

Description

M88TBZS2308A^{1,2,3,4} is a type of high-performance clock fanout buffer operating at up to 3.1GHz with 8 outputs. The buffer is designed for low-jitter, high-frequency clock/data distribution and level translation.

The buffer supports clock input selection from either two differential clock pairs or one crystal input, distributing the selected clock to two output banks, each with 4 differential outputs, along with a dedicated LVCMOS output. Both differential output banks can be configured as LVPECL, LVDS, LP-HCSL, or disabled.

Operating with a 1.8V-3.3V core supply and three independent 1.8V-3.3V output supplies, the clock buffer supports flexible logic-pin control for input reference clock selection, output type and impedance selection, and output enable/disable.

The buffer can be paired with Montage Technology's M88TG010xx clock generator to deliver a robust clock tree solution. With broad input and output frequency ranges, optimized power management, and reduced propagation delay, the buffer operates across a wide temperature range, making it an ideal choice for demanding applications.

Features

- 3 input reference clocks:
 - Two differential clock pairs up to 3.1GHz, accepting single-ended clock source up to 350MHz
 - One crystal input, accepting 8MHz to 50MHz crystal or single-ended clock source
- 8 output clocks:
 - Two power banks with 4 differential outputs each, supporting LVPECL, LVDS and LP-HCSL
 - One independent LVCMOS output clock

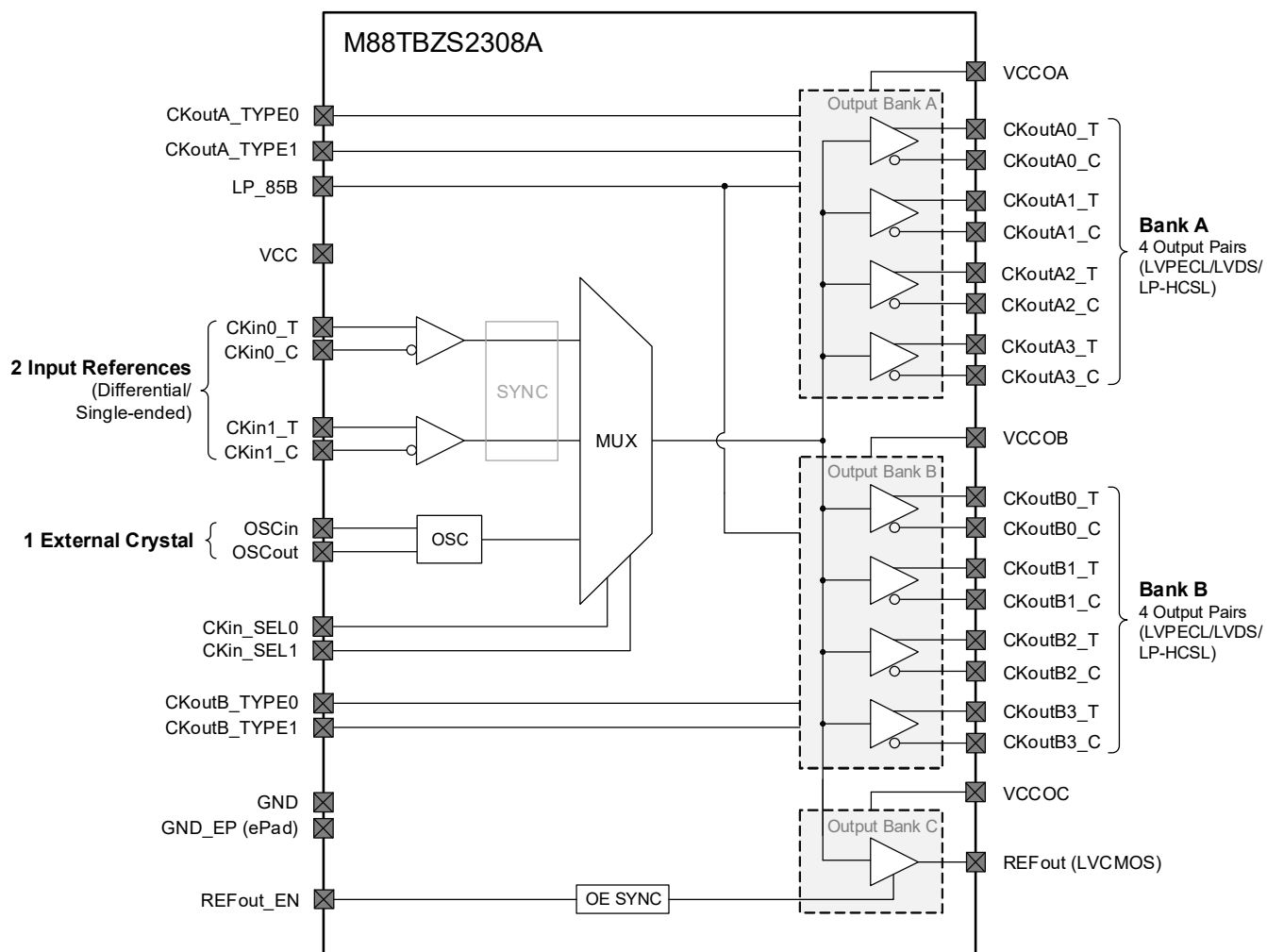
1. Z: Supports 85Ω or 100Ω impedance selection via pin.
2. S: Supports glitch-free switchover.
3. A: Supports LVPECL, LVDS, and LP-HCSL differential clock outputs.
4. Unless otherwise stated, the terms "clock buffer" and "buffer" refer to M88TBZS2308A.

- Frequency range:
 - LVCMOS: DC to 350MHz
 - LVDS: DC to 3.1GHz
 - LVPECL: DC to 3.1GHz
 - LP-HCSL: DC to 1GHz
- Additive jitter:
 - 34 fs RMS (12kHz to 20MHz) typical @ LP-HCSL 156.25MHz
 - 10 fs RMS typical @ PCIe[®] Gen 5 jitter (CC)
- Excellent PSRR:
 - LVDS: -74dBc @ 156.25MHz
 - LVPECL: -67dBc @ 156.25MHz
 - LP-HCSL: -76dBc @ 156.25MHz
- Ultra-low latency and skew
- Glitch-free switchover
- Three independently configurable 1.8V-3.3V power supplies for:
 - Core
 - Differential outputs
 - Single-ended outputs
- Pin-based control for flexible input reference clock selection, output type and impedance selection, and output enable/disable
- Working temperature: -40°C to +85°C
- Package: 40-pin WQFN

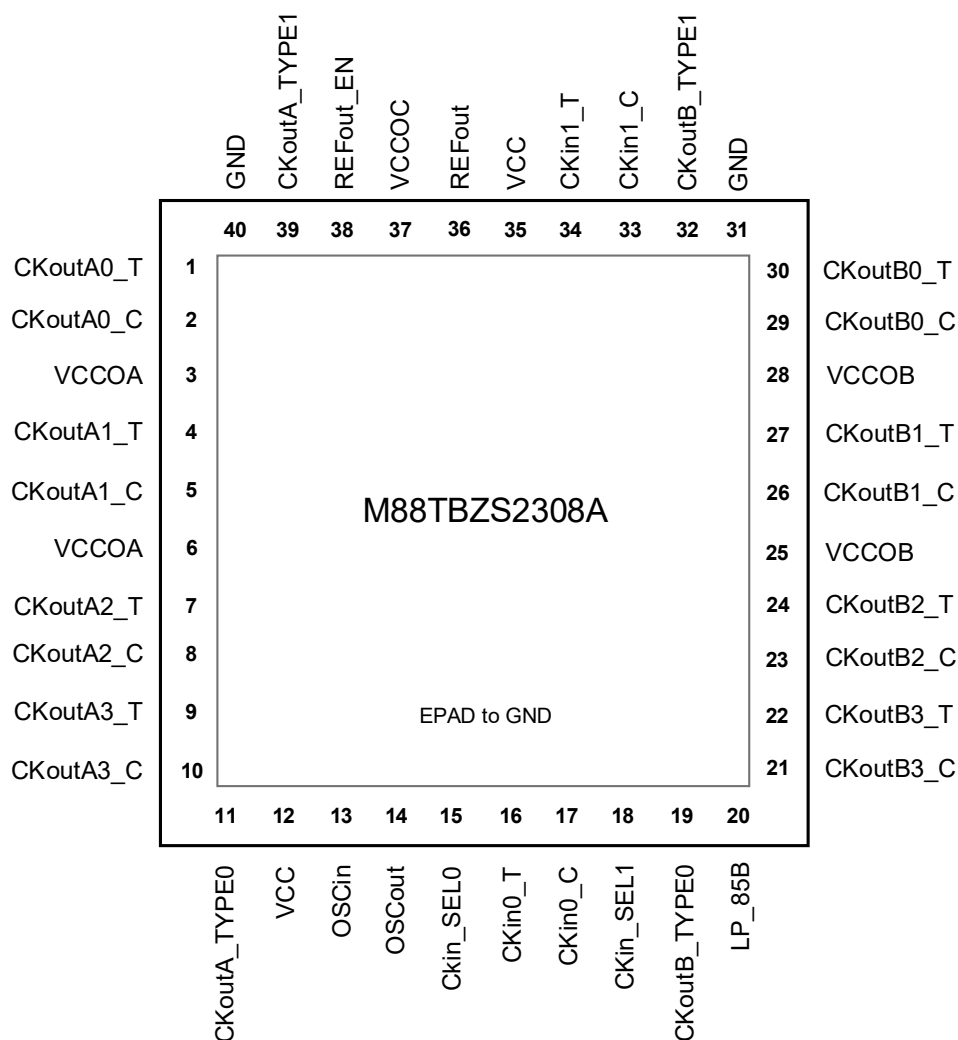
Applications

- Clock distribution and level translation for ADCs, DACs, SATA/SAS, SONET/SDH, multi-gigabit Ethernet, and Fibre Channel line cards
- Servers, storage systems, switches, routers, and display panels
- PCIe Gen 1 to Gen 6 and NVLink
- Reference clock distribution for BBU and RRU applications

Functional Block Diagram



Pin Assignment (40-pin WQFN, 6.0mm x 6.0mm x 0.75mm)



Ordering Information

Part Number	Package	Operating Temperature
M88TBZS2308A	40-pin WQFN, 6.0mm x 6.0mm x 0.75mm	-40°C to +85°C