NXP 3-W Class AB, BTL audio amplifier SA58631

Audio amplifier for portable applications

This single-channel audio amplifier provides a power output of 3 W with an 8-Ω load using a 9-V supply. Housed in an HVSON8 package with an exposed die-attach paddle, it delivers reduced thermal resistance and increased power dissipation.

Key features

- Low junction-to-ambient thermal resistance
- Fixable gain (6 to 30 dB)
- Low standby current (<10 µA)
- Standby mode controlled by CMOS-compatible levels
- No switch-on/switch-off plops
- High PSRR (50 dB minimum)
- ESD protection
- Output short-circuit-to-ground protection
- Thermal-shutdown protection
- HVSON8 package (4 x 4 x 0.8 mm)

Applications

- Professional and amateur mobile radio
- Portable consumer products (toys, games, etc.)
- PC remote speakers
- PC sound cards

The NXP 3-W Class AB, BTL audio amplifier SA58631 increases increases dissipation capability, so it is an excellent choice for a broad range of portable applications, including mobile radios, 9- and 12-V speakers, toys, games, and PC sound cards. It also supports operating systems that run between 2 and 18 V.

The device is housed in an 8-pin HVSON that measures only 4 x 4 x 0.8 mm. The package has an exposed die-attach paddle, so it reduces junction-to-ambient thermal resistance and increases power dissipation.

With a supply voltage of 9 V and an 8-Ω loudspeaker, the SA58631 can deliver an output power of 3 W. In standby mode, it consumes less than 10 µA.

The internal circuit is a BTL (Bridge Tied Load) amplifier with a complementary PNP-NPN output stage and on-chip logic for standby and mute. Total voltage loss is less than 1 V.

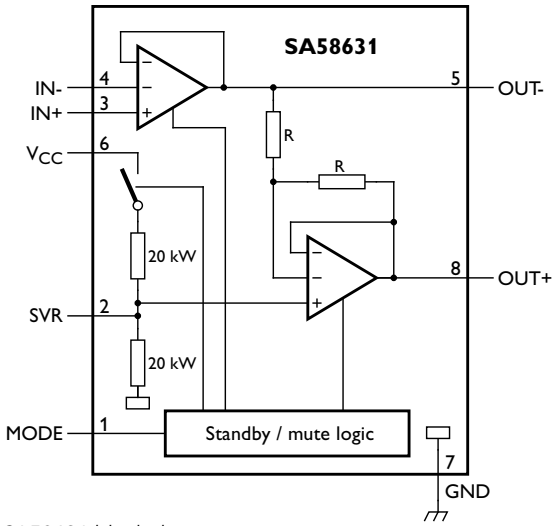
The device can be switched to standby and mute conditions via the MODE pin. Standby mode can be controlled by CMOS-compatible levels.

NXP founded by Philips

Using external feedback resistors, the gain can be fixed from 6 to 30 dB.

The device offers a minimum power-supply ripple-rejection (PSRR) ratio of 50 dB and has integrated circuitry that protects again ESD, output short-circuit to ground, and thermal shutdown.

For more information visit:
www.standardics.nxp.com



SA58631 block diagram

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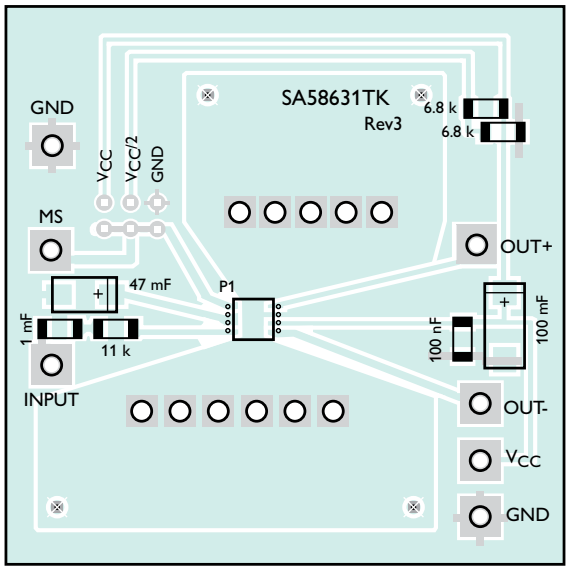

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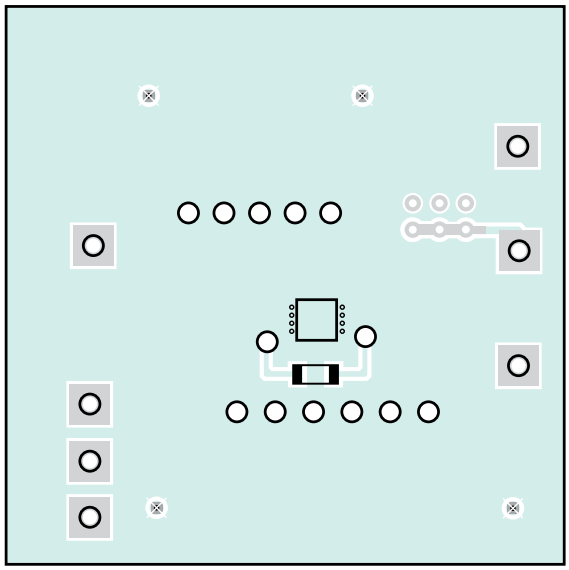

SA58631 demo board

Ordering information

Type number	Temperature range	Package	Dimensions	Version
SA58631TK	-40 to +85 °C	8-pin HVSON	4 x 4 x 0.8 mm	SOT909-1

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