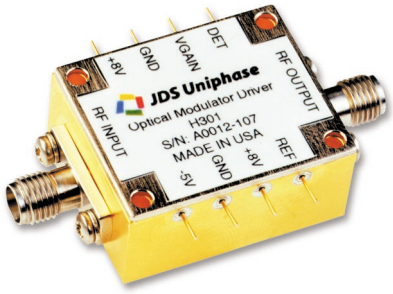
JDS Uniphase

Product Bulletin



10 Gb/s Optical Modulator Driver

H301 Series

The H301 optical modulator driver provides a high-quality, single-ended voltage to drive an external laser modulator. Typical applications include driving EML, EAM, and Mach-Zehnder style modulators. It amplifies 2.488 to 12.2 Gb/s data input signals to >7.0 V_{p-p} drive levels. The flat gain and flat group delay response yield a high-quality, low-jitter electrical drive signal. The driver meets applicable SONET and SDH standards for OC-192 10 Gb/s optical transmitters and includes reference and detector outputs to enable external temperature-compensated control of output drive levels. The module has field replaceable input and output K-connectors for the input/output drive signals and an eight-pin connector for the detector, reference, and power interfaces.

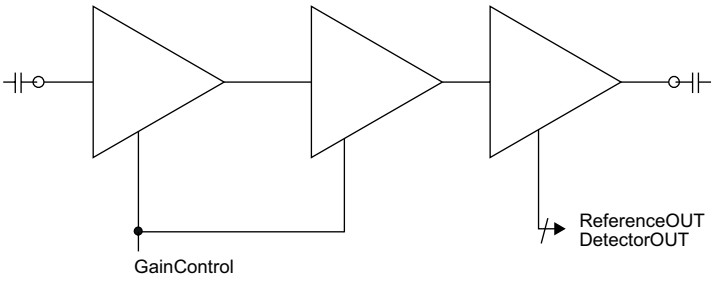
Key Features

- Low power, 4.9 W
- Low jitter
- Data rates from 2.488 to 12.2 Gb/s

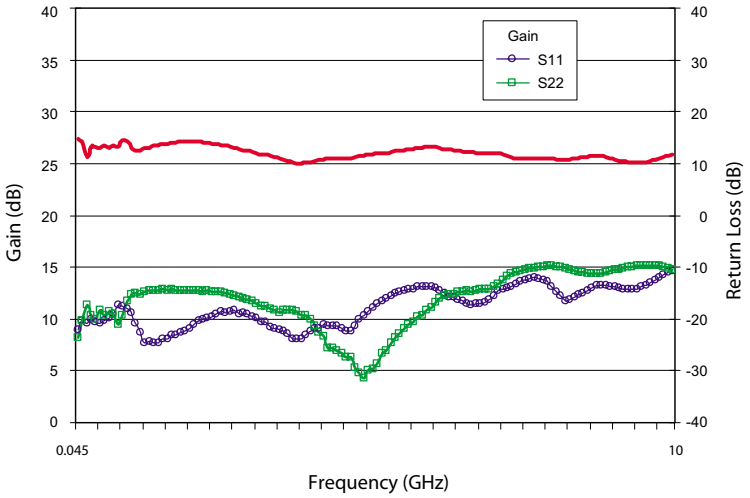
Applications

- SONET/SDH equipment
- SR, IR, LR optical transmitters

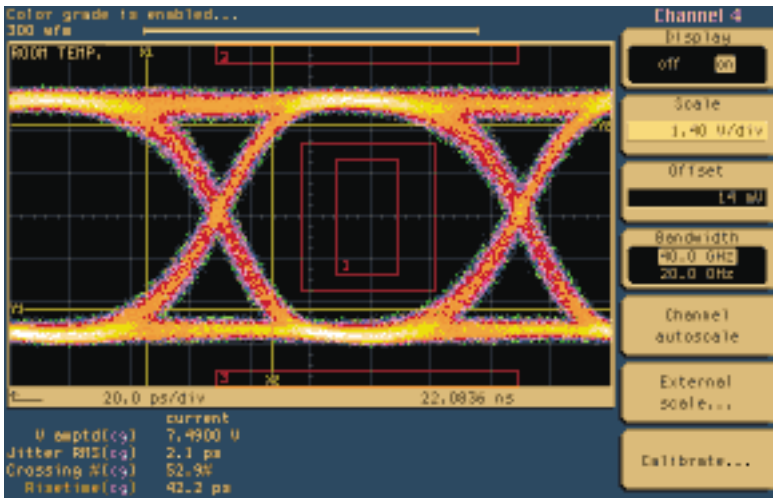
Block Diagram



Gain and Return Loss vs. Frequency



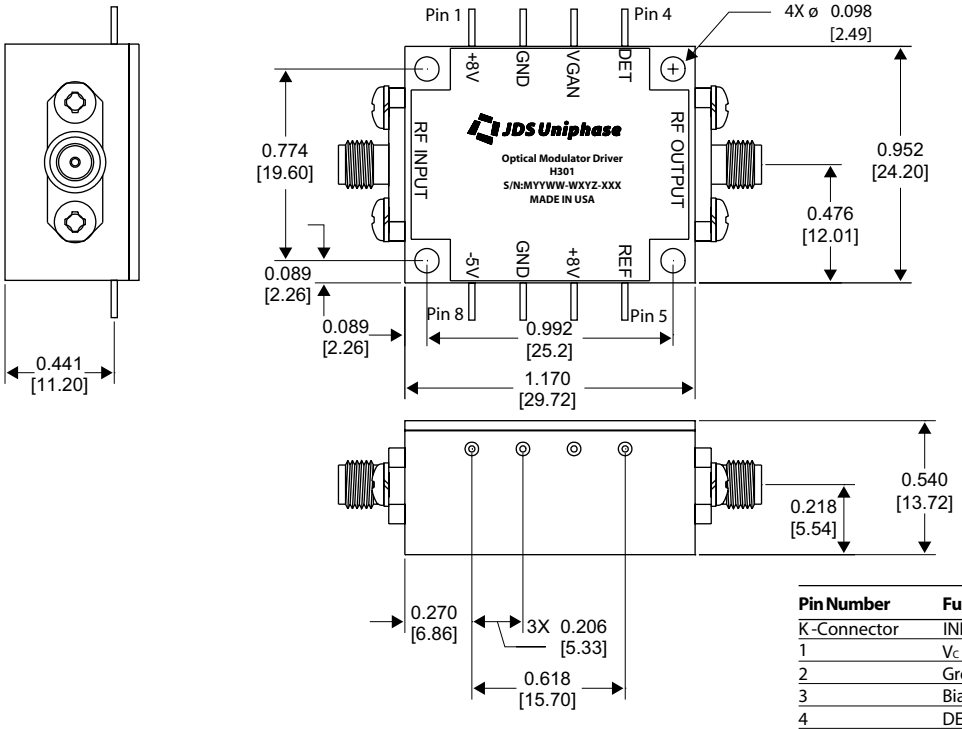
Eye Diagram



Specifications

Parameter		
Data rate		2.488 to 12.2 Gb/s
Frequency response		75 KHz to 10 GHz
Output amplitude (>7 V)	Typical	7.0 V_{p-p}
	Maximum	7.5 V_{p-p}
P_{1dB} output	Typical	>22 dBm
	Maximum	23 dBm
P_{sat} output	Typical	>24 dBm
Gain		14 to 26 dB, variable
Gain ripple		±1.5 dB
Gain control range (-10 to 0 V DC using external 510 W resistor)	Typical	12 dB
	Minimum	10 dB
Group delay (2 to 10 GHz)	Typical	±25 ps
Noise figure		11 dB
Input, output impedance		50 Ω
Input range		500 mV to 1.5 V
Input VSWR		
75 to 200 KHz	Typical	1.9
	Maximum	2.25:1
200 KHz to -10 GHz	Typical	1.6:1
	Maximum	2.25:1
Output VSWR	Typical	2.0:1
	Maximum	3.0:1
Isolated run of ones or zeros		100 bits
Pulse response	Typical	Overshoot/undershoot 10%, drop 10%, rise time 40 ps
Operating temperature		0 to 70 °C
Storage temperature		-40 to 100 °C
Operating humidity, non-condensing	Maximum	85%
Storage humidity, non-condensing	Maximum	97%
Altitude		0 to 3,048 m (0 to 10,000 ft)
Soldering process temperature (30 seconds)	Maximum	215 °C
Process temperature (24 hours)	Maximum	150 °C
Dimensions (W x H x D)		1.2 x 0.5 x 1.0 in
Power requirements		
8.0 V DC minimum	Typical	600 mA
-5.0 V DC minimum	Typical	22 mA
Total power dissipation	Minimum	4.9 W
Input/output		2.9 mm (field replacement “K”)
Power detector/reference/ground		8-pin package

Package Dimensions (in inches [mm])



Pin Number	Function
K-Connector	INPUT (AC coupled)
1	V_C (8 V)
2	Ground
3	Bias (V_{Gain})
4	DET (V_{Det})
K-Connector	OUTPUT (AC coupled)
5	REF
6	V_C (8 V)
7	Ground
8	V_{EE} (-5.0 V DC)
	Case is grounded internally

Ordering Information

For more information on this or other products and their availability, please contact your local JDS Uniphase account manager or JDS Uniphase directly at 800-871-8537 in North America and 1-800-8735-5378 worldwide or via e-mail at jdsu.sales@jdsu.com.

Sample: H301-1110

H301- ☐ ☐ **10**

Code	Connector
1	Female in, Female out
2	Female in, Male out
3	Male in, Male out
4	Male in, Female out

Code	Driver Option
1	Standard
2	Optimized for JDS Uniphase modulator
3	AM modulation input pin

JDS Uniphase

North America toll-free: 800-871-8537
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www.jdsu.com

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