KITS EDUCATIONAL ELECTRONIC

AVT 1611

4×35 W audio amplifier

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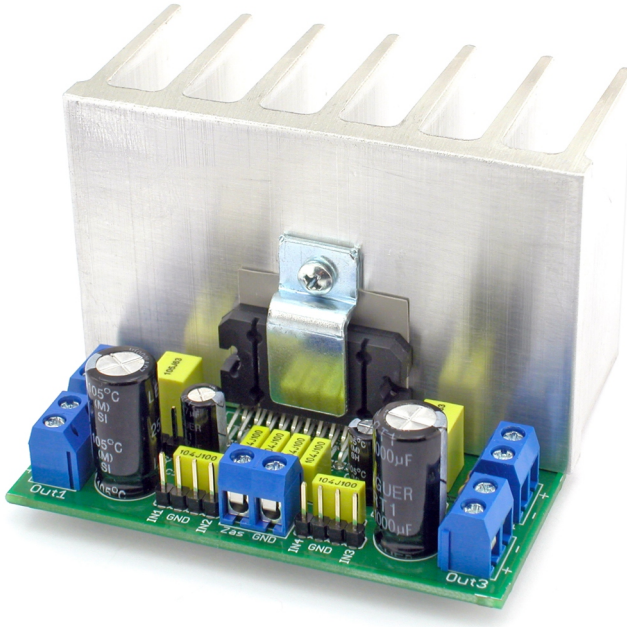

The amplifier is based on the TDA7385 integrated circuit. It is a power amplifier operating in the AB class with a power output of 35 W per channel. The amplifier module board has mute and off connectors.

Specifications

- output power 4×35 W (RL=4 Ω, Vcc=14V)
- short circuit, overheat and overvoltage protection
- stand-by and mute inputs
- power supply voltage 12-18V DC

Functional description

The TDA7385 chip has low distortion and low noise. Figure 1 and Figure 2 show the distortion characteristics as a function of output power and signal frequency. Figure 3 shows the schematic diagram of the amplifier. The TDA7835 integrated circuit is intended mainly for car amplifiers.

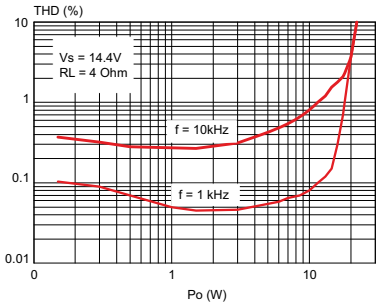

Figure 1. Distortion vs. output power

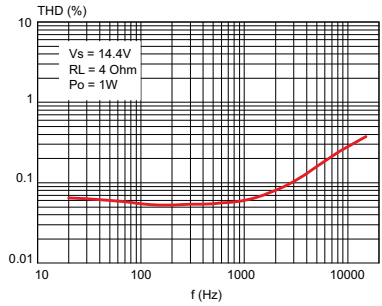

Figure 2. Distortion vs. frequency

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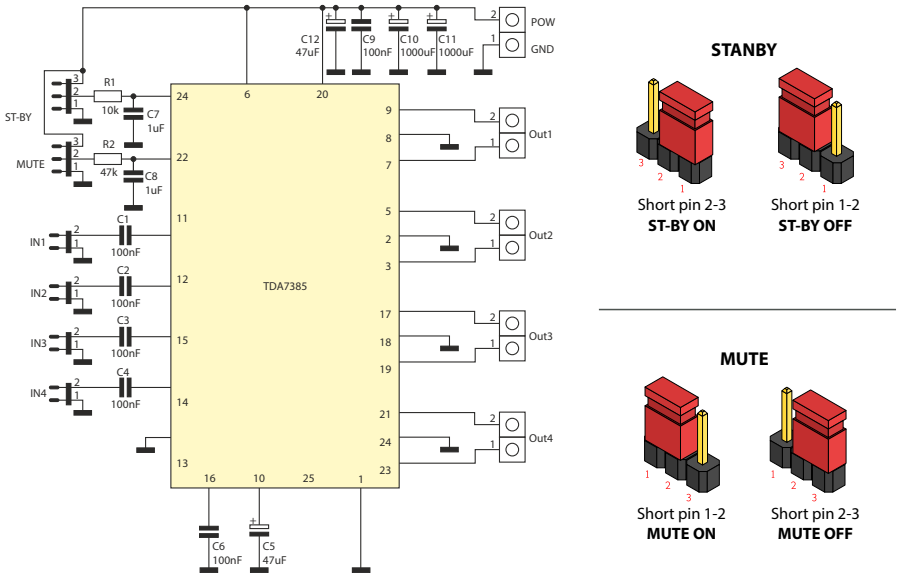

Figure 3. Schematic diagram

Assembly and test

The amplifier contains a small number of elements. Its assembly should not cause difficulties even for novice electronics. After the assembly, the amplifier is ready for operation. To switch It on, the ST-BY and MUTE terminals should be shorted to ground. The C5 and C12 capacitors should be soldered at the end, after screwing the heat sink, because mounting them may make it difficult to install the heat sink. The amplifier can be loaded with a speaker of 4Ω or greater. It must be supplied with voltage from the 12-18 V DC range.

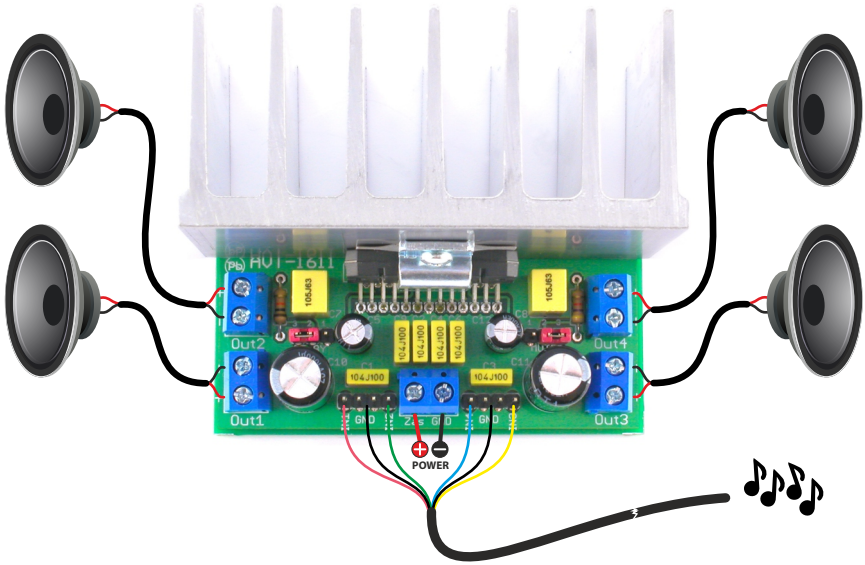

Figure 4. Connexion example

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Component list

Resistors:

R1: .....10kΩ (brown-black-orange-gold)
R2: .....47kΩ (yellow-violet-orange-gold)

Capacitors:

C1-C4, C6, C9: ...100nF (also marked as 104)
C5, C12: .....47µF !
C7, C8:.....1µF (also marked as 105)
C10, C11:.....1000µF !

Semiconductors:

US1: TDA7385

Others:

ST-BY, MUTE: .....goldpin connector 1×3pin + jumper
IN1-IN4: .....goldpin connector 1×4pin - 2pcs.
2-pin terminal block connector - 5pcs.
heatsink + fixing elements

While assembling the components marked with an exclamation mark attention should be paid to their polarity. Symbols of the components on the PCB as well as photos of assembled sets may come in useful. To access high-resolution images, download the PDF file.

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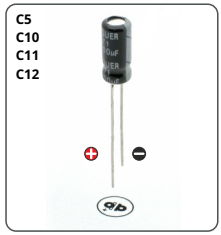
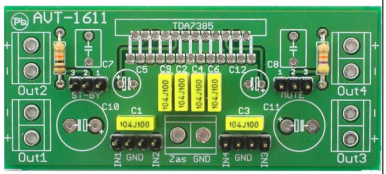


Assembly in 4 steps

1 Solder resistors R1, R2, capacitors C1-C4, C6, C9 and goldpin connectors



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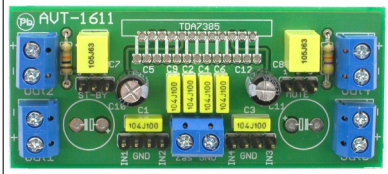
2 Solder capacitors C7, C8, C5, C12 and terminal block connectors



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3 Solder US1 and capacitors C10, C11

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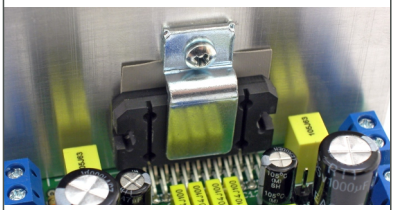
4 Screw US1 to the heat sink



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Start off by soldering the printed circuit elements in order from smallest to largest. The unit assembled flawlessly, using the supplied components will operate immediately after switching on the power supply.

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Notes

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Educational Electronics Kits are intended for educational and demonstration purposes only. They are not intended for use in commercial applications. If they are used in such applications the purchaser assumes all responsibility for ensuring compliance with all local laws. In addition, they cannot be used as a part of life support systems, or systems that for use as or as a part of life support systems, or systems that might create a hazardous situation of any kind.

• Battery or wall-adaptor are safe devices. They do not require special attention unless main voltage is connected to an output e.g. a relay.
• If the kit is used to switch currents greater than 24V it is necessary to have the installation and performed by a trained professional authorized for such work. The kit may only be used in such application if it was installed in a safe to touch enclosure.
• Never exceed the limits or ratings listed in the 'Specifications' section at the this user guide.
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• The product itself and all parts thereof (including packing material) are not suitable toys for childern! (choking hazard, risk of electric shock, ...)

Failures in modern electronic component are very rare as 95% of non-working kits are due to poor soldering or components placed in the wrong location or orientation so please check your work carefully.

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AVT SPV Sp. z o.o.

Leszczynowa 11 Street,
03-197 Warsaw, Poland
http://avtkits.com/

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