

TB2901HQ

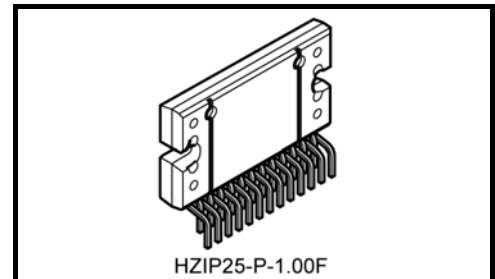
Maximum Power 47 W BTL × 4-ch Audio Power IC

The TB2901HQ is 4-ch BTL audio amplifier for car audio applications.

This IC can generate higher power: $P_{OUT\ MAX} = 47\ W$ as it includes the pure complementary P-ch and N-ch DMOS output stage.

It is designed to yield low distortion ratio for 4-ch BTL audio power amplifier, built-in standby function, muting function, and various kinds of protectors.

Additionally, high-side switch is built in.



Weight: 7.7 g (typ.)

Features

- High power output
 - : $P_{OUT\ MAX} (1) = 47\ W$ (typ.)
($V_{CC} = 14.4\ V$, $f = 1\ kHz$, JEITA max, $R_L = 4\ \Omega$)
 - : $P_{OUT\ MAX} (2) = 43\ W$ (typ.)
($V_{CC} = 13.7\ V$, $f = 1\ kHz$, JEITA max, $R_L = 4\ \Omega$)
 - $P_{OUT\ MAX} (3) = 80\ W$ (typ.)
($V_{CC} = 14.4\ V$, $f = 1\ kHz$, JEITA max, $R_L = 2\ \Omega$)
 - : $P_{OUT} (1) = 29\ W$ (typ.)
($V_{CC} = 14.4\ V$, $f = 1\ kHz$, THD = 10%, $R_L = 4\ \Omega$)
 - : $P_{OUT} (2) = 25\ W$ (typ.)
($V_{CC} = 13.2\ V$, $f = 1\ kHz$, THD = 10%, $R_L = 4\ \Omega$)
- Low distortion ratio: THD = 0.015% (typ.)
($V_{CC} = 13.2\ V$, $f = 1\ kHz$, $P_{OUT} = 5\ W$, $R_L = 4\ \Omega$)
- Low noise: $V_{NO} = 90\ \mu V_{rms}$ (typ.)
($V_{CC} = 13.2\ V$, $R_g = 0\ \Omega$, BW = 20 Hz~20 kHz, $R_L = 4\ \Omega$)
- Built-in standby switch function (pin 4)
- Built-in muting function (pin 22)
- Built-in high-side switch function (pin 25)
- Built-in various protection circuits:
 - Thermal shut down, overvoltage, out to GND, out to V_{CC} , out to out short
- Operating supply voltage: $V_{CC\ (opr)} = 9\sim 18\ V$ ($R_L = 4\ \Omega$)

Note 1: Since this device's pins have a low withstanding voltage, please handle it with care.

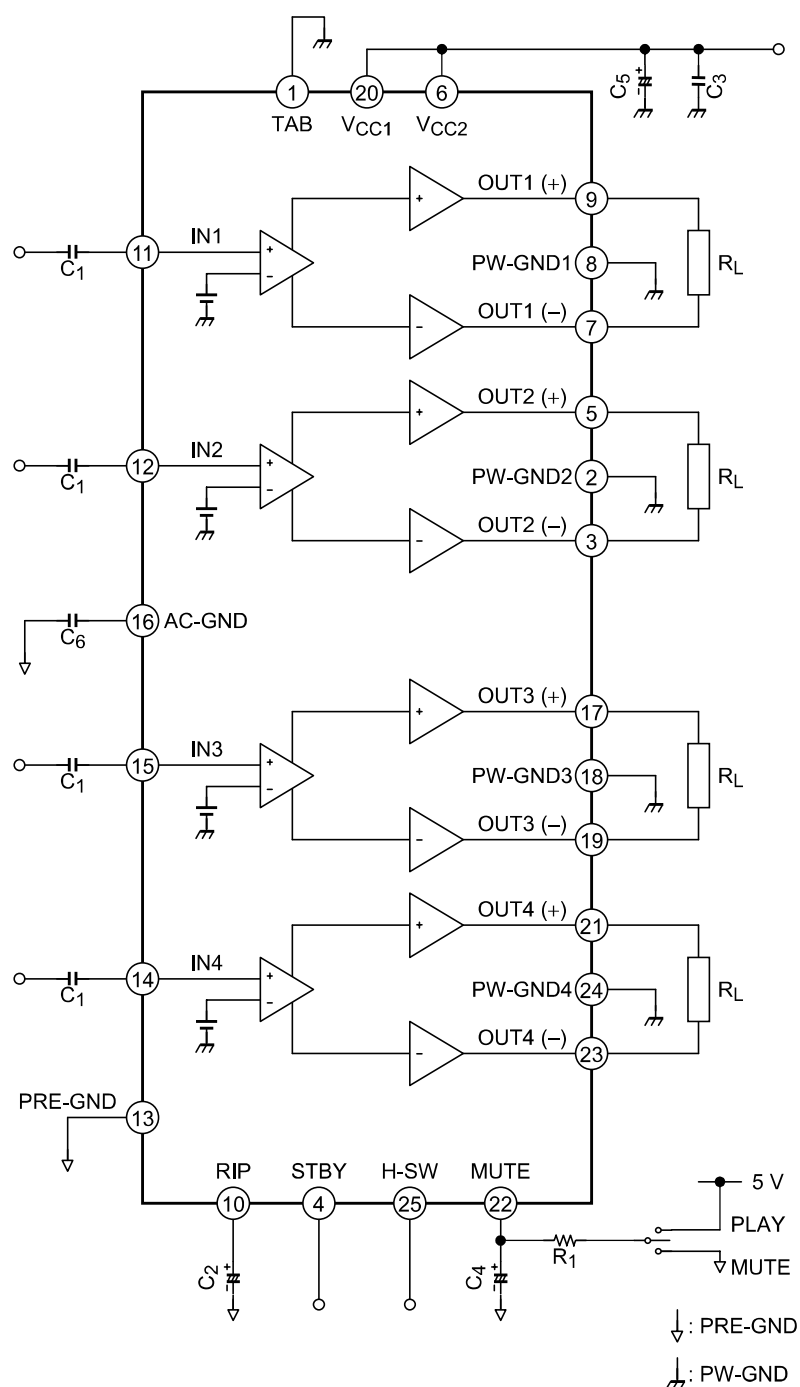
Note 2: Install the product correctly. Otherwise, it may result in break down, damage and/or degradation to the product or equipment.

Note 3: These protection functions are intended to avoid some output short circuits or other abnormal conditions temporarily. These protect functions do not warrant to prevent the IC from being damaged.

In case of the product would be operated with exceeded guaranteed operating ranges, these protection features may not operate and some output short circuits may result in the IC being damaged.

Note 4: The protection circuit may operate not correctly in case of the use of large phase-shift type speaker. Therefore, it should be confirmed that there is no problem on actual evaluation or mass-production board. Especially, it is necessary to be ware such a behavior when the large phase-shift type 2ohm load, which is a kind of sub-woofer for example, is connected to this IC, though such kind of speaker use is not recommended.

Block Diagram



Note5: Some of the functional blocks, circuits, or constants in the block diagram may be omitted or simplified for explanatory purpose.