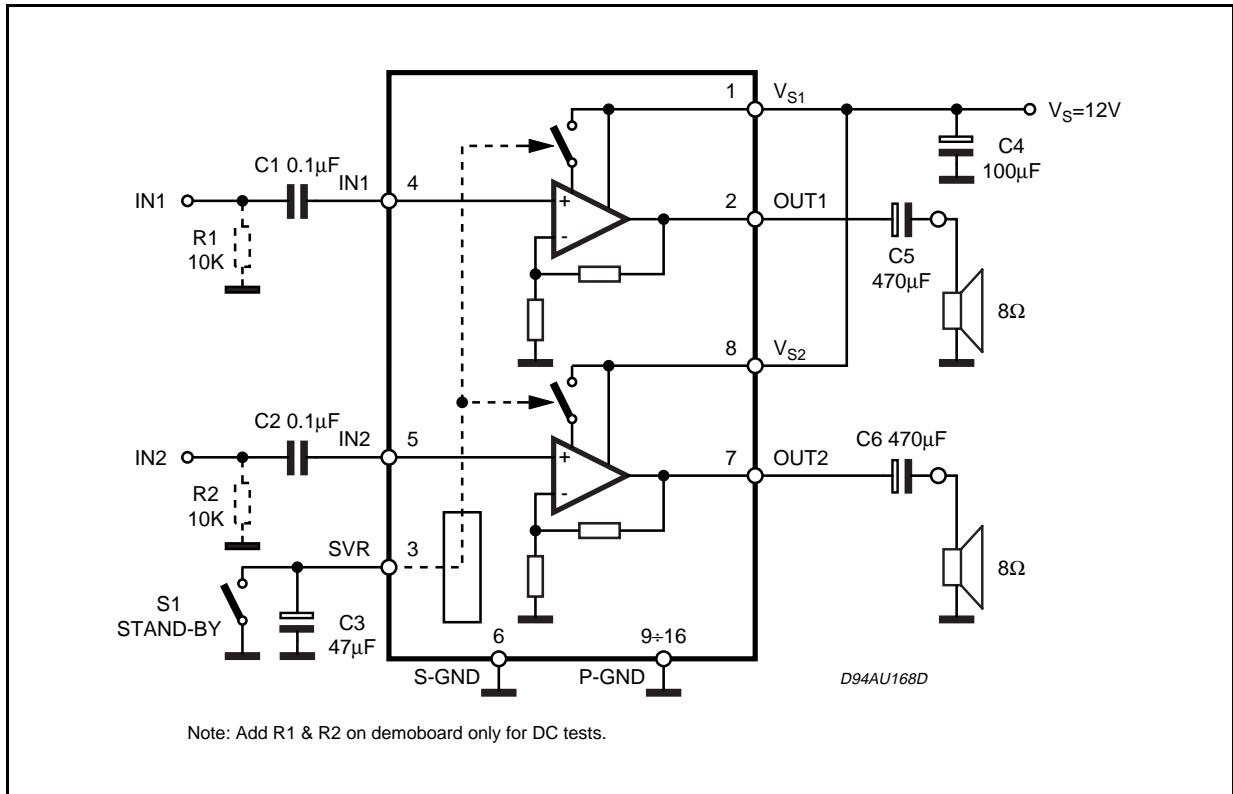
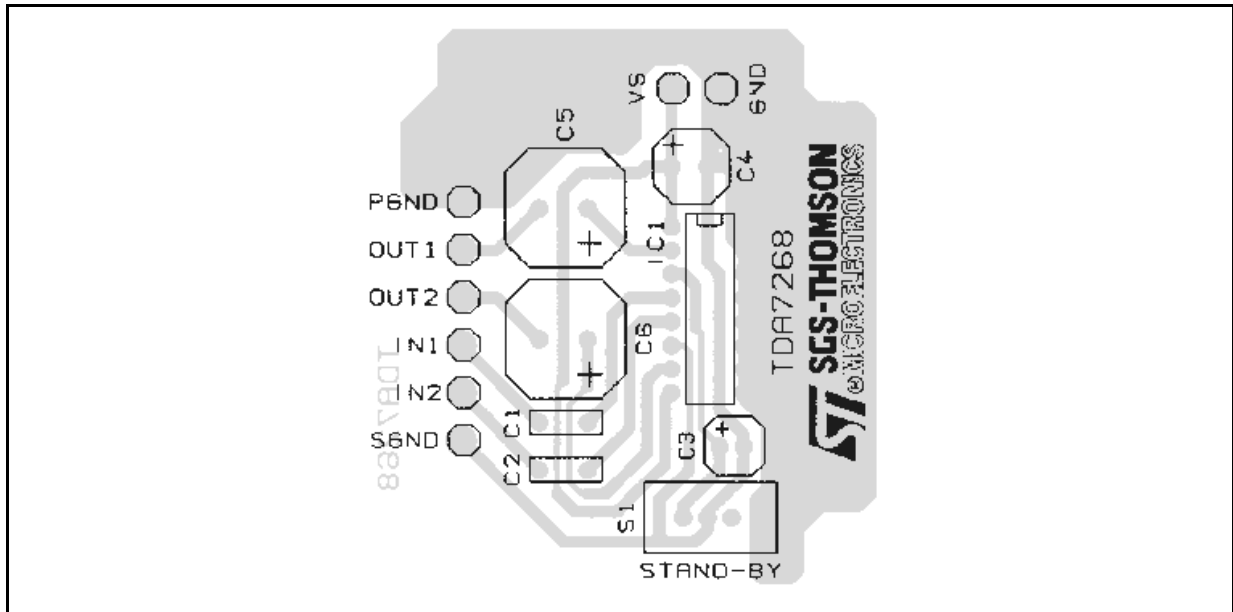


Fig. 2: PCB And Components Layout Of The Application Circuit of Figure 1



APPLICATION HINTS:

For 12V supply and 8Ω speaker application, its maximum power dissipation is about 2W.

Assuming that max ambient temperature is 70°C. Required thermal resistance of the device and heat dissipating means must be equal to (150

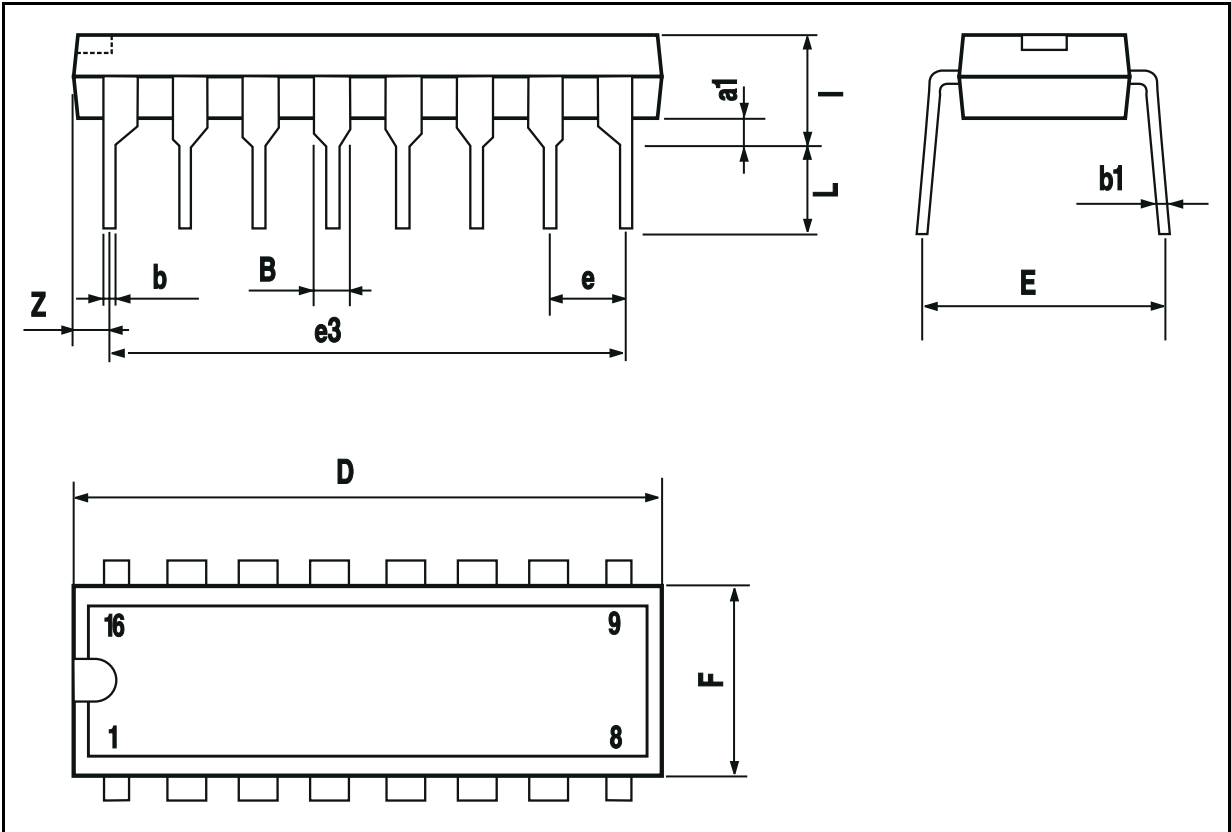
$$- 70)/2 = 40^{\circ}\text{C/W.}$$

Junction to pin thermal resistance of the package is about 15°C/W.

That means external heat sink of about 25°C/W is required. Stand-By switches must be able to discharge C_{SVR} current.

DIP16 PACKAGE MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|------|-------|------|-------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| a1 | 0.51 | | | 0.020 | | |
| B | 0.77 | | 1.65 | 0.030 | | 0.065 |
| b | | 0.5 | | | 0.020 | |
| b1 | | 0.25 | | | 0.010 | |
| D | | | 20 | | | 0.787 |
| E | | 8.5 | | | 0.335 | |
| e | | 2.54 | | | 0.100 | |
| e3 | | 17.78 | | | 0.700 | |
| F | | | 7.1 | | | 0.280 |
| l | | | 5.1 | | | 0.201 |
| L | | 3.3 | | | 0.130 | |
| Z | | | 1.27 | | | 0.050 |



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