11.5-12.5Gb/s 1:16 Demultiplexer with Clock Recovery

# VSC8184 *Product Brief*

Physical Layer Products

Features:

- Continuous 11.5 to 12.5Gb/s Lock-Range
- Low Power 1.6W (Typ)
- +3.3V Single Supply
- Single-End and Differential Data Input
- 50 mV Input Sensitivity (Min)
- Slicing Threshold Voltage Offset Control
- LVDS Outputs
- 180-195 or 719-781 MHz Reference Clock
- Reliable 90-Ball BGA Package
- Up to 90°C Case Temperature
- On Chip Termination for all LVDS Inputs

Specifications:

- 11.5 to 12.5 Gb/s Continuous Lock-Range Operation
- 50 mV Input Sensitivity
- Supply Voltage: 3.3V (Typ)
- Total Power Dissipation: 1.6W (Typ)
- 15x15mm Low Profile 90 Ball TBGA (Taped BGA) Package
- Operating Temperature Range: 0°C to +90°C (case)
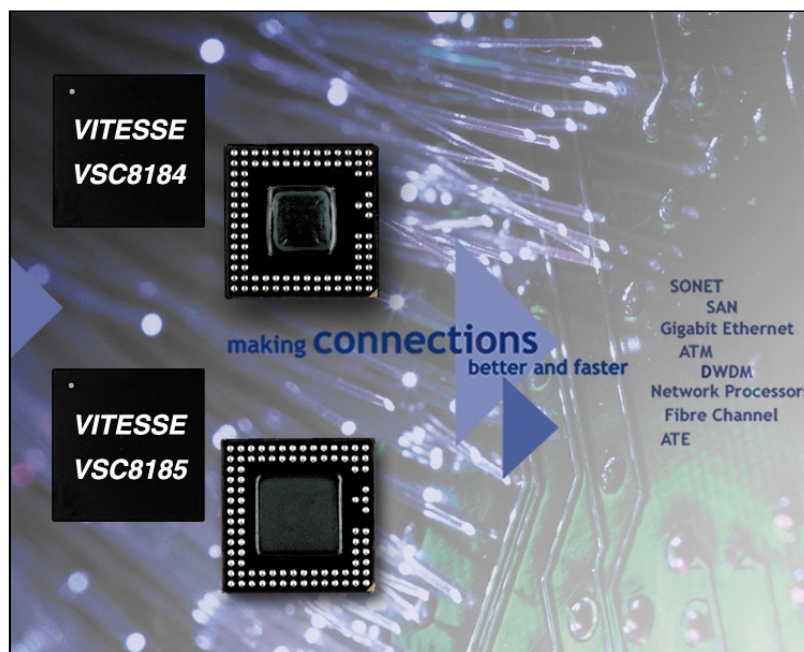
General Description

The VCS8184 combines a clock recovery unit and data retiming with a 1:16 Demultiplexer on a single chip to directly generate 16-bit wide data from an incoming 11.5Gb/s to 12.5Gb/s data stream, for use in SONET STS-192/SDH STM-64 systems. An on-chip Phase Locked Loop (PLL) with Voltage Controlled Oscillator (VCO) generates a 11.5GHz to 12.5GHz clock, which remains phase locked to the incoming data. The incoming data is retimed and Demultiplexer into 16 parallel outputs. It features a highly flexible reference clock input scheme. The user can select between 180-195MHz or 719-781MHz PECL reference clock inputs. The input serial data sampling point voltage threshold can be adjusted. Additional features include a parity bit (PARITY±) that is clocked out with the 16 parallel data, Bit Order Swap (BITORDER) and Data Polarity Invert (DINVERT). To assist in monitoring device operation a Loss-of-Lock (LOLN) alarm and no reference clock (NOREFN) alarm are provided. The device is packaged in a modified 90-ball, Ball Grid Array (BGA).

VITESSE SEMICONDUCTOR CORPORATION

Physical Layer Products

Benefits:

- Provides High-speed Integrated Clock and Data Recovery from 11.5 to 12.5Gb/s

- Provides Lowest Power Solution in its Performance Class

- Pin-compatible Path to 9.9-10.7Gb/s Product (VSC8174)

- Thermal Expansion of TBGA Package is Matched to the PC Board for High Reliability

- Data Polarity Invert and Bit Order Swap for Ease of Layout

- Loss-of-Lock and No Reference Clock to Assist in Monitoring Device Operation

- Parity Bit Calculation

- Integrated Clock and Data Recovery

Applications:

- Advanced Forward Error Correction (FEC)

- Return-to-Zero Transmission Applications

- Re-Timing Laser Drivers

- Ultra-Long Haul Systems

- SONET/SDH Networking

- DWDM Systems

- Telecommunications Transmission Systems

- Test Equipment

VSC8184 Block Diagram

SEMICONDUCTOR CORPORATION

www.vitesse.com

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