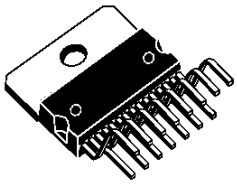
SGS-THOMSON MICROELECTRONICS

# TDA7266

## 7+7W DUAL BRIDGE AMPLIFIER

- WIDE SUPPLY VOLTAGE RANGE (3-18V)
- MINIMUM EXTERNAL COMPONENTS
  - NO SWR CAPACITOR
  - NO BOOTSTRAP
  - NO BOUCHEROT CELLS
  - INTERNALLY FIXED GAIN
- STAND-BY & MUTE FUNCTIONS
- SHORT CIRCUIT PROTECTION
- THERMAL OVERLOAD PROTECTION

**TECHNOLOGY BI20II**



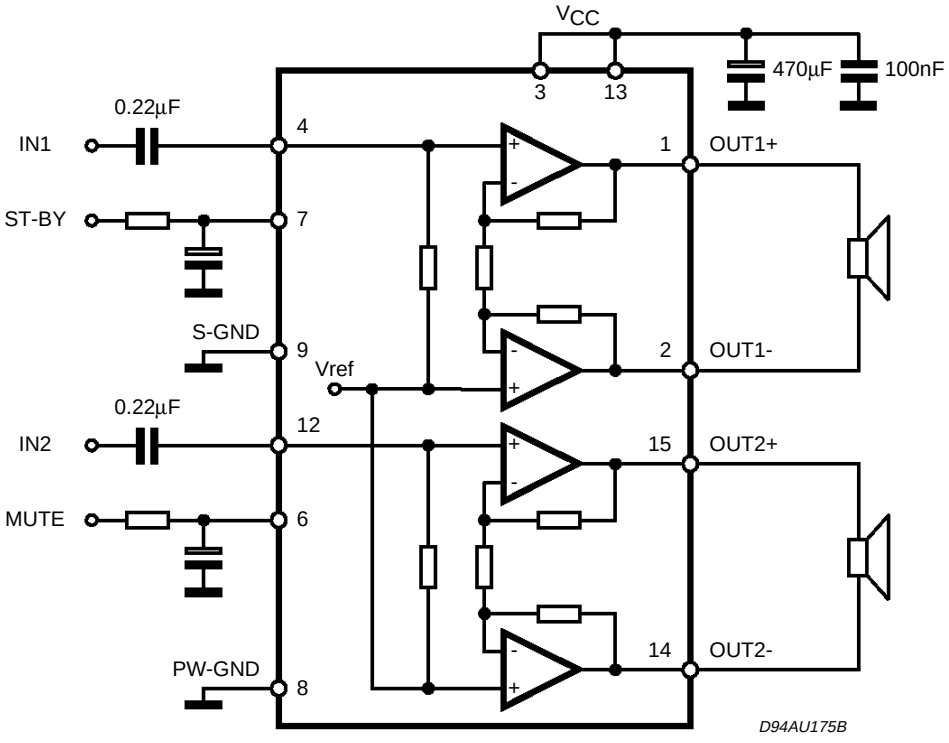
**Multiwatt 15**

**ORDERING NUMBER:** TDA7266

### DESCRIPTION

The TDA7266 is a dual bridge amplifier specially designed for TV and Portable Radio applications.

### BLOCK AND APPLICATION DIAGRAM



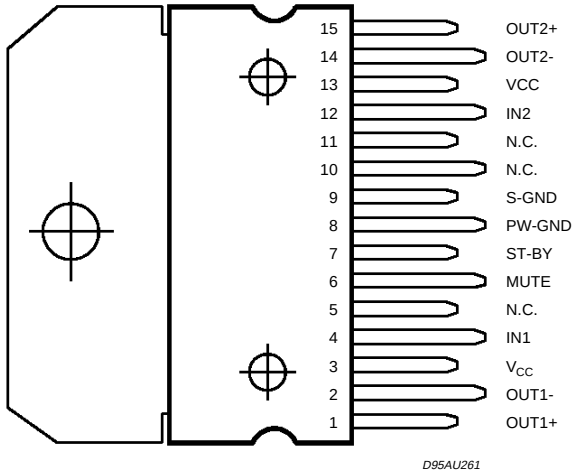
## ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_S$ | Supply Voltage | 20 | V |
| $I_O$ | Output Peak Current (internally limited) | 2 | A |
| $P_{tot}$ | Total Power Dissipation ($T_{case}$ = 70°C) | 33 | W |
| $T_{op}$ | Operating Temperature | 0 to 70 | °C |
| $T_{stg}$, $T_j$ | Storage and Junction Temperature | -40 to +150 | °C |

## THERMAL DATA

| Symbol | Description | | Value | Unit |
|---|---|---|---|---|
| $R_{th\ j\text{-}case}$ | Thermal Resistance Junction to case | Max | 2.4 | °C/W |

**PIN CONNECTION** (Top view)




**ELECTRICAL CHARACTERISTICS** ($V_{CC}$ = 11V, $R_L$ = 8Ω, f = 1kHz, $T_{amb}$ = 25°C unless otherwise specified.)

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $V_{CC}$ | Supply Range | | 3 | 11 | 18 | V |
| $I_q$ | Total Quiescent Current | | | 40 | 60 | mA |
| $V_{OS}$ | Output Offset Voltage | | | | 200 | mV |
| $P_O$ | Output Power | THD = 10% | | 7 | | W |
| THD | Total Harmonic Distortion | $P_O$ = 0.5W | | | 1 | % |
| SVR | Supply Voltage Rejection | | 36 | | | dB |
| CT | Crosstalk | | 40 | | | dB |
| $A_{MUTE}$ | Mute Attenuation | | | 60 | | dB |
| $T_W$ | Thermal Threshold | | | 150 | | °C |
| $G_V$ | Closed Loop Voltage Gain | | 25 | 26 | 27 | dB |
| $R_i$ | Input Resistance | | | 30 | | KΩ |
| $VT_{MUTE}$ | Mute Threshold | for $V_{CC}$ > 6.4V; $V_O$ = -30dB<br>for $V_{CC}$ < 6.4V; $V_O$ = -30dB<br>for $V_{CC}$ = 5V; $V_O$ = -30dB | 1.8<br><br>1.5 | 2.9<br>$V_{CC}$/2<br>2.1 | | V<br>V<br>V |
| $VT_{ST\text{-}BY}$ | St-by Threshold | | 1 | 1.3 | | V |
| $e_N$ | Total Output Noise Voltage | A curve<br>f = 20Hz to 20kHz | | 150 | | µV |

## APPLICATION SUGGESTION

STAND-BY AND MUTE FUNCTIONS

### (A) Microprocessor Application

In order to avoid annoying "Pop-Noise" during Turn-On/Off transients, it is necessary to guarantee the right St-by and mute signals sequence.
It is quite simple to obtain this function using a microprocessor (Fig. 1 and 2).

At first St-by signal (from mP) goes high and the voltage across the St-by terminal (Pin 7) starts to increase exponentially. The external RC network is intended to turn-on slowly the biasing circuits of the amplifier, this to avoid "POP" and "CLICK" on the outputs.

When this voltage reaches the St-by threshold level, the amplifier is switched-on and the external capacitors in series to the input terminals (C3, C5) start to charge.

It's necessary to mantain the mute signal low until the capacitors are fully charged, this to avoid that the device goes in play mode causing a loud "Pop Noise" on the speakers.

A delay of 100-200ms between St-by and mute signals is suitable for a proper operation.

**Figure 1:** Microprocessor Application

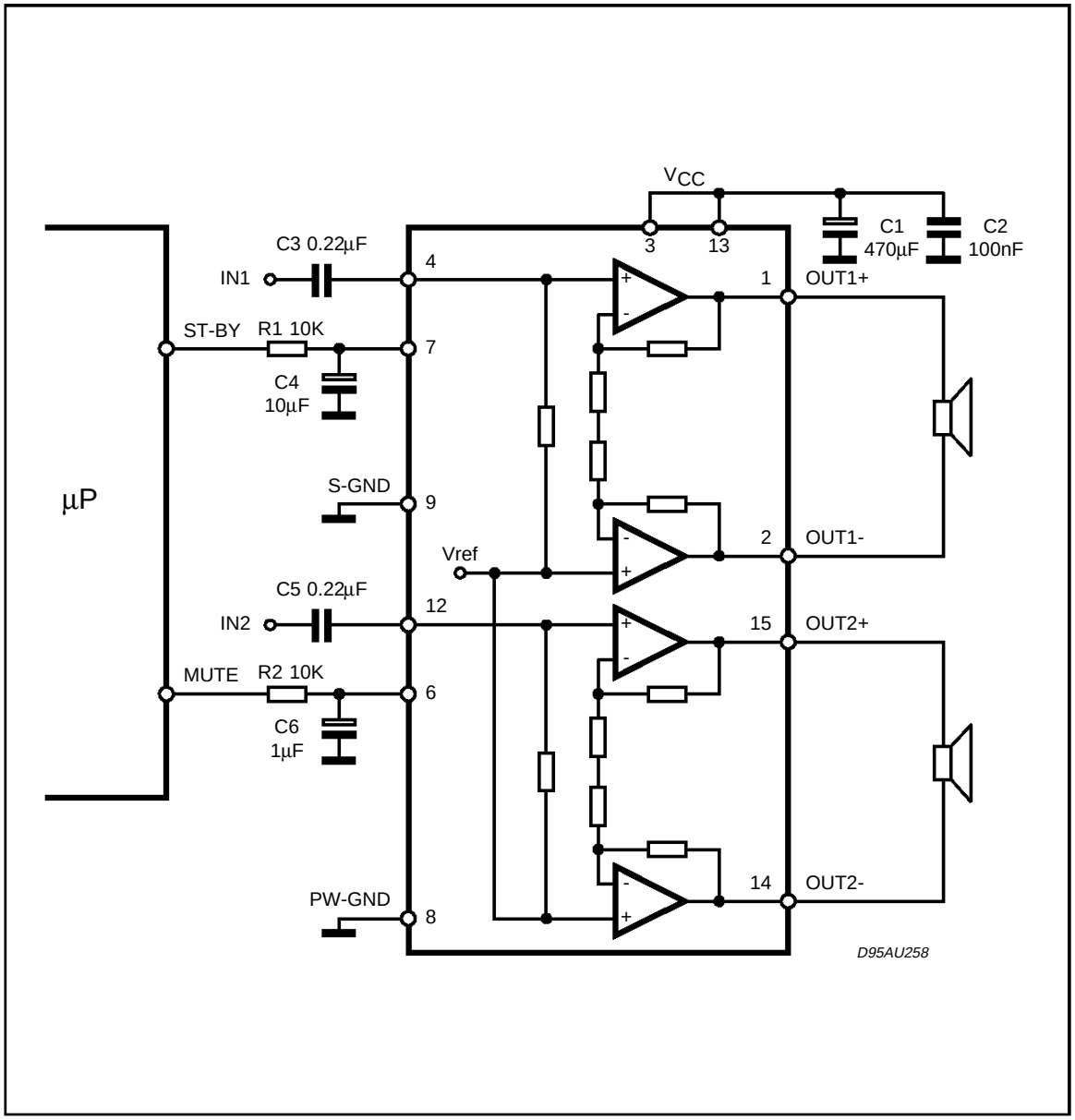
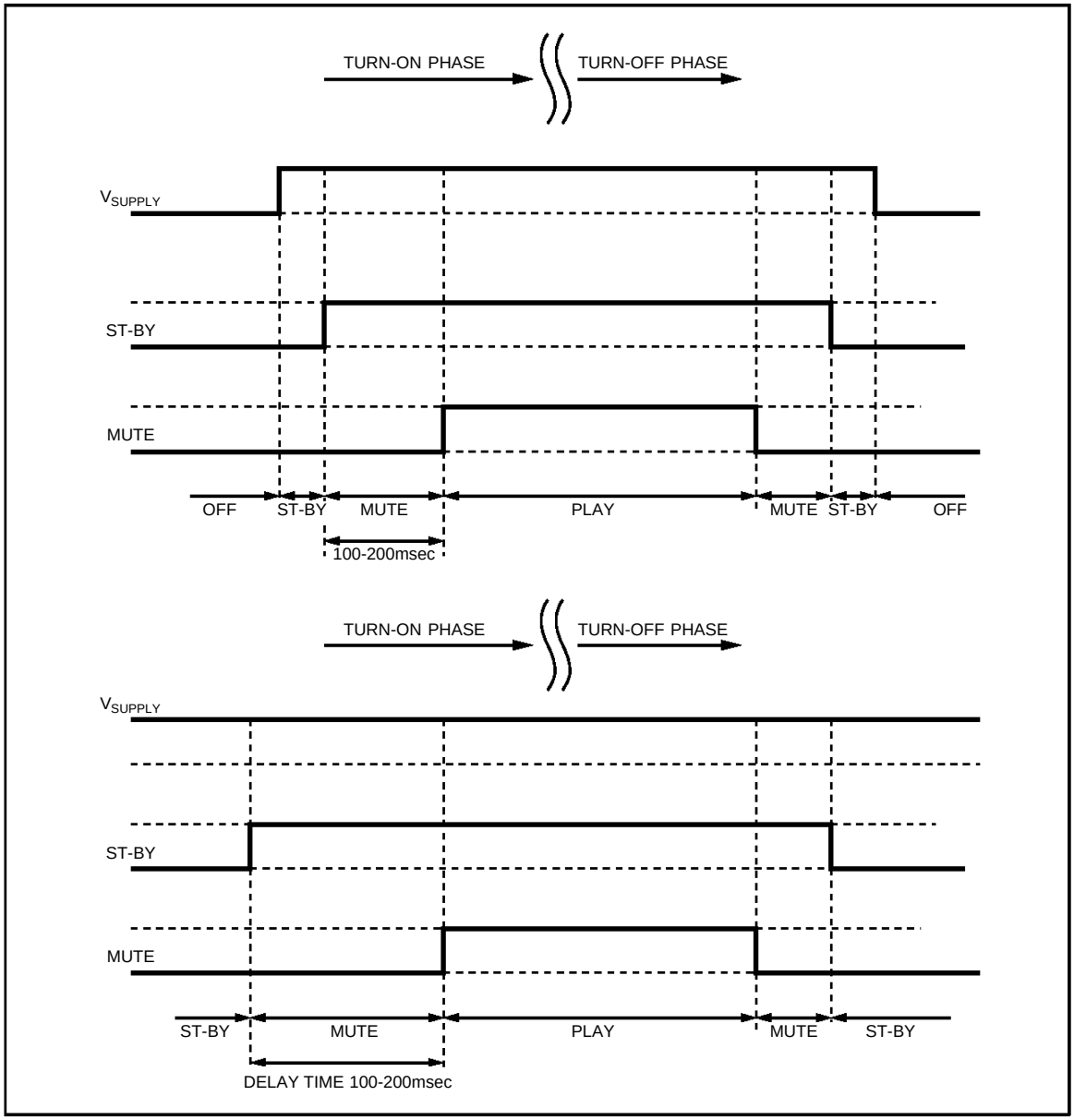


**Figure 2:** Microprocessor Driving Signals.



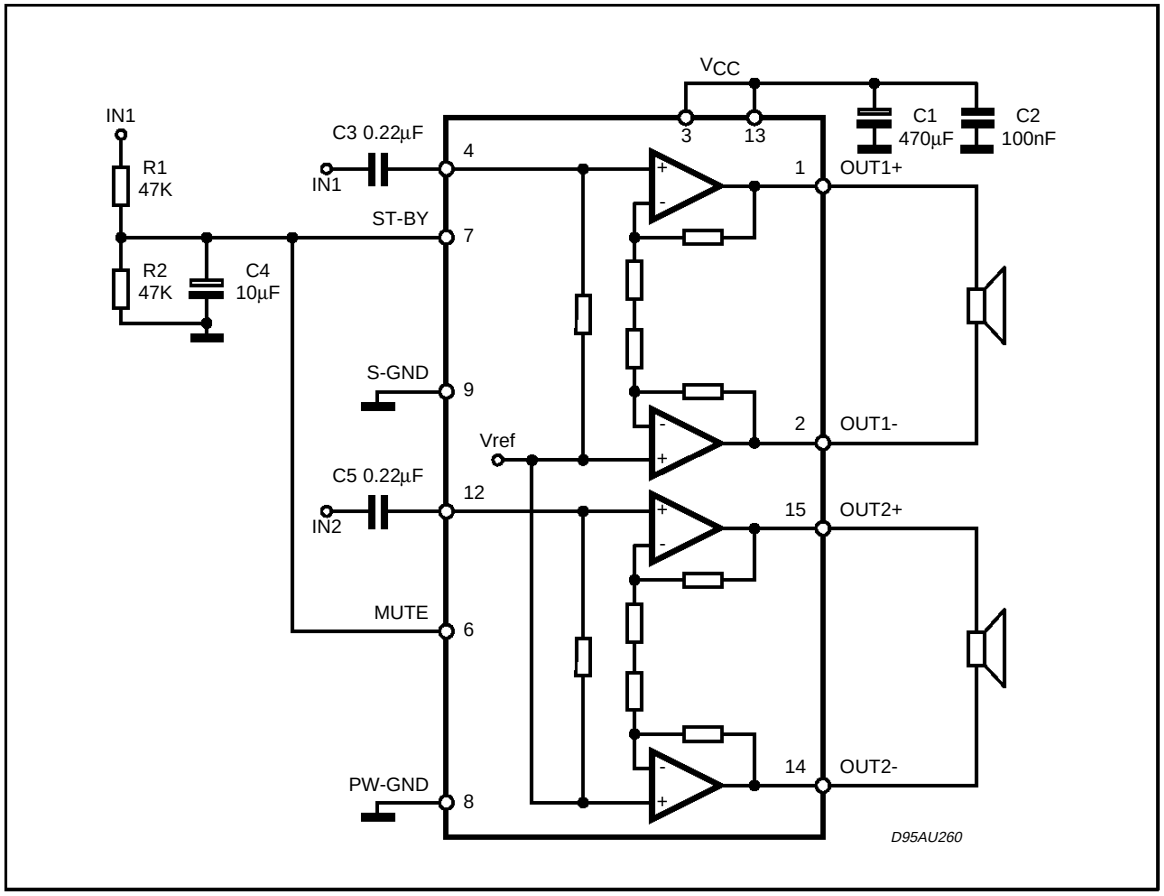

**(B) Low Cost Application**

In low cost applications where the mP is not present, the suggested circuit is shown in fig.3.

The St-by and mute terminals are tied together and they are connected to the supply line via an external voltage divider.

The device is switched-on/off from the supply line and the external capacitor C4 is intended to delay the St-by and mute threshold exceeding, avoiding "Popping" problems.

**Figure 3:** Stand-alone Low-cost Application.



## MULTIWATT15 PACKAGE MECHANICAL DATA

| DIM. | mm | | | inch | | |
|---|---|---|---|---|---|---|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | | | 5 | | | 0.197 |
| B | | | 2.65 | | | 0.104 |
| C | | | 1.6 | | | 0.063 |
| D | | 1 | | | 0.039 | |
| E | 0.49 | | 0.55 | 0.019 | | 0.022 |
| F | 0.66 | | 0.75 | 0.026 | | 0.030 |
| G | 1.02 | 1.27 | 1.52 | 0.040 | 0.050 | 0.060 |
| G1 | 17.53 | 17.78 | 18.03 | 0.690 | 0.700 | 0.710 |
| H1 | 19.6 | | | 0.772 | | |
| H2 | | | 20.2 | | | 0.795 |
| L | 21.9 | 22.2 | 22.5 | 0.862 | 0.874 | 0.886 |
| L1 | 21.7 | 22.1 | 22.5 | 0.854 | 0.870 | 0.886 |
| L2 | 17.65 | | 18.1 | 0.695 | | 0.713 |
| L3 | 17.25 | 17.5 | 17.75 | 0.679 | 0.689 | 0.699 |
| L4 | 10.3 | 10.7 | 10.9 | 0.406 | 0.421 | 0.429 |
| L7 | 2.65 | | 2.9 | 0.104 | | 0.114 |
| M | 4.25 | 4.55 | 4.85 | 0.167 | 0.179 | 0.191 |
| M1 | 4.63 | 5.08 | 5.53 | 0.182 | 0.200 | 0.218 |
| S | 1.9 | | 2.6 | 0.075 | | 0.102 |
| S1 | 1.9 | | 2.6 | 0.075 | | 0.102 |
| Dia1 | 3.65 | | 3.85 | 0.144 | | 0.152 |