TPA3255EVM

Quick-Start Guide

Start Here





ti.com/tool/tpa3255evm

Evaluation Kit Contents

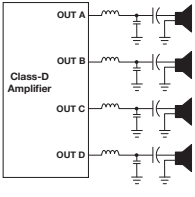
- TPA3255 device
- PCB, heat sink, and external components to evaluate at full power
- RCA input jacks
- Banana output connectors

Not included:

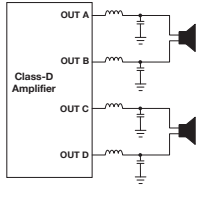
- Power supply: up to 53.5V, 12A for max power
- Speakers
- High-Resolution Audio Source

Supported Output Configurations

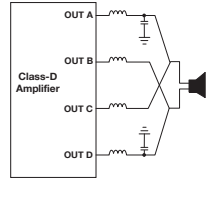
See full User's Guide online for more information.



4-Channels—single-ended (SE)



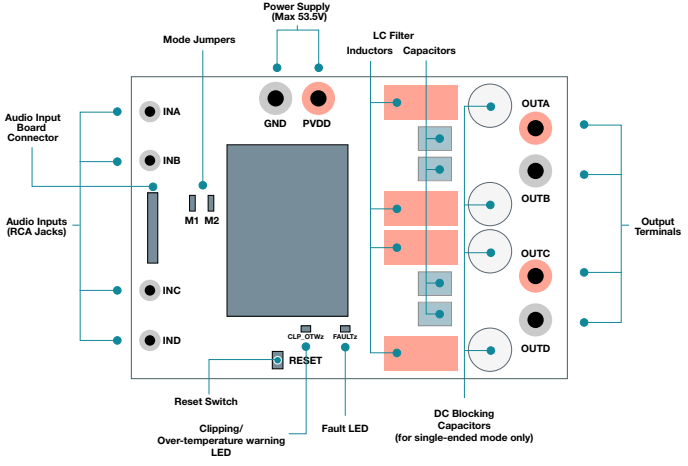
2-Channels—bridge-tied load (BTL)



1-Channel—parallel bridge-tied load (PBTL)

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-53.5V) 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 utra-low THD across all frequencies

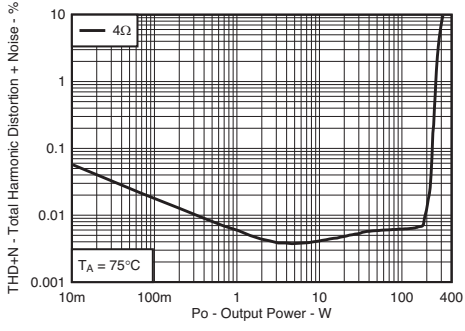
High-Bandwidth
The TPA32xx family of devices support up to 100 kHz audio bandwidth

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 (Ω)	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[2]	44HTSSOP[1]	44HTSSOP[2]	44HTSSOP[1]	44HTSSOP[1]
Dimensions	6.1 x 14mm				

[1]Pad-Up, pin-compatible package
[2]Pad-Down, pin-compatible package

More Information

TPA3255 Product Webpage

- TPA3255 Datasheet
- Complete TPA3255EVM User's Guide
- Schematics and layout

Available on: ti.com/tpa3255

High-Power Audio Portal

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

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