

TMUX9832 具有闩锁效应抑制的无高电压偏置、超出电源电压、220V 1:1、32 通道开关

1 特性

- 仅需要 +5V 辅助电源
 - 功耗极低：50kHz 时所有 32CH 开关的功耗为 9.5mW (典型值)
- 宽输入信号范围：
 - 高达 $\pm 110\text{V}$ 、 $220\text{V } V_{PP}$
 - 支持 $\pm 120\text{V}$ 、 $240\text{V } V_{PP}$ 电压过冲
- 低关断电容：10.6pF
- 低导通电阻
- 高达 100MHz 的数据移位时钟频率
- 逻辑电平：1.8V 至 5V
- 集成型 NDIN 可反转输入数据极性
- 快速导通时间：3 μs (最大值)
- 出色的 HD2PC 性能：在 5 MHz 时为 -65dB
- 具有优化引脚排列的小型 BGA 和 QFN 封装选项
- 集成热关断功能，可提高系统可靠性
- 输出端上集成泄漏电阻器
- 器件构造可实现闩锁效应抑制
- 工作温度范围：-40°C 至 125°C

2 应用

- 医疗超声成像
- 超声波智能探头
- 无损检验 (NDT) 金属探伤
- 压电式传感器驱动器
- 超声波流量变送器
- 打印机
- 光学 MEMS 模块

3 说明

TMUX9832 是一款具有闩锁效应抑制的 32 通道低谐波失真、低电阻、低电容、高电压模拟开关集成电路 (IC)。每个器件均具有 32 个独立可选的 1:1 单极单投 (SPST) 开关通道。该器件仅需要 +5V 电源，同时仍能支持 $\pm 110\text{V}$ 模拟信号。TMUX9832 还在漏极 (Dx) 引脚上集成了泄漏电阻器，以对容性负载进行放电，如压电式传感器。TMUX9832 专为医疗超声波成像和其他压电式传感器驱动器应用而设计。

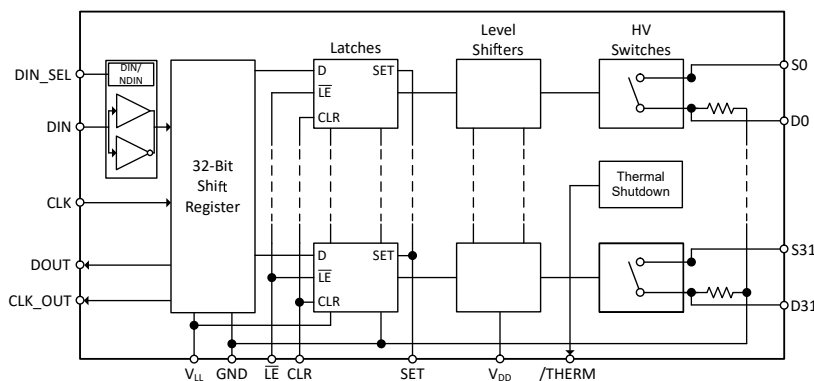
TMUX9832 集成了可级联的 32 位移位寄存器和锁存器，用于控制 32 个开关中的每一个开关。菊花链功能允许控制许多 TMUX9832 器件，而无需为每个器件选择单独的芯片。为了减少信号路径中由潜在时钟馈通导致的噪声，低电平有效锁存使能可以在数据载入移位寄存器时保持高电平。32 位移位寄存器可在 1.8V 至 5V 电源下运行，并支持高达 100MHz 的时钟速度。

封装信息

器件型号	封装 ⁽¹⁾	封装尺寸 ⁽²⁾
TMUX9832	RWF (VQFN)	10mm × 10mm
	ZEH (NFBGA)	7.5 mm × 7.5 mm

(1) 如需了解所有可用封装，请参阅数据表末尾的可订购产品附录。

(2) 封装尺寸 (长 × 宽) 为标称值，并包括引脚 (如适用)。



简化原理图



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4 Revision History

DATE	REVISION	NOTES
June 2023	*	Initial Release

5 Device and Documentation Support

5.1 接收文档更新通知

要接收文档更新通知，请导航至 ti.com 上的器件产品文件夹。点击 [订阅更新](#) 进行注册，即可每周接收产品信息更改摘要。有关更改的详细信息，请查看任何已修订文档中包含的修订历史记录。

5.2 支持资源

TI E2E™ 支持论坛 是工程师的重要参考资料，可直接从专家获得快速、经过验证的解答和设计帮助。搜索现有解答或提出自己的问题可获得所需的快速设计帮助。

链接的内容由各个贡献者“按原样”提供。这些内容并不构成 TI 技术规范，并且不一定反映 TI 的观点；请参阅 TI 的《[使用条款](#)》。

5.3 Trademarks

TI E2E™ is a trademark of Texas Instruments.
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5.4 静电放电警告



静电放电 (ESD) 会损坏这个集成电路。德州仪器 (TI) 建议通过适当的预防措施处理所有集成电路。如果不遵守正确的处理和安装程序，可能会损坏集成电路。

ESD 的损坏小至导致微小的性能降级，大至整个器件故障。精密的集成电路可能更容易受到损坏，这是因为非常细微的参数更改都可能会导致器件与其发布的规格不相符。

5.5 术语表

TI 术语表 本术语表列出并解释了术语、首字母缩略词和定义。

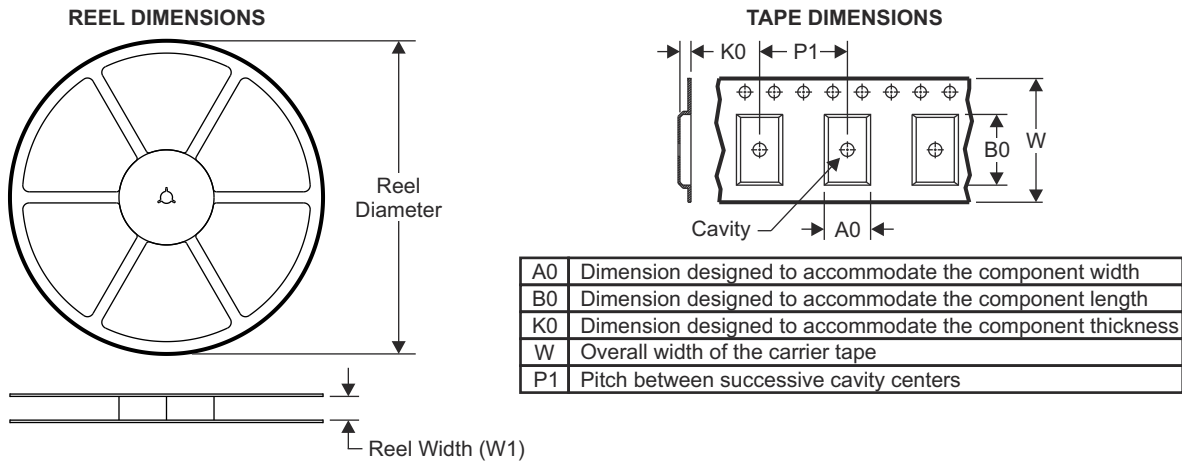
6 Mechanical, Packaging, and Orderable Information

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.

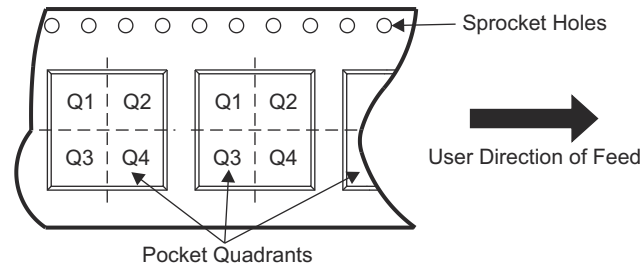
6.1 Mechanical Data

For package drawing information, request access to full data sheet at [myTI account](#).

6.2 Tape and Reel Information



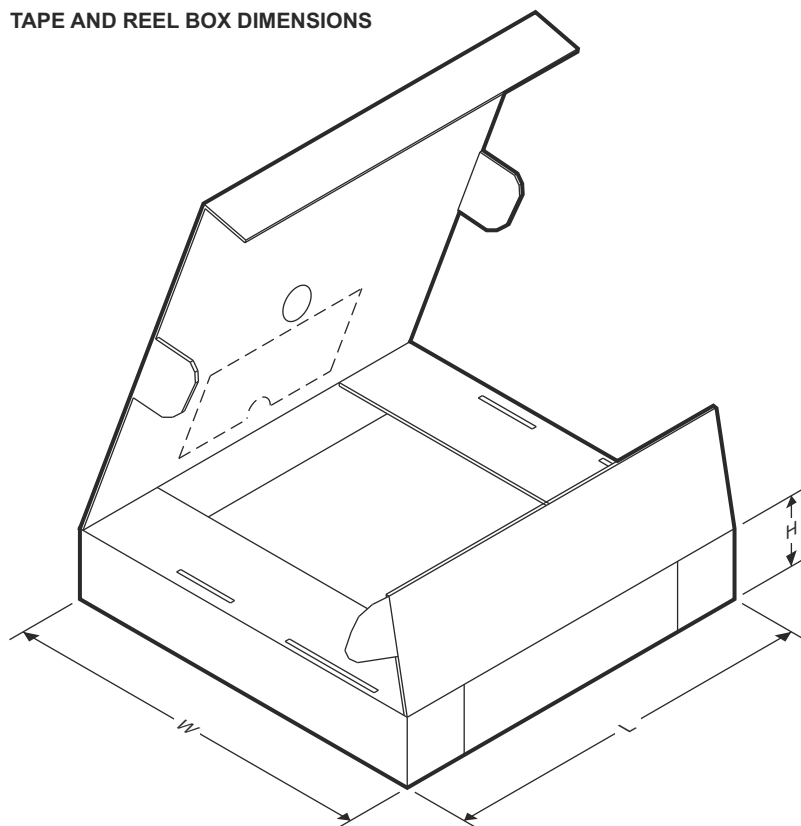
QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



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
TMUX9832ZEHR	NFBGA	ZEH	(1)	2000	330	16.4	7.85	7.85	2.25	12	16	Q3

(1) For pin count information, request access to full data sheet at [myTI account](#)

TAPE AND REEL BOX DIMENSIONS



Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
TMUX9832ZEHR	NFBGA	ZEH	(1)	2000	336.6	336.6	31.8

(1) For pin count information, request access to full data sheet at [myTI account](#)

ADVANCE INFORMATION

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead finish/ Ball material (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
PTMUX9832ZEHR	ACTIVE	NFBGA	ZEH	83	2000	TBD	Call TI	Call TI	-40 to 85		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.

OBSELETE: TI has discontinued the production of the device.

(2) **RoHS:** TI defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, "RoHS" products are suitable for use in specified lead-free processes. TI may reference these types of products as "Pb-Free".

RoHS Exempt: TI defines "RoHS Exempt" to mean products that contain lead but are compliant with EU RoHS pursuant to a specific EU RoHS exemption.

Green: TI defines "Green" to mean the content of Chlorine (Cl) and Bromine (Br) based flame retardants meet JS709B low halogen requirements of <=1000ppm threshold. Antimony trioxide based flame retardants must also meet the <=1000ppm threshold requirement.

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

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