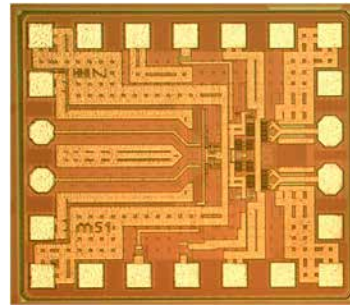


32 GBd OPTICAL MODULATOR DRIVER

AT A GLANCE

- 32 GBd differential driver for telecom and datacom application



Features

- Differential input and differential output
- Back-terminated outputs
- 3.0 V_{pp} differential output at 2 x 25 Ω loads
- Low EVM and BER in electro-optical measurement
- Adjustable output swing

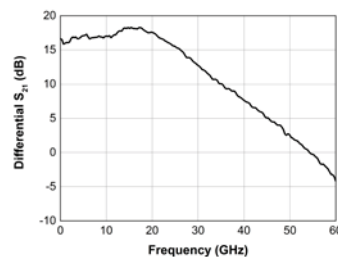
Applications

- Mach-Zehnder modulator driver
- Broadband signal amplification

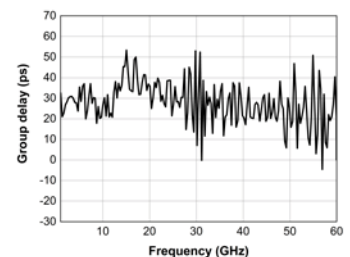
Specifications

Parameter	Min	Typ	Max	Unit	Conditions
Bandwidth		28		GHz	$P_{in,diff} = -1$ dBm
Power	370	660		mW	without coil.with coil: 310(min), 510(typ) mW
Data Rate			32	GBd	
Rise/ fall time		12.5		ps	20%-80%
Group Delay Distortion*			± 8	ps	
Jitter (p-p)		4.6		ps	
Differential Input Signal		700		mVpp	AC-coupled
Differential Output Signal	1.7	3		Vpp	2 x 25 Ω load
P_{1dB}		13.4		dBm	output-referred, $Z_{load,diff} = 50\Omega$
CMRR*	18.6			dB	up to 20 GHz
Chip Dimension		1030(H) x900(V)		μ m	dicing distance excluded
Operation Temperature		40		$^{\circ}$ C	

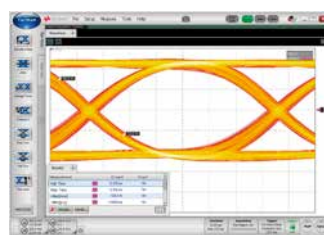
* denotes that measurements were carried out at room temperature condition, 23 $^{\circ}$ C. Unless noted, measurement temperature was 40 $^{\circ}$ C



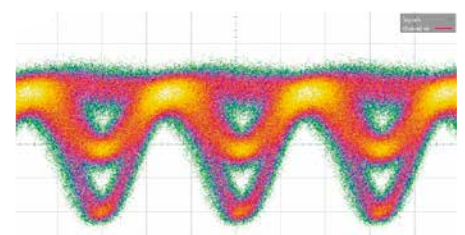
Differential S_{21} measurement result ($P_{in,diff} = -1$ dBm, $T_{mp} = 23^{\circ}$ C, $Z_{in,diff} = 100\Omega$, $Z_{Load,diff} = 50\Omega$)



Group delay distortion measurement (23 $^{\circ}$ C)



Electrical eye at 28 Gb/s



32 GBd QPSK electro-optical eye of IQ MZ-modulator (EVM: 5.7 % RMS)

The Fraunhofer HHI

The Fraunhofer Heinrich Hertz Institute conducts research in the areas of video compression and processing, 3D systems, wireless communication as well as photonic components and networks.

Contact

Dr. Jung Han Choi
 Photonic Components
 Fraunhofer Heinrich Hertz Institute
 Einsteinufer 37 | 10587 Berlin | Germany
 Phone +49 30 31002-471
 jung-han.choi@hhi.fraunhofer.de