

VSC7984

VITESSE

11.3 Gb/s Electroabsorption Modulator Driver



FEATURES:

- ▶ Single +5V or -5.2V Supply
- ▶ Selectable Data Retiming
- ▶ Output Enable
- ▶ AC-Coupled Inputs
- ▶ Internally-Stabilized Modulation and Bias Outputs
- ▶ Excellent Output Return Loss
- ▶ 300mV Differential Data Input Sensitivity
- ▶ Programmable Output Data Eye Crossing Point
- ▶ 2.5V On-chip Voltage Reference
- ▶ Available in Bare Dice, 32-pin 5mm x 5mm QFN, or 32-pin Metal-glass QFP

APPLICATIONS:

- ▶ 10G Transmit Optical Sub-Assemblies
 - 9.983 Gb/s SONET OC-192/SDH STM-64
 - 10.3 Gb/s Ethernet
 - 10.5 Gb/s Fibre Channel
 - 10.7 Gb/s OTN G.709/G.975
 - 12.5 Gb/s SONET with FEC Optical
 - DWDM SONET/SDH
- ▶ Transponders
 - XENPAK, X2, XPAK modules
 - 300pin MSA modules
- XFP modules

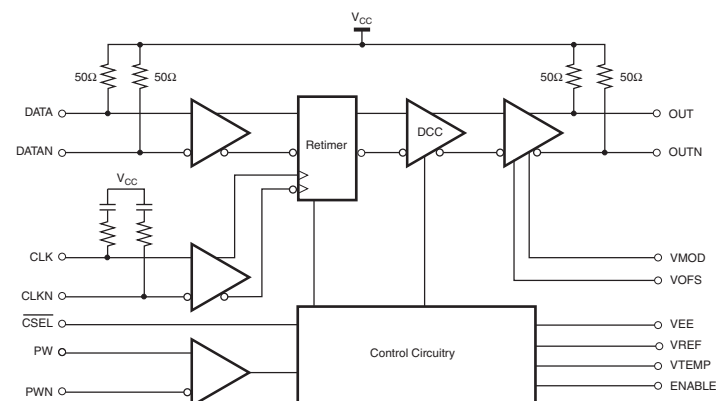
BENEFITS:

- ▶ Unique architecture provides excellent output impedance, further reducing output jitter.
- ▶ Extended case temperature range (-10°C to 95°C) providing more thermal margin for system design.
- ▶ Guaranteed operation at worst-case duty cycle (85% crossing point), improving yield by enabling the use of a wider range of modulators.
- ▶ Internal operational amplifiers reduce off-chip circuit complexity and component count.
- ▶ Output enable for both eye safety and low power in sleep modes required by new module MSAs.

SPECIFICATIONS:

- ▶ VSC7984
 - Supply Voltage: +5V or -5.2V
 - Supply Current: 290mA
 - Input Sensitivity: 300mV to 1V Single Ended or Differential
 - Data Rate: 11.3 Gb/s
 - Clock Rate: 11.3 GHz
 - Output Offset Adjust: 0 to 1.5V
 - Output Modulation Voltage: 1.4 to 2.8V
 - Output Rise Fall Time: 25 ps
 - Data Eye Crossing Point Adjustment: 25% to 85%
 - Operating Temperature from -10°C to 95°C
 - Package:
 - VSC7984-W: Dice
 - VSC7984YF: 24-pin 4mm x 4mm QFN

BLOCK DIAGRAM:



11.3 Gb/s Electroabsorption Modulator Driver

GENERAL DESCRIPTION:

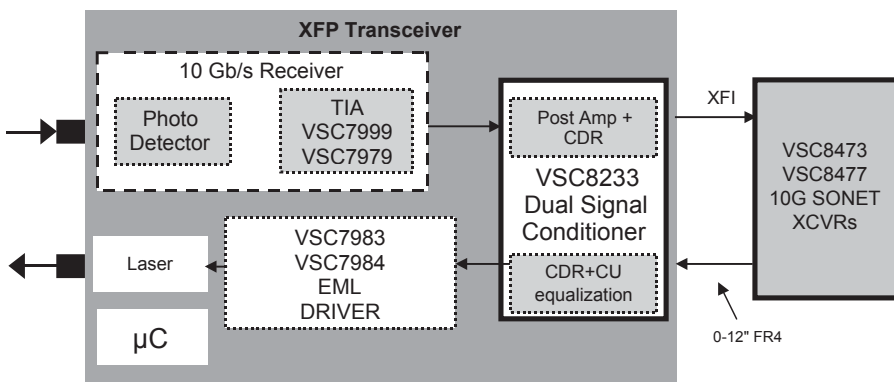
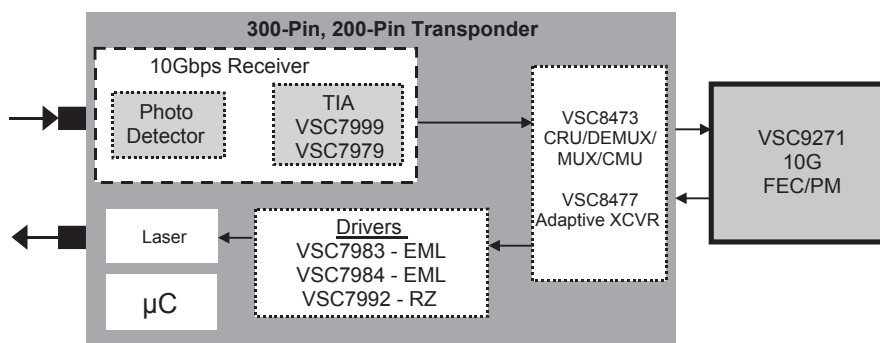


The VSC7984 is a 11.3Gb/s clocked

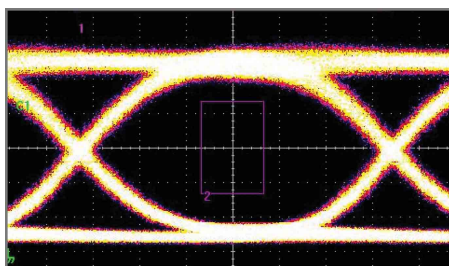
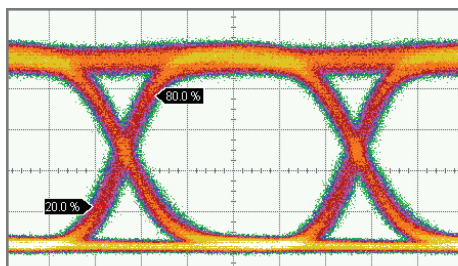
modulator driver for SONET/SDH and 10GbE applications. The device provides selectable data retiming to improve jitter performance and controls for output bias voltage, modulation voltage, and duty cycle. Internal operational amplifiers and on-chip voltage

reference preclude the need for additional off-chip circuitry to stabilize modulation and offset voltages. A temperature monitor output indicates temperature to simplify testing and to verify the device is not operated beyond its recommended maximum temperature. The VSC7984 is available in a 4mm x 4mm 24-lead plastic package, or in die form.

APPLICATION DIAGRAMS:



OPTICAL EYE DIAGRAMS:



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