

# TPA3245EVM

## Quick-Start Guide

➔ Start Here



[ti.com/tool/tpa3245evm](https://ti.com/tool/tpa3245evm)



TEXAS INSTRUMENTS

## Evaluation Kit Contents

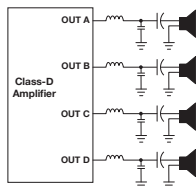
- TPA3245 device
- PCB, heat sink, and external components to evaluate at full power
- RCA input jacks
- Banana output connectors

### Not included:

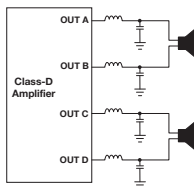
- Power supply: up to 31.5V, 12A for max power
- Speakers
- High-Resolution Audio Source

## Supported Output Configurations

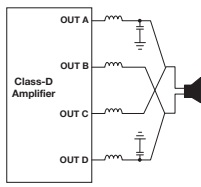
See full User's Guide online for more information.



4-Channels—Single-ended (SE)



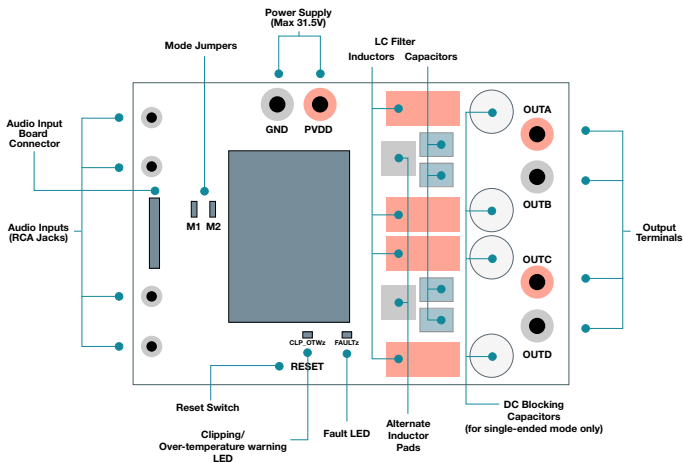
2-Channels—Bridge-tied load (BTL)



1-Channel—Parallel bridge-tied load (PBTTL)

## Getting Started

1. Ensure the RESET switch (S1) is in the RESET position.
2. Connect the power supply to the EVM using the PVDD and GND terminals.
3. Connect the first speaker to the output terminals OUTA and OUTB.
4. Connect the second speaker to the output terminals OUTC and OUTD.
5. Connect a high-resolution audio source to INA (J3) and INC (J18) for single-ended operation, which are default RCA input terminals.
6. Apply power (14V-31.5V) and move the RESET switch (S1) to the NORMAL position.



## Indicator Descriptions

3.3V – indicates the 3.3V rail used for GPIO control is active

12V – indicates the 12V rail used for amplifier gate drive is active

CLP\_OTWz – indicates when clipping or over-temperature warning occur

FAULTz – indicates when a fault condition occurs (requires toggling reset to clear fault)

| FAULTz | CLP_OTWz | Possible Faults                          |
|--------|----------|------------------------------------------|
| ON     | ON       | OTW, OTE, UVP, OLP                       |
| ON     | OFF      | UVP, OLP                                 |
| OFF    | ON       | OTW (solid), Early Clipping (flickering) |
| OFF    | OFF      | No Fault                                 |

OTW - Over-temperature warning (> 125°C)

OTE - Over-temperature error / shutdown (> 150°C)

UVP - Under-voltage protection

OLP - Over-load or over-current protection

## Default Jumper Configuration

| Jumper | Default | Comment               | Jumper | Default | Comment          |
|--------|---------|-----------------------|--------|---------|------------------|
| J29    | IN      | PVDD to 15V BUCK      | J24    | IN      | OUTC CAP SHUNT   |
| J31    | IN      | 15V BUCK to 12V TERM  | J25    | IN      | OUTD CAP SHUNT   |
| J32    | IN      | 12V LDO to 12V TERM   | J26    | 2 to 3  | INC SELECT       |
| J33    | IN      | 3.3V LDO to 3.3V TERM | J27    | 2 to 3  | IND SELECT       |
| J21    | OUT     | CSTART SE             | J7     | OUT     | PBTL SELECT INC  |
| J16    | 3 to 4  | MASTER MODE           | J8     | OUT     | PBTL SELECT IND  |
| J5     | 2 to 3  | M1-BTL                | J10    | OUT     | INA/B DIFF INPUT |
| J6     | 2 to 3  | M2-BTL                | J12    | OUT     | INC/D DIFF INPUT |
| J22    | IN      | OUTA CAP SHUNT        | J4     | 1 to 2  | INA/B SE INPUT   |
| J23    | IN      | OUTB CAP SHUNT        | J19    | 1 to 2  | INC/D SE INPUT   |

## Features & Benefits



### High-Resolution

Deliver audio as it was recorded all the way to the speaker. The TPA32xx family supports hi-res audio.



### Low-Distortion

A new closed-loop design enables ultra-low THD across all frequencies.



### High-Bandwidth

The TPA32xx family of devices support up to 100 kHz audio bandwidth.



### Efficient Design

Best power efficiency and idle losses enable low power consumption and smaller heat sink.



### High-Power

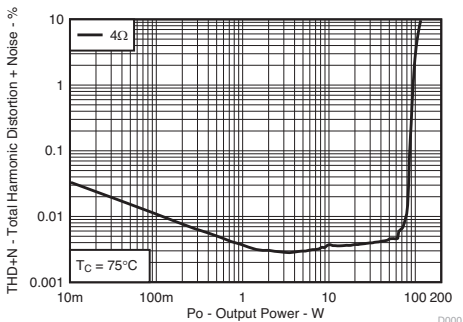
Devices with 35 W to 650 W of output power that deliver large sound in a compact size.



### Easy to use

Simplify PCB design with fewer external components, integrated protection, and scalable power options.

## THD+N vs Output Power – 4Ω, BTL, 1kHz



## TPA32xx Product Family

| Device                              | TPA3244               | TPA3245               | TPA3250               | TPA3251               | TPA3255               |
|-------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Max Power to BTL/ Ch (W)            | 110                   | 145                   | 130                   | 220                   | 315                   |
| Max Power to PBTL (W)               | 160                   | 230                   | 190                   | 355                   | 605                   |
| Min Supported BTL Load ( $\Omega$ ) | 4                     | 3                     | 4                     | 3                     | 4                     |
| Power Stage Supply Max (V)          | 31.5                  | 31.5                  | 38                    | 38                    | 53.5                  |
| Thermal Pad Location                | Bottom                | Top                   | Bottom                | Top                   | Top                   |
| Package                             | 44HTSSOP <sup>2</sup> | 44HTSSOP <sup>1</sup> | 44HTSSOP <sup>2</sup> | 44HTSSOP <sup>1</sup> | 44HTSSOP <sup>1</sup> |
| Dimensions                          | 6.1 x 14mm            |                       |                       |                       |                       |

<sup>1</sup>Pad-Up, pin-compatible package

<sup>2</sup>Pad-Down, pin-compatible package

## More Information

### TPA3245 Product Webpage

- TPA3245 Datasheet
- Complete TPA3245EVM User's Guide
- Schematics and layout

### High-Power Audio Portal

- New Products
- Technical Documents
- Support and Training
- Product Selection Tool

Available on: [ti.com/tpa3245](https://ti.com/tpa3245) Available on: [ti.com/highpoweraudio](https://ti.com/highpoweraudio)



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