

# TAS5720L/M Digital Input Mono Class-D Audio Amplifier With TDM Support Up To 16 Channels

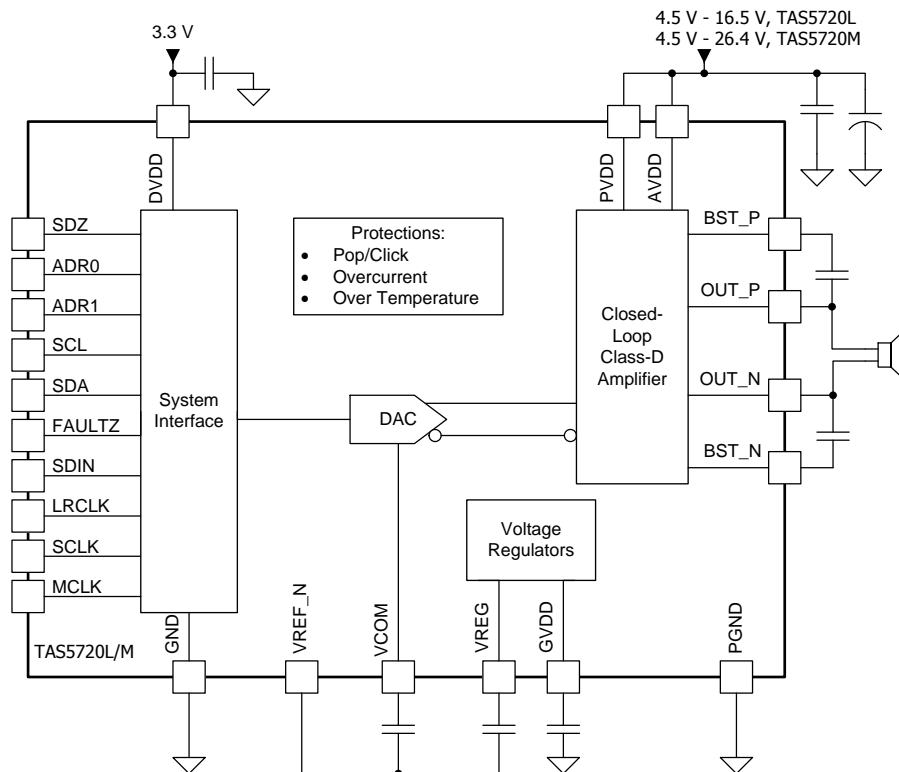
## 1 Features

- Mono Class-D Amplifier
  - 15 W at 0.02% THD Continuous into 17 V / 4 Ω
- TDM Audio Input
  - Up to 16 Channels (32-bit, 48 kHz)
- I<sup>2</sup>C Control with 16 Selectable I<sup>2</sup>C Address
- Power Supplies
  - Power Amplifier: 4.5 V to 16.5 V, TAS5720L
  - Power Amplifier: 4.5 V to 26.4 V, TAS5720M
  - Digital I/O: 3.3 V
- Protection: Thermal and Short-Circuit
- Package: 4 mm x 4 mm, 32-pin VQFN

## 2 Applications

- Sub Woofers
- Boom Boxes
- Bar Speakers
- Surround Sound Systems

## 4 Simplified Schematic



## 3 Description

The TAS5720L/M device is a high-efficiency mono Class-D audio power amplifier optimized for high transient power capability to use the dynamic power headroom of small loudspeakers. It is capable of delivering more than 15-W continuously into a 4-Ω speaker.

The digital time division multiplexed (TDM) interface enables up to 16 devices to share the same bus.

The TAS5720L/M device is available in a 32-pin, 4 mm x 4 mm, VQFN package for a compact PCB footprint.

Device Information<sup>(1)</sup>

PART NUMBER	PACKAGE	BODY SIZE (NOM)
TAS5720L	VQFN (32)	4.00 mm x 4.00 mm
TAS5720M		

(1) For all available packages, see the orderable addendum at the end of the datasheet.



## 5 Revision History

DATE	REVISION	NOTES
May 2015	*	Initial release.

## 6 Device and Documentation Support

### 6.1 Related Links

The table below lists quick access links. Categories include technical documents, support and community resources, tools and software, and quick access to sample or buy.

**Table 1. Related Links**

PARTS	PRODUCT FOLDER	SAMPLE & BUY	TECHNICAL DOCUMENTS	TOOLS & SOFTWARE	SUPPORT & COMMUNITY
TAS5720L	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>
TAS5720M	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>

### 6.2 Community Resources

The following links connect to TI community resources. Linked contents are provided "AS IS" by the respective contributors. They do not constitute TI specifications and do not necessarily reflect TI's views; see TI's [Terms of Use](#).

**TI E2E™ Online Community** *TI's Engineer-to-Engineer (E2E) Community*. Created to foster collaboration among engineers. At [e2e.ti.com](http://e2e.ti.com), you can ask questions, share knowledge, explore ideas and help solve problems with fellow engineers.

**Design Support** *TI's Design Support* Quickly find helpful E2E forums along with design support tools and contact information for technical support.

### 6.3 Trademarks

E2E is a trademark of Texas Instruments.  
All other trademarks are the property of their respective owners.

### 6.4 Electrostatic Discharge Caution



These devices have limited built-in ESD protection. The leads should be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates.

### 6.5 Glossary

**SLYZ022** — *TI Glossary*.

This glossary lists and explains terms, acronyms, and definitions.

## 7 Mechanical, Packaging, and Orderable Information

The following pages include mechanical packaging and orderable information. This information is the most current data available for the designated devices. This data is subject to change without notice and revision of this document. For browser-based versions of this data sheet, refer to the left-hand navigation.

**PACKAGING INFORMATION**

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
TAS5720LRSMR	PREVIEW	VQFN	RSM	32	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-3-260C-168 HR	-20 to 85	TAS 5720L	
TAS5720LRSMT	PREVIEW	VQFN	RSM	32	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-3-260C-168 HR	-20 to 85	TAS 5720L	
TAS5720MRSMR	PREVIEW	VQFN	RSM	32	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-3-260C-168 HR	0 to 70	TAS 5720M	
TAS5720MRSMT	PREVIEW	VQFN	RSM	32	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-3-260C-168 HR	0 to 70	TAS 5720M	

(1) The marketing status values are defined as follows:

**ACTIVE:** Product device recommended for new designs.

**LIFEBUY:** TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.

**NRND:** Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.

**PREVIEW:** Device has been announced but is not in production. Samples may or may not be available.

**OBSELETE:** TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check <http://www.ti.com/productcontent> for the latest availability information and additional product content details.

**TBD:** The Pb-Free/Green conversion plan has not been defined.

**Pb-Free (RoHS):** TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.

**Pb-Free (RoHS Exempt):** This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.

**Green (RoHS & no Sb/Br):** TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

(3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

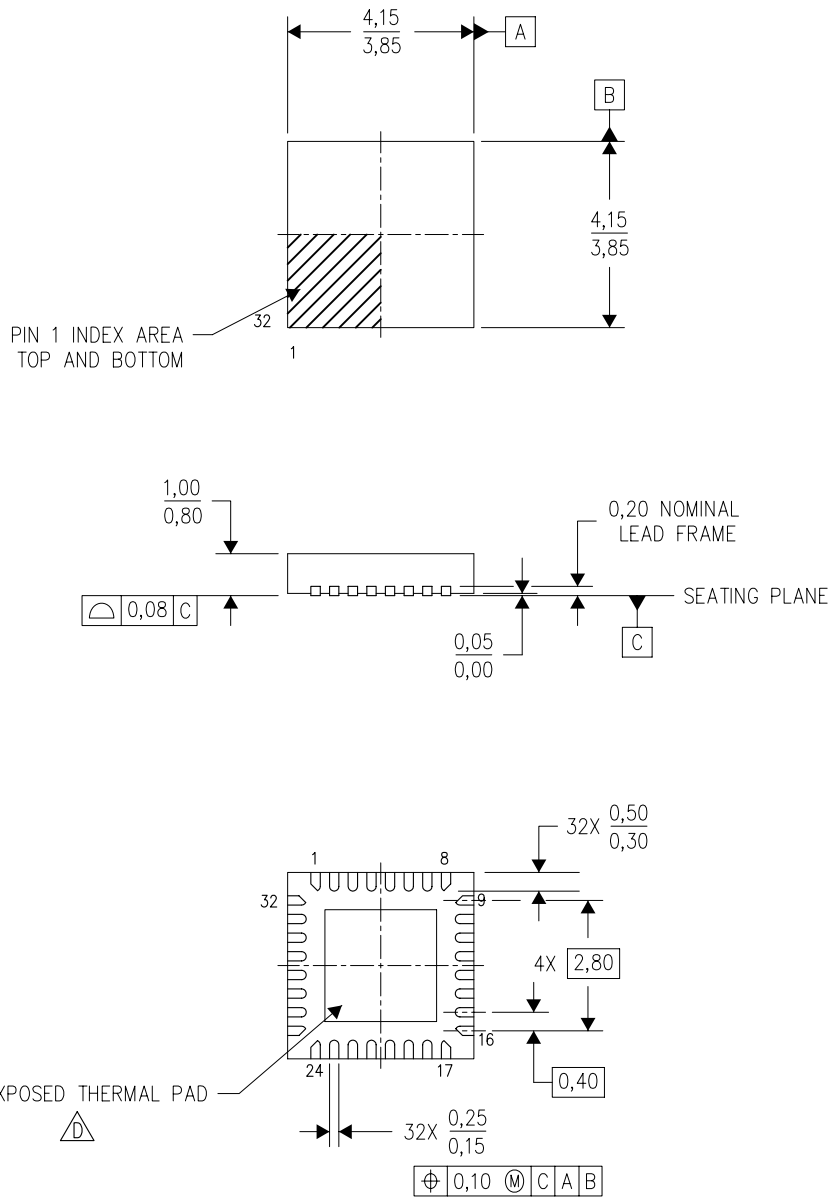
(6) Lead/Ball Finish - Orderable Devices may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead/Ball Finish values may wrap to two lines if the finish value exceeds the maximum column width.

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RSM (S-PVQFN-N32)

PLASTIC QUAD FLATPACK NO-LEAD



4207560/B 03/10

- NOTES:
- A. All linear dimensions are in millimeters. Dimensioning and tolerancing per ASME Y14.5M-1994.
  - B. This drawing is subject to change without notice.
  - C. QFN (Quad Flatpack No-Lead) Package configuration.
  -  The package thermal pad must be soldered to the board for thermal and mechanical performance. See the Product Data Sheet for details regarding the exposed thermal pad dimensions.

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### Applications

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