ULTRA LOW-POWER 32 GBd 2-bit DAC FOR MACH-ZEHNDER MODULATOR

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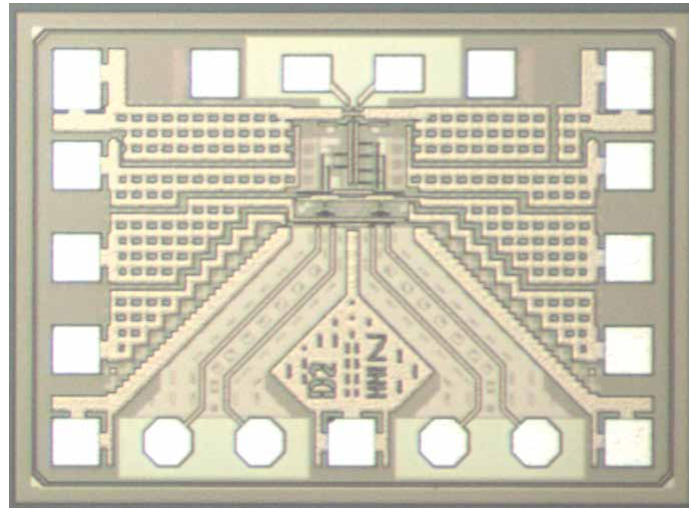
AT A GLANCE

32 GBd 2-bit DAC for
Mach-Zehnder Modulator

Features

- Differential inputs and differential ouput

- Ultra-Low Power, 145 mW

- Eye-level control in PAM-4

- 1.7 V_{pp}, differential output with 2 x 25 Ω loads

- Supports NRZ, PAM-4 output signals

Applications

- Telecom and Datacom

- Broadband signal amplification

- PAM-4 / NRZ driver for Mach-Zehnder modulator

Ultra low-power 2-bit DAC

Ultra low-power SiGe 2-bit DAC generates either NRZ or PAM-4 electrical signal to driver InP Mach-Zehnder modulator. The output stage is designed to include 2 x 25 Ω for the impdance matching with the modulator. 2-bit DAC with 2 x 50 Ω output impedance is also available as laboratory sample upon request.

Specifications

| Parameter	Min	Typ	Max	Unit	Conditions
Bandwidth		145		mW	
Data Rate			32	GBd	
Differential Input Signal		500		mV$_{pp}$	AC-coupled, differential
Differential Output Signal		1700		mV$_{pp}$	2 x 2,5 Ω load, differential
Power Supply		2,2		V	Supply at 25 Ω: 2,0 V
Operation Temperature		40		℃	
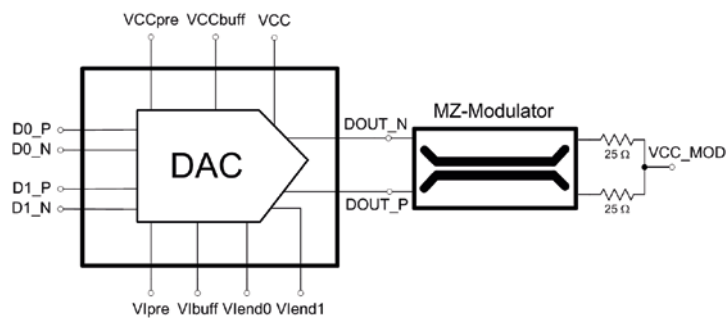
Electrical DAC configuration with Mach-Zehnder Modulator

Electrical 28 GBd Eye with eye-level control
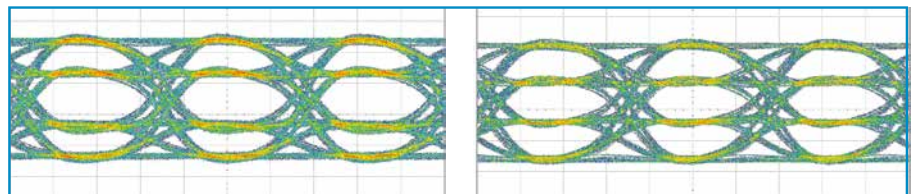
Electro-Optical 28 GBd Eye   Electro-Optical 32 GBd Eye
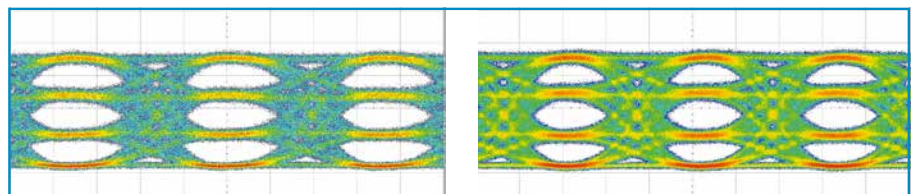
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