300W Boost Converter for CAR Audio
– TL494
User’s Guide
To keep the product in a best working condition and having a long service time, please operate it according to
the relevant steps. The warranty lapses if the product is damaged because of incorrect use and your
negligence.

Please read this manual carefully before you use the product and check if the product is a good one. DC12V
is recommended to be used to power the product for one hour. Never use this product in an extreme
condition.

**Warning:** Never immerse the product in the rain or any other humid environment to prevent the fire or
electric shock.

**Safety Precautions:**

1. This product is designed for Car audio amplifier. Please fix it well.
2. Protect this product well and move away metal objects from this product.
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1.1 Overview

Welcome to use this self-made 300W Boost Converter for CAR Audio - TL494. This item is especially designed for CAR audio. It can be used with amplifiers from Sure Electronics. With DC12V input, it can output voltage of DC18V, DC24V, DC30V, DC36V, DC48 and power of up to 300W. You can set DIP switches to get the voltage required in your applications. Do turn off the power before adjust the voltage.

DIP Switch Settings and Voltage

<table>
<thead>
<tr>
<th>VOUT</th>
<th>K1</th>
<th>K2</th>
<th>K3</th>
<th>K4</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>30V</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>36V</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>40V</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td>48V</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>

Please adjust the adjustable resistance-R27 if you want to get more precise voltage.

FIGURE 1-1 OVERVIEW
1.2 Features
- A mature DC/DC Boost Converter
- LED status indicator
- Voltage adjustable via DIP switch
- A smart cooling fan
- Input lines with fuses protection

1.3 Applications
- Car audio power conversion

1.4 Benefits
- Excellent heat dissipation eliminates the requirement of an extra heat sink.
- Rigorous component selection, layout and test to ensure performance stability
- Kinds of output voltage selectable
- EN pin for external connection
- Wide input voltage range
- Wide output voltage range
- Output voltage can be fine-tuned by rotating the adjustable resistance
- Low-voltage protection (10V)
- Over-voltage protection (28V)
- Fan starts to work when the output current is greater than 3A
1.5 Quick Start

Suggested connection is shown in figure 1-2.

Note:
Please observe the following steps to complete verification so as to ensure the products are intact during transit.

1. Open the product package and make sure the product is intact (No missing or damaged components and no deformation.)

2. Please observe the connection schematics when connecting the 300W Boost Converter for CAR Audio - TL494. Use nearby DC12V and a multimeter to have a trial. This 300W Boost Converter for CAR Audio - TL494 can be deemed as qualified if the indicator keeps on and output voltage is the same or similar with the value marked.
Chapter 2. Hardware Detail

2.1 Input Connection
A high-performance power supply is important for a 300W Boost Converter for CAR Audio - TL494 to output voltage and work stably. Pay attention to the polarity when connecting power supply.

2.2 Output Connection
Before power the amplifier, please test if the voltage is what you want and pay attention to the polarity.

2.3 Enable Pin Connection
When EN pin is suspended or grounded, boost converter works. When EN pin connects to DC12V, boost converter won’t work.

2.4 LED Indicator
This 300W Boost Converter for CAR Audio - TL494 has one LED indicator which shows the current operation status. The indicator will be constantly illuminated in green when the converter works normally.

FIGURE 1-2 LED INDICATOR
Chapter 3. Electrical Characteristics

Following table lists all typical data of the 300W Boost Converter for CAR Audio - TL494.

**TABLE 3-1 BASIC PARAMETERS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Condition</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Voltage</td>
<td>-</td>
<td>11V</td>
<td>12V</td>
<td>27V</td>
</tr>
<tr>
<td>EN enabled Voltage</td>
<td>-</td>
<td></td>
<td>12V</td>
<td></td>
</tr>
<tr>
<td>Output Power</td>
<td>-</td>
<td></td>
<td>300W</td>
<td></td>
</tr>
<tr>
<td>Oscillation Frequency</td>
<td>-</td>
<td></td>
<td>55KHZ</td>
<td></td>
</tr>
<tr>
<td>Quiescent Current</td>
<td>VIN=12V</td>
<td></td>
<td>20mA</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-</td>
<td>0℃</td>
<td>20℃</td>
<td>80℃</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-</td>
<td>-20℃</td>
<td>20℃</td>
<td>105℃</td>
</tr>
<tr>
<td>Thermal Shutdown</td>
<td>-</td>
<td></td>
<td>150℃</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
Stresses beyond the listed maximum power supply voltage may cause the permanent damage to components on board.
FIGURE 4-1 MECHANICAL DRAWING

4.80inch (121.90mm)
4.40inch (111.80mm)

3.20inch (81.30mm) 3.60inch (91.40mm)

0.07inch (1.90mm)

4-R
Chapter 5. Contact Us

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