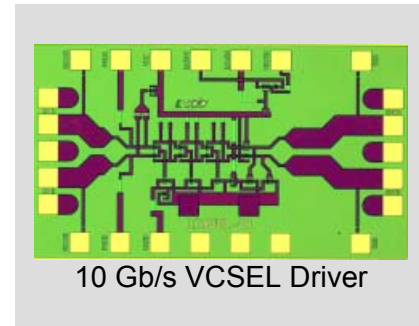


FEATURES

- Selectable Bias Current up to 20mA
- Selectable Modulation Current up to 12mA
- Low Power Consumption: 150mW
- Wide dynamic input range
- Pulse Width / Duty Cycle Control
- Differential Inputs and Outputs
- Bias Current Monitor
- Small Size: 1.5 mm X 0.9 mm



APPLICATIONS

- VSR
- 10 G Ethernet
- Fiber Channel Optical Links

PRODUCT DESCRIPTION

OEpic's DV1001-A is an InGaP-HBT VCSEL driver (Vertical Cavity Surface Emitting Laser) designed for high-speed fiber optic communications. The DV1001-A operates on a single power supply of +3.3 Volts and dissipates 150mW. The product is available in bare die and QFN package.

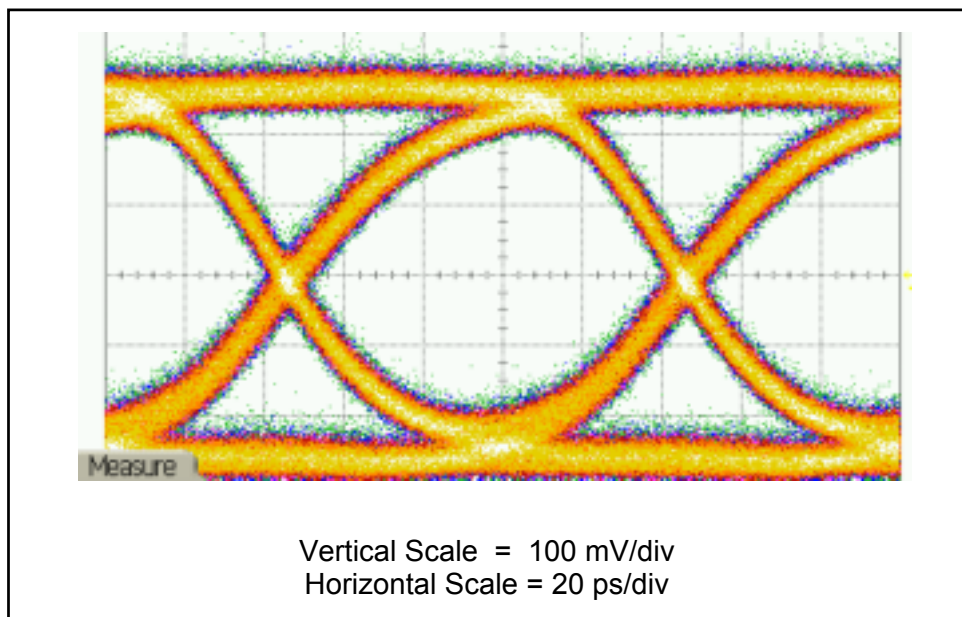
OEpic's DV1001-A is part of our standard OptoElectronic Integrated Circuit (OEIC) chipset. Custom products can also be developed. OEpic Inc. (pronounced "epic") designs and manufactures high speed OEICs, and specializes in integrating optical components with microwave electronics. OEpic provides a complete solution from design, material growth, wafer fabrication and test, to volume production of 10 Gb/s and 40 Gb/s OEIC products.

ELECTRICAL SPECIFICATIONS (Temperature = 25°C)

Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	V_{cc}		+3.3		V
Supply Current	I_c		45		mA
Input Voltage Swing (Differential)		400		1400	mV
Input Impedance	Z_{in}		50		Ω
Laser Modulation Current (50 Ω load)	I_m	0		12	mA
Laser Bias Current	I_L	0		20	mA
Input Return Loss	S_{11}		-10		dB
Rise Time ¹	t_r		30		ps
Fall Time ₁	t_f		30		ps

(1) measured using 10GHz square wave

Eye Diagram, 10 Gb/s VCSEL Driver



Mechanical Specifications

Length	1500 ± 15 µm
Width	900 ± 15 µm
Thickness	100 ± 15 µm

Absolute Maximum Ratings

Supply Voltage	8V
Junction Temperature	175°C
Mounting Temperature	320°C
Input power	20dBm

Please Note: Exceeding any one of these parameters can cause permanent damage to the device.

Die Attach and Bonding Procedures

Die Attach: Eutectic die attach is recommended. For eutectic die attach: Preform AuSn (80% Au, 20%Sn), Stage Temp. 290°C 1 minute or less.

Wire Bonding: Wire Size 0.7 to 1 mil in diameter (Pre-stressed). Thermocompression bonding is preferred over thermosonic bonding. For thermocompression bonding: Stage Temp. 250°C; Bond tip Temp. 150°C, Bond tip Pressure 18 to 10 gms depending on the size of the wire.

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