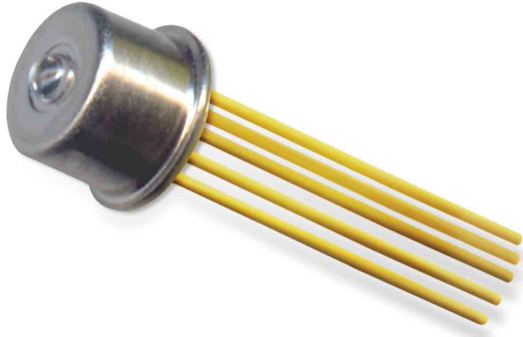


# 1 to 4 Gbps TIAs

VITESSE

## 1 to 4 Gbps Transimpedance Amplifiers with Photocurrent Monitor



### PRODUCT FAMILY:

- ▶ VSC7773 ▶ VSC7970
- ▶ VSC7971 ▶ VSC7972
- ▶ VSC7973

### APPLICATIONS:

- ▶ Gigabit Ethernet Transceivers
- ▶ Fibre Channel Transceivers (1x, 2x and 4x)
- ▶ SONET/SDH Transceivers
- ▶ SONET/SDH Transponders
- ▶ 4.25 Gbps Receiver Optical Sub-Assemblies

### FEATURES:

- ▶ Single +3.3 V Supply
- ▶ 5 kΩ Differential Transimpedance
- ▶ Low Power Consumption for SFP/SFF Applications
- ▶ Differential Outputs with Linear Current Monitor
- ▶ Available as Bare Dice or in a 4-pin or 5-pin TO-46 Package

### BENEFITS:

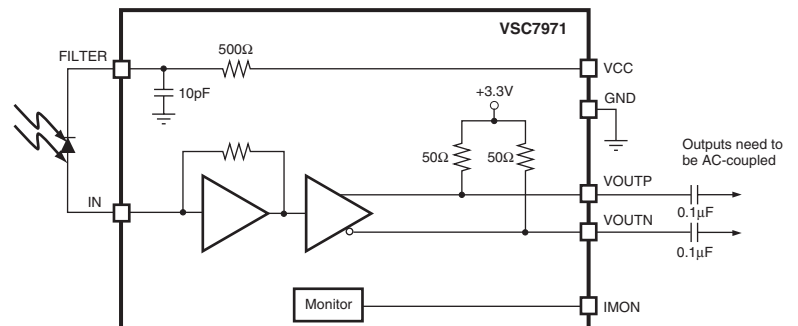
- ▶ Source Terminated Differential Outputs With Linear Photocurrent Monitor Offers Diagnostic Capabilities Without Sacrificing High Signal Integrity
- ▶ On-chip Filter Provides Positive Bias to the Photodetector, Eliminating the Need for External Components, Saving Space and Cost
- ▶ Available in a TO-46 Package, Eliminating Time and Costs Associated With the Design, Assembly and Test of the Receiver

### SPECIFICATIONS:

- ▶ Input Noise: 550 nA (rms)
- ▶ Supply Current: 25 mA
- ▶ Sensitivity : -23 dBm (long wave) -21.5 dBm (short wave)
- ▶ Max Input Current: 2.2 mA Peak to Peak Current
- ▶ Power Dissipation: 82.5 mW
- ▶ Supply Voltage: 3.3 V
- ▶ Operating Temperature from -40°C to 85°C

- VSC7773: TO-46 (with 850nm PIN detector)
- VSC7970: Dice or TO-46 (with 1310nm/1550nm PIN detector)
- VSC7971: Dice or TO-46 (with 1310nm/1550nm PIN detector)
- VSC7972: Dice or TO-46 (with 850nm pin detector)
- VSC7973: Dice or TO-46 (with 850nm pin detector)

### BLOCK DIAGRAM (Die):



# 1 to 4 Gbps TIAs

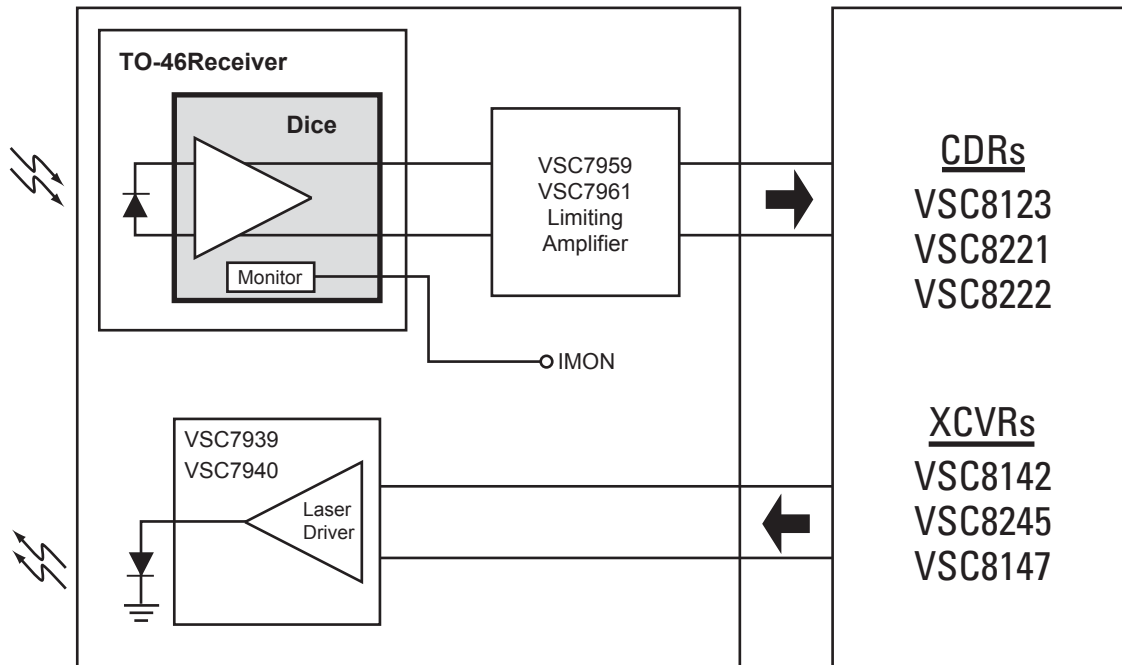
## 1 to 4 Gbps Transimpedance Amplifiers with Photocurrent Monitor

### GENERAL DESCRIPTION:



The VSC7773, VSC7970, VSC7971, VSC7972, and VSC7973 are high performance Transimpedance Amplifiers (TIA) for Ethernet, Fibre Channel and SONET applications. The VSC7773 support rates from 1 Gbps to 4.25 Gbps. The other parts support rates up to 2.5 Gbps. They feature 5 k $\Omega$  differential transimpedance and 1.8 GHz bandwidth with source-terminated differential outputs. All five parts have a linear current monitor, adding diagnostic capabilities, and simplifying optical alignment during the manufacturing process. A space saving filter connection is provide for positive bias to the photodetector through an on-chip 500 $\Omega$  resistor to VCC, allowing for easy assembly on a TO-46 header.

### APPLICATION DIAGRAM:



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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