

# VSC8173

**VITESSE**

## 9.9-10.7Gb/s 16:1 Multiplexer with Clock Generator

**FEATURES:**

- ▶ Fully Compliant with OIF 99.102
- ▶ SONET/SDH Jitter Compliant
- ▶ 622MHz Data Clock Input Modes
- ▶ Superior Data Output Eyes
- ▶ Low Power 1.7W (Typ)
- ▶ +3.3V Single Supply
- ▶ Continuous Tuning Operation from 9.953 to 10.709Gb/s Rates
- ▶ 155-168/622-670 MHz Reference Clock Input
- ▶ Reliable 90-Ball BGA Package
- ▶ Up to 85°C Case Temperature

**APPLICATIONS:**

- ▶ SONET/SDH Networking
- ▶ Transponder Modules
- ▶ DWDM Systems
- ▶ G.975/709 Forward Error Correction (FEC)
- ▶ Gigabit Ethernet
- ▶ Telecommunications Transmission Systems
- ▶ Test Equipment

**BENEFITS:**

- ▶ Provides Lowest Power Solution in its Performance Class
- ▶ Integrated PLL Based Clock Generator
- ▶ Meets SONET/SDH Jitter Generation Requirements
- ▶ OIF 99.102 Compliant LVDS Interface
- ▶ Thermal Expansion of TBGA Package is Matched to the PC Board for High Reliability
- ▶ Input FIFO to Simplify Parallel Interface Timing
- ▶ Loss-of-Lock and Internal Temperature Sensing to Assist in Monitoring Device Operation
- ▶ Data Polarity Invert and Bit Order Swap for Ease of Layout

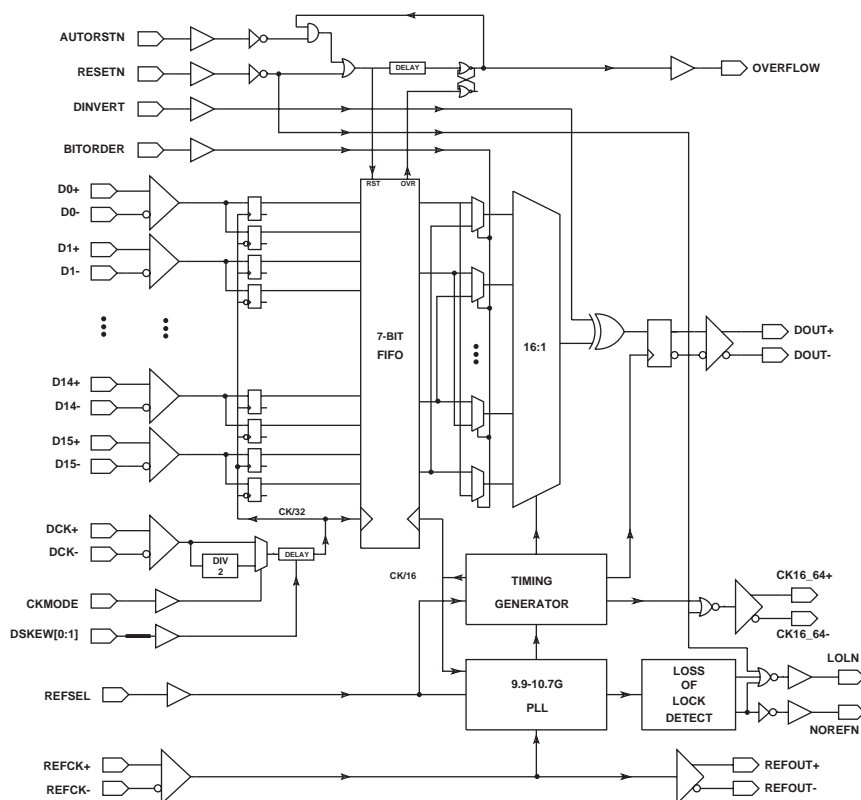
## 9.9-10.7Gb/s 16:1 Multiplexer with Clock Generator

### GENERAL DESCRIPTION:



The VSC8173 consists of a 16:1 multiplexer and a clock generator for use in SONET STS-192/SDH STM-64 systems. The 16:1 multiplexer accepts 16 parallel LVDS inputs at a data rate of 622.08Mb/s to 669.31Mb/s. This parallel data stream is then serialized into a 9.953Gb/s to 10.709Gb/s output. 622MHz data clock input mode is supported. The clock generator creates the 9.953GHz to 10.709GHz clock signal used to re-time the transmitted serialized data. The clock generator requires a 155 to 168MHz or 622 to 670MHz LVPECL reference clock input. To ease timing constraints on the parallel interface, a 16-bit wide FIFO is included. A divided-by-16 or divide-by-64 LVDS clock output is available for use as a clock input to the parallel data source. Additional features include Bit Order Swap and Data Polarity Invert. To assist in monitoring device operation a Loss-of-Lock alarm and internal temperature sensing are provided. The device is packaged in a modified 90-Ball Grid Array (BGA).

### VSC8173 BLOCK DIAGRAM:



### SPECIFICATIONS:

- ▶ 9.953 to 10.709Gb/s Continuous Operation
- ▶ Data Output Voltage Swing: 600 mV (Min)
- ▶ Data Output Rise/Fall: 25ps (Typ)
- ▶ 10ps Wideband Jitter (Max)
- ▶ Supply Voltage: 3.3V (Typ)
- ▶ Total Power Dissipation: 1.7W (Typ)
- ▶ Operating Temperature Range: 0°C to +85°C (case)
- ▶ 15x15mm Low Profile 90 Ball TBGA (Taped BGA) Package

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For more information on Vitesse Products visit the Vitesse web site at [www.vitesse.com](http://www.vitesse.com) or contact Vitesse Sales at (800) VITESSE or [sales@vitesse.com](mailto:sales@vitesse.com)

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