

OHCI-Lynx™ PCI-Based IEEE 1394 Host Controller

FEATURES

- 3.3-V and 5-V PCI bus signaling
- 3.3-V supply (core voltage is internally regulated to 1.8 V)
- Serial bus data rates of 100M bits/s, 200M bits/s, and 400M bits/s
- Physical write posting of up to three outstanding transactions
- Serial ROM interface supports 2-wire devices
- External cycle timer control for customized synchronization
- PCI burst transfers and deep FIFOs to tolerate large host latency
- Two general-purpose I/Os
- Fabricated in advanced low-power CMOS process
- Packaged in 100-terminal LQFP (PZT)
- `PCI_CLKRUN` protocol

DESCRIPTION

The Texas Instruments TSB12LV26 device is a PCI-to-1394 host controller compliant with the *PCI Local Bus Specification*, *PCI Bus Power Management Interface Specification*, IEEE Std 1394-1995, and *1394 Open Host Controller Interface Specification*. The chip provides the IEEE 1394 link function and is compatible with 100M bits/s, 200M bits/s, and 400M bits/s serial bus data rates.

As required by the *1394 Open Host Controller Interface Specification* (OHCI) and IEEE Std 1394a-2000, internal control registers are memory-mapped and nonprefetchable. The PCI configuration header is accessed through configuration cycles specified by PCI and provides plug-and-play (PnP) compatibility. Furthermore, the TSB12LV26 device is compliant with the *PCI Bus Power Management Interface Specification*, per the *PC 99 Design Guide* requirements. TSB12LV26 device supports the D0, D2, and D3 power states.

The TSB12LV26 design provides PCI bus master bursting and is capable of transferring a cacheline of data at 132M bytes/s after connection to the memory controller. Since PCI latency can be large, deep FIFOs are provided to buffer 1394 data.

The TSB12LV26 device provides physical write posting buffers and a highly-tuned physical data path for SBP-2 performance. The TSB12LV26 device also provides multiple isochronous contexts, multiple cacheline burst transfers, advanced internal arbitration, and bus-holding buffers on the PHY/link interface.

An advanced CMOS process achieves low power consumption and allows the TSB12LV26 device to operate at PCI clock rates up to 33 MHz.

NOTE:

This product is for high-volume PC applications only. For a complete datasheet or more information contact support@ti.com.



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

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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
TSB12LV26PZT	ACTIVE	TQFP	PZT	100	90	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-4-260C-72 HR	0 to 70	TSB12LV26 F731652A	Samples
TSB12LV26PZTG4	ACTIVE	TQFP	PZT	100	90	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-4-260C-72 HR	0 to 70	TSB12LV26 F731652A	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.

(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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OTHER QUALIFIED VERSIONS OF TSB12LV26 :

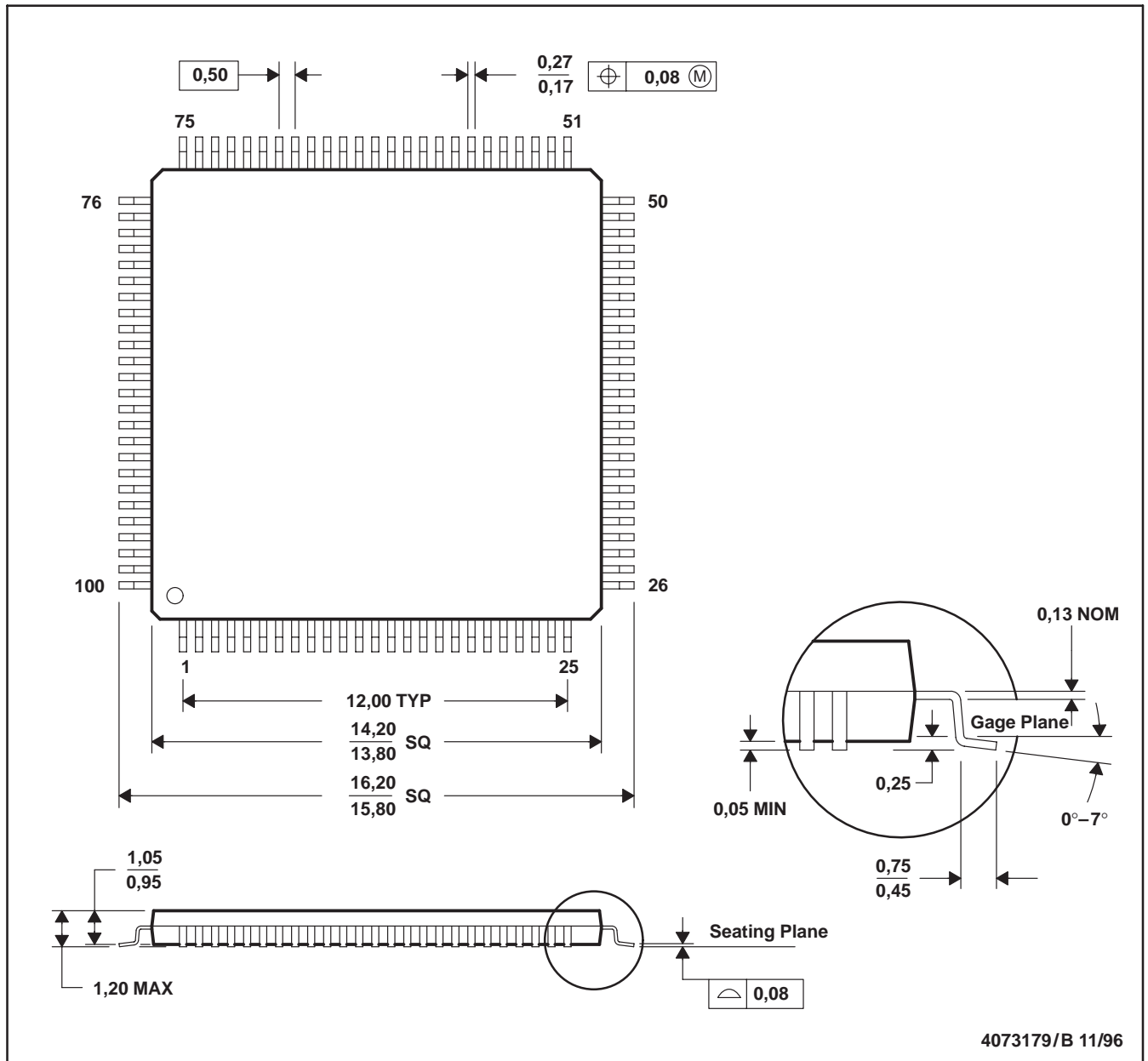
- Enhanced Product: [TSB12LV26-EP](#)

NOTE: Qualified Version Definitions:

- Enhanced Product - Supports Defense, Aerospace and Medical Applications

PZT (S-PQFP-G100)

PLASTIC QUAD FLATPACK



4073179/B 11/96

- NOTES: A. All linear dimensions are in millimeters.
 B. This drawing is subject to change without notice.
 C. Falls within JEDEC MS-026

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