Automotive External Amplifier
Increase your audio amplifier’s power without increasing the size

Build a high-power car audio amplifier solution that delivers the capabilities of the TPA32xx Ultra-HD Class-D amplifier family based on TI’s 700 W Automotive Class-D Audio External Amplifier Reference Design. Discover how much power can be achieved on a surprisingly small solution size with full support of high resolution audio and industry leading THD+N performance.

For more information please visit: ti.com/highpoweraudio

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Featured devices

TPA3251
175 W Stereo / 350 W Mono PurePath™ Ultra-HD, Analog-In Class-D Amplifier

LM25122-Q1
Automotive grade, 3-42 V Wide V\textsubscript{in}, synchronous boost controller with multiphase capability

OPA1662-Q1
Automotive SoundPlus™ low-power, noise and distortion audio op amp

Application features

• Easily integrated into automotive systems with 50 V load dump and integrated protection system

• Ultra-HD audio for the best quality sound of any integrated Class-D amplifier

• 100 kHz bandwidth, which enables support for high resolution audio files and formats

• Low noise, which eliminates the “hiss” or “buzz” sounds
Select the best output power level for your project. The TPA32xx family features Class-D amplifier with capabilities from 35W to 315W Stereo / 650W Mono per device.

**Amplifier Stage**

Audio source

Class-D Amplifier TPA3251

OPA1662A-Q1

**Power Stage**

Car Battery 9.0 - 16.0 V

Synchronous-Booster LM25122-Q1

36.0 V at 10.0 A (20.0 A peak)

Synchronous-Booster LM25122-Q1

**TPA32xx High-Power, High-Performance Class-D Amplifiers**

<table>
<thead>
<tr>
<th></th>
<th>TPA3244</th>
<th>TPA3245</th>
<th>TPA3250</th>
<th>TPA3251</th>
<th>TPA3255</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Power to BTL/ Ch (W)</td>
<td>110</td>
<td>145</td>
<td>130</td>
<td>220</td>
<td>315</td>
</tr>
<tr>
<td>Max Power to PBTL (W)</td>
<td>160</td>
<td>230</td>
<td>190</td>
<td>355</td>
<td>605</td>
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<tr>
<td>Min Supported BTL Load (Ω)</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
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<tr>
<td>Power Stage Supply Max (V)</td>
<td>31.5</td>
<td>31.5</td>
<td>38</td>
<td>38</td>
<td>53.5</td>
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<tr>
<td>Thermal Pad Location</td>
<td>Bottom</td>
<td>Top</td>
<td>Bottom</td>
<td>Top</td>
<td>Top</td>
</tr>
<tr>
<td>Package</td>
<td>44HTSSOP&lt;sup&gt;2&lt;/sup&gt;</td>
<td>44HTSSOP&lt;sup&gt;1&lt;/sup&gt;</td>
<td>44HTSSOP&lt;sup&gt;2&lt;/sup&gt;</td>
<td>44HTSSOP&lt;sup&gt;1&lt;/sup&gt;</td>
<td>44HTSSOP&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Dimensions</td>
<td>6.1 x 14 mm</td>
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</tbody>
</table>

<sup>1</sup> Pad-Up, pin-compatible package.  <sup>2</sup> Pad-Down, pin-compatible package.  Power numbers taken at 10% THD+N.

For more information please visit: [ti.com/highpoweraudio](http://ti.com/highpoweraudio)
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