

Autonomous Audio Headset Switch with Reduced GND Switch R_{ON} and FM Capability

Check for Samples: [TS3A226E](#)

FEATURES

- Ground FET Switches (60m Ω typical)
- Autonomous Detection of Headset Types: 3-Poles or 4-Poles (with MIC on SLEEVE or RING2)
- Microphone Line Switches
- Supports FM Signal Transmission Through the Ground FETs
- Reduction of Click/Pop Noise
- VDD Range: 2.6 V – 4.7 V
- THD (Mic): 0.002% Typical
- Low Current Consumption: 6.5- μ A Typical
- \pm 8kV Contract Discharge (IEC 61000-4-2) ESD Performance on SLEEVE and RING2 Pins

APPLICATIONS

- Mobile Phones / Tablet PCs
- Notebook/Ultrabook Computers

DESCRIPTION

The TS3A226E is an audio headset switch that detects 3- or 4-pole 3.5mm accessories. For a 4-pole accessory with a microphone, the TS3A226E also detects the MIC location and routes the microphone and ground signals automatically. The ground signal is routed through a pair of low-impedance ground FETs (60m Ω typical), resulting minimal impact on audio cross-talk performance. The autonomous detection feature allows end users to plug in accessories with different audio pole configurations into the mobile device and have them operate properly with no added software control and complexity. The ground FETs of the device are designed to allow FM signal pass-through, making it possible to use the ground line of the headset as an FM antenna in mobile audio application.

The TS3A226E is packaged within a 1.2mm \times 1.2mm WCSP package, making it suitable for use in mobile application.

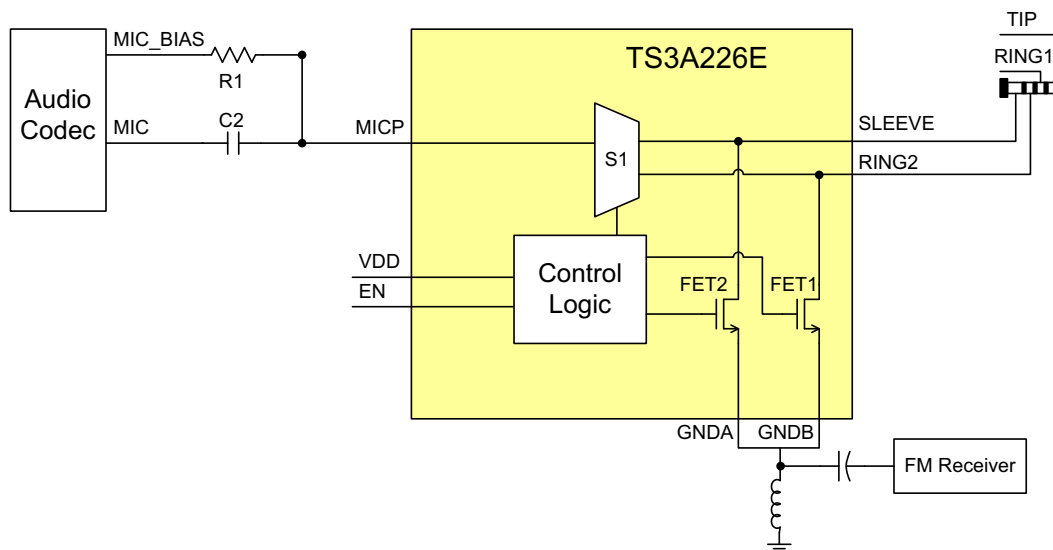


Figure 1. Typical Application Diagram

ORDERING INFORMATION

T _A	PACKAGE ⁽¹⁾⁽²⁾		ORDERABLE PART NUMBER	TOP-SIDE MARKING
-40°C to 85°C	YFF- WCSP	Tape and reel	TS3A226EYFFR	YP226E

(1) Package drawings, thermal data, and symbolization are available at www.ti.com/packaging.

(2) For the most current package and ordering information, see the Package Option Addendum at the end of this document, or see the TI web site at www.ti.com.



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PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
TS3A226EYFFR	ACTIVE	DSBGA	YFF	9	3000	Green (RoHS & no Sb/Br)	SNAGCU	Level-1-260C-UNLIM	-40 to 85	YP2 26E	Samples

(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.

OBSOLETE: 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.

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TAPE AND REEL INFORMATION



QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
TS3A226EYFFR	DSBGA	YFF	9	3000	180.0	8.4	1.46	1.36	0.7	4.0	8.0	Q1

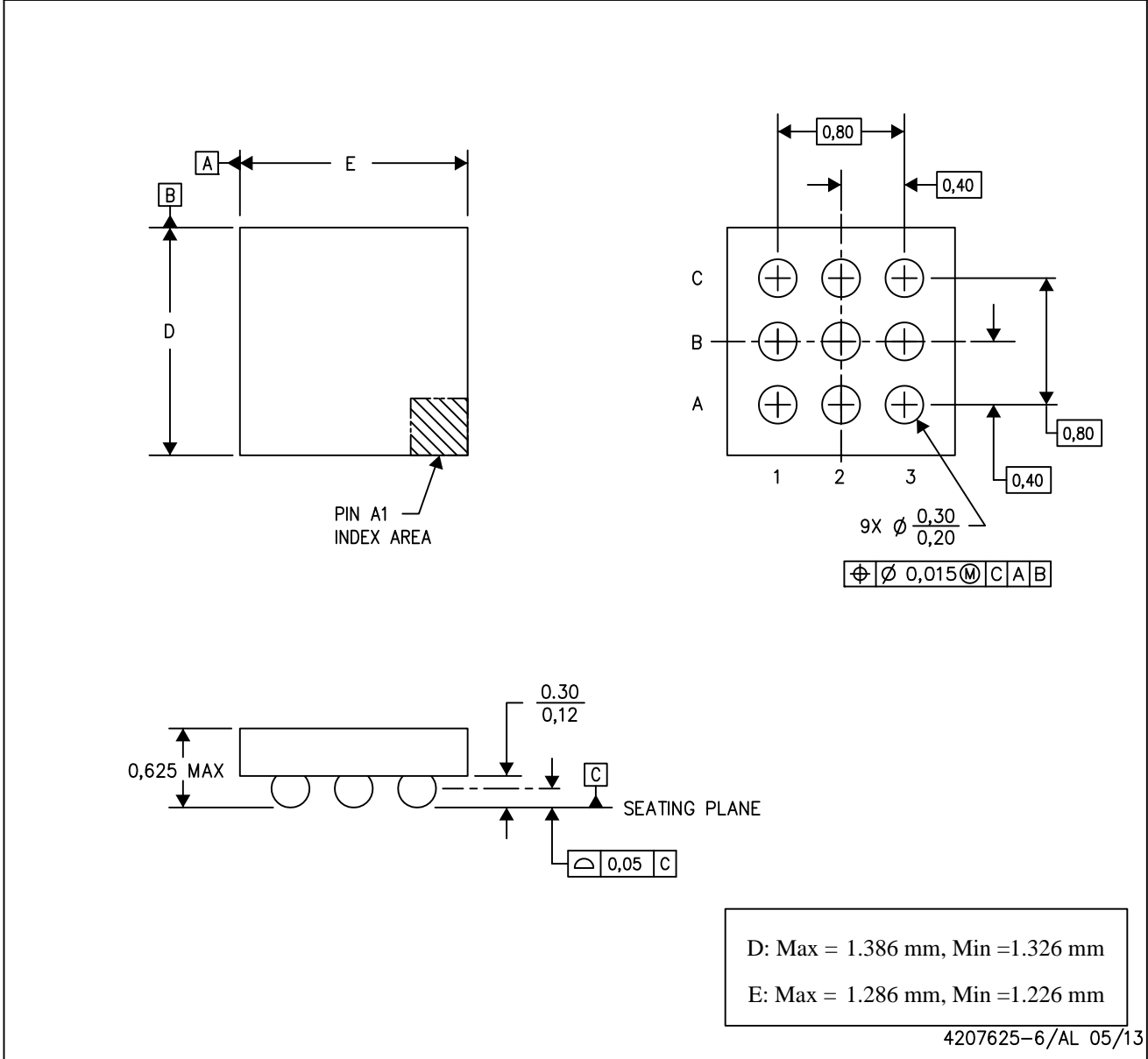
TAPE AND REEL BOX DIMENSIONS


*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
TS3A226EYFFR	DSBGA	YFF	9	3000	210.0	185.0	35.0

YFF (S-XBGA-N9)

DIE-SIZE BALL GRID ARRAY



- 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. NanoFree™ package configuration.

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