

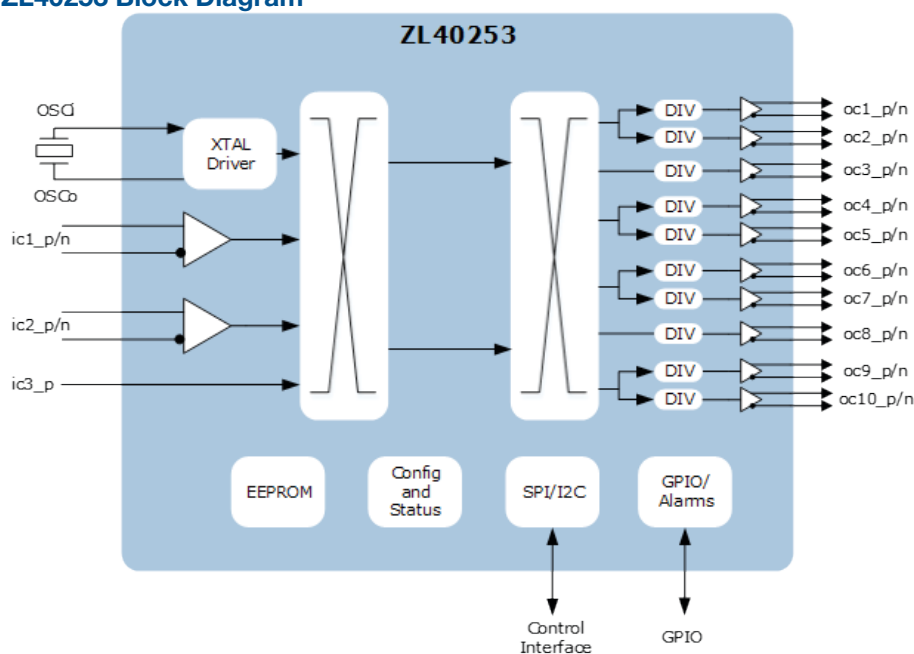
miSmartBuffer™ ZL4025x Family

Differential Output Programmable Fanout Buffers

Microsemi's miSmartBuffer ZL4025x family of devices is differentiated from traditional fanout buffers by compelling features for data center, communications, optical, storage, and networking applications.

The ZL4025x family of devices enable creation of multiple clock signal copies that can be distributed among several loads with minimal additive jitter. The miSmartBuffer ZL4025x devices are synergistic with Microsemi's industry-leading timing portfolio—when combined, they can create a simplified, more reliable, and low-cost complete clock tree that replaces many on-board multipliers, synthesizers, and oscillators.

ZL40253 Block Diagram



Applications

- Clock signal fanout, format conversion, frequency division, and skew adjustment in a wide variety of equipment types, including processors, NPU's, FPGAs, 10G CDRs, high-speed ADCs and DACs, PCIe interface devices, Ethernet switches, and PHYs
- Clock trees for optical, OTN, SONET, SDH, WDM, storage, networking, and broadcast video applications

Availability and Support

Microsemi clock management products are in volume production. To learn more about Microsemi's clock products, visit www.microsemi.com/products/timing-and-synchronization/timing-and-synchronization. Full information, including complete data sheets and design manuals, is available to registered MyMicrosemi customers.

To register for a MyMicrosemi account, visit www.microsemi.com/create-an-account.

Key Features

Ultra-Low Additive Jitter

- Does not deteriorate jitter performance

Four Flexible Input Clocks

- Allows interfacing to a wide variety of devices

Reduces Need for Multiple PLLs

- Each output has an independent divider
- In 2xCMOS mode, P and N pins can be different frequencies (for example, 125 MHz and 25 MHz)

Output Alignment and Skew

- Precise output alignment circuitry controlled by GPIO pin or register bit with per-output skew adjustment
- Per-output enable/disable and glitchless start/stop (stop high or low)
- Easily interface with no need for level shifters, with each output configurable as LVDS, LVPECL, HCSL, 2xCMOS, or HSTL

Six Flexible Power Supply Banks

- Outputs are grouped into six power supply banks
- Each bank can be supplied by 1.5 V–3.3 V for CMOS outputs
- Each bank can be 2.5 V or 3.3 V for differential outputs

Factory-Preprogrammed Devices

- miClockDesigner's™ web tool creates devices to power-up with preset clocks while reducing time-to-market, simplifying inventory, and reducing BOM costs

Key Benefits

Reduces BOM Cost and Board Space

- Can create a complete clock tree replacing multiple devices when combined with Microsemi's industry-leading miClockSynth™ devices

Increases Design Efficiency

- Highly configurable outputs and multiple pin compatible variants
- Up to eight custom configurations per device or part number selectable with external hardware pins

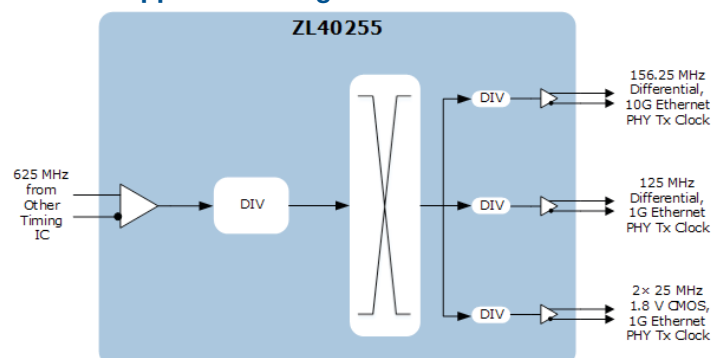
miSmartBuffer™ ZL4025x Family

Differential Output Programmable Fanout Buffers

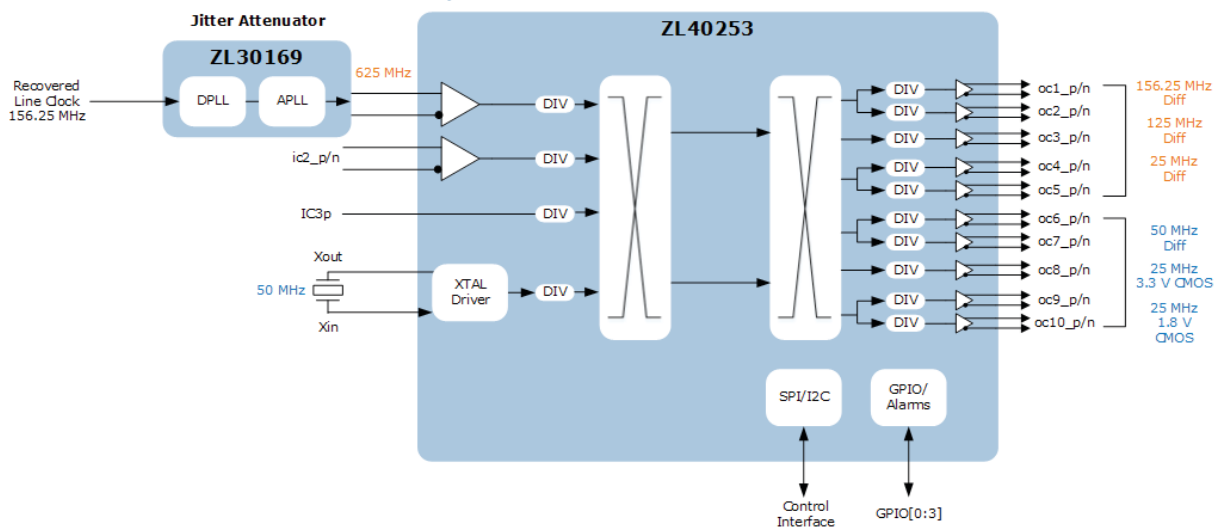
With integrated output dividers, the miSmartBuffer ZL4025x family of devices can generate multiple clock frequencies while the outputs can be configured to generate native signal types, such as LVDS, LVPECL, HCSSL, HSTL, and CMOS, allowing the devices to easily interface to other components on the board with no need for level shifters or termination components. The outputs, grouped into six output supply voltage banks, eliminate the need for multiple regulators and simplify the design.

The miSmartBuffer ZL4025x family of devices features an intuitive graphical user interface (GUI) and the ability to create factory pre-programmed devices with ease using Microsemi's web tool, miClockDesigner. These preprogrammed devices, which have pin-selectable configurations and per-output control, ensure clock availability and proper system bring-up for all applications.

Ethernet Application Diagram



Ethernet Line Card Application Diagram



Selector Guide

Product Number	EEPROM	Outputs	Package
ZL40250	External	6/12	8 mm × 8 mm QFN
ZL40251	Internal	6/12	8 mm × 8 mm QFN
ZL40252	External	10/20	8 mm × 8 mm QFN
ZL40253	Internal	10/20	8 mm × 8 mm QFN
ZL40255	Internal	3/6	5 mm × 5 mm QFN



Microsemi Corporate Headquarters
 One Enterprise, Aliso Viejo, CA 92656 USA
 Within the USA: +1 (800) 713-4113
 Outside the USA: +1 (949) 380-6100
 Fax: +1 (949) 215-4996
 Email: sales.support@microsemi.com
 www.microsemi.com

Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for aerospace & defense, communications, data center and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs and ASICs; power management products; timing and synchronization devices and precise time solutions, setting the world's standard for time; voice processing devices; RF solutions; discrete components; enterprise storage and communication solutions, security technologies and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; as well as custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, California and has approximately 4,800 employees globally. Learn more at www.microsemi.com.

Microsemi makes no warranty, representation, or guarantee regarding the information contained herein or the suitability of its products and services for any particular purpose, nor does Microsemi assume any liability whatsoever arising out of the application or use of any product or circuit. The products sold hereunder and any other products sold by Microsemi have been subject to limited testing and should not be used in conjunction with mission-critical equipment or applications. Any performance specifications are believed to be reliable but are not verified, and Buyer must conduct and complete all performance and other testing of the products, alone and together with, or installed in, any end-products. Buyer shall not rely on any data and performance specifications or parameters provided by Microsemi. It is the Buyer's responsibility to independently determine suitability of any products and to test and verify the same. The information provided by Microsemi hereunder is provided "as is, where is" and with all faults, and the entire risk associated with such information is entirely with the Buyer. Microsemi does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other IP rights, whether with regard to such information itself or anything described by such information. Information provided in this document is proprietary to Microsemi, and Microsemi reserves the right to make any changes to the information in this document or to any products and services at any time without notice.