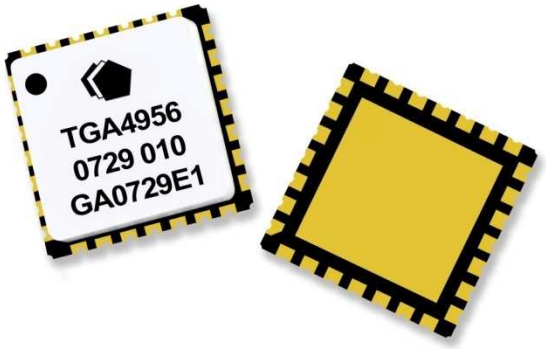
TGA4956-SM

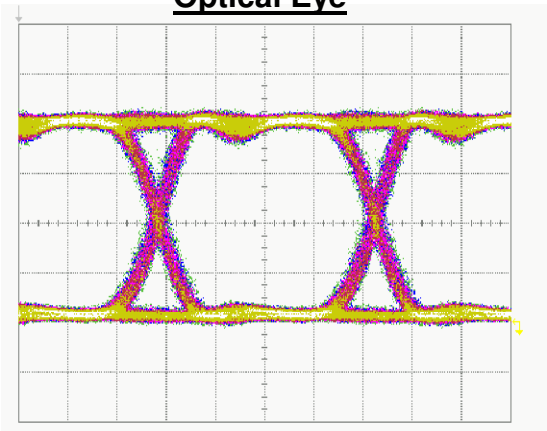
3 V – 7 V Optical Modulator Driver



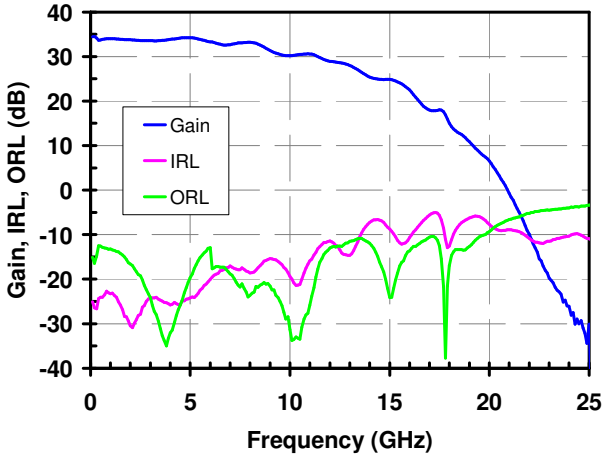
Measured Performance

Bias conditions: Vd = 3.3 V, Id = 120 mA

Optical Eye



11.32 Gbps, PRBS 231 -1, Vin = 1Vpp, Vout = 3.0 Vpp, Rise / Fall time = 22.2 / 23.1 ps, Additive RMS Jitter = 1.9 ps, Extinction Ratio = 13.7 dB



Key Features

- 9.9 - 12.5 Gb/s Data Rates
- Additive RMS Jitter < 1.5 psec
- High Gain > 32 dB
- Adjustable Output Amplitude 3 Vpp – 7 Vpp
- Low Power Dissipation, <0.42 W
- Rise/Fall Times <25 psec
- Integrated High Frequency Bias-Tee
- 3.3 V, 120 mA Bias (3 Vpp output)
- 5 V, 200 mA Bias (6 Vpp output)
- Package Size: 8 x 8 x 2.1 mm

Primary Applications

- 10 Gb/s Optical Market
- MZ & Low Vπ Modulator Driver

Product Description

The TriQuint TGA4956-SM is a MZ and low voltage modulator driver amplifier designed to operate at frequencies that target the 10 Gb/s optical market using an economical 8x8 mm surface mount package.

The TGA4956-SM consists of two high performance wideband amplifiers combined with off chip circuitry assembled in a surface mount package. A single TGA4956-SM placed between the MUX and Optical Modulator provides OEMs with a low-cost, surface mount modulator driver solution.

The TGA4956-SM provides Metro and Long Haul designers with scalable power dissipation for varying output drive requirements (< 0.42 W at Vo = 3 Vpp, <1 W at Vo = 6 Vpp).

ROHS compliant, Moisture Sensitivity Level 1.

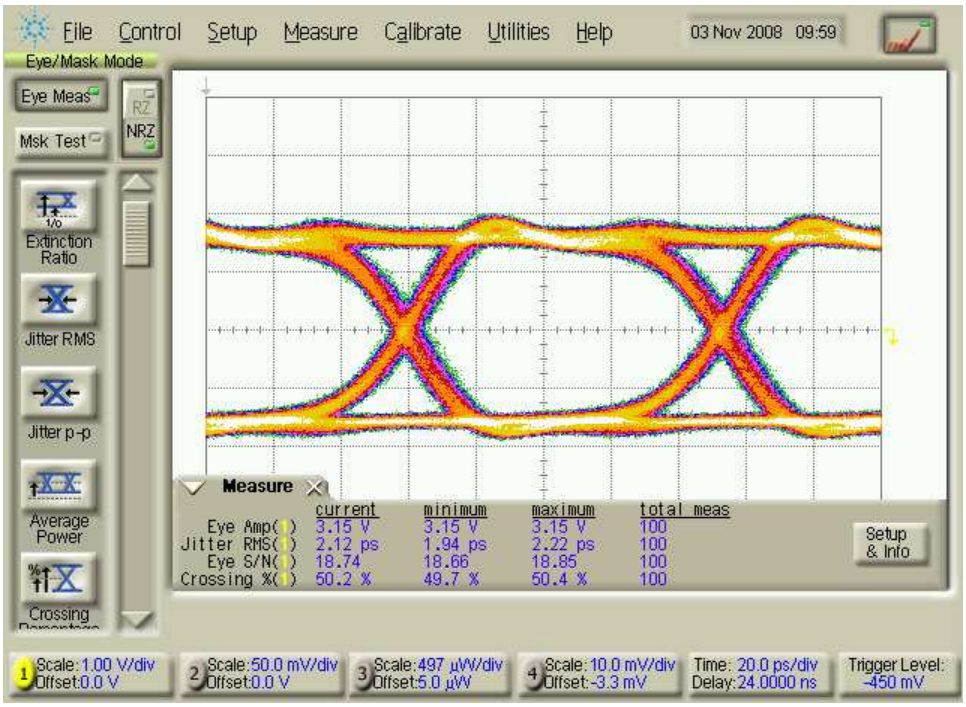
Evaluation boards available upon request.

Datasheet subject to change without notice.

TriQuint Semiconductor: www. triquint.com (972)994-8465 Fax (972)994-8504 Info-sales@tqs.com

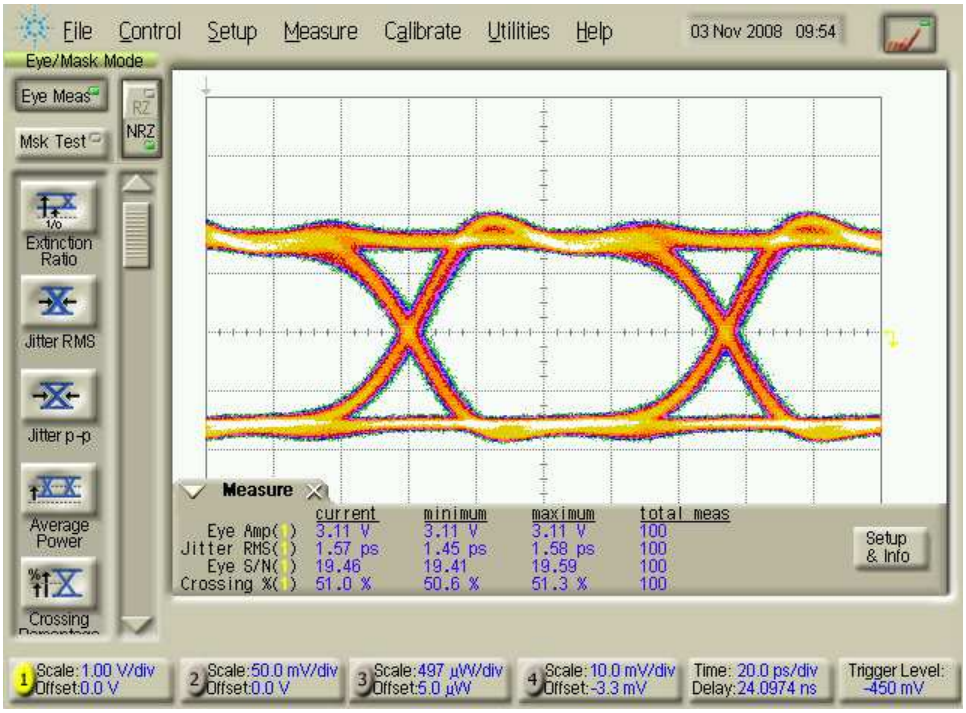
Measured Data: Vd = 3.3 V, Vin = 0.2 Vpp, Vout = 3.1 Vpp, 10.7 Gb/s

RMS Source Jitter = 1.44 ps



Vd = 3.3 V, Vin = 0.5 Vpp, Vout = 3.1 Vpp, 10.7 Gb/s

RMS Source Jitter = 1.2 ps



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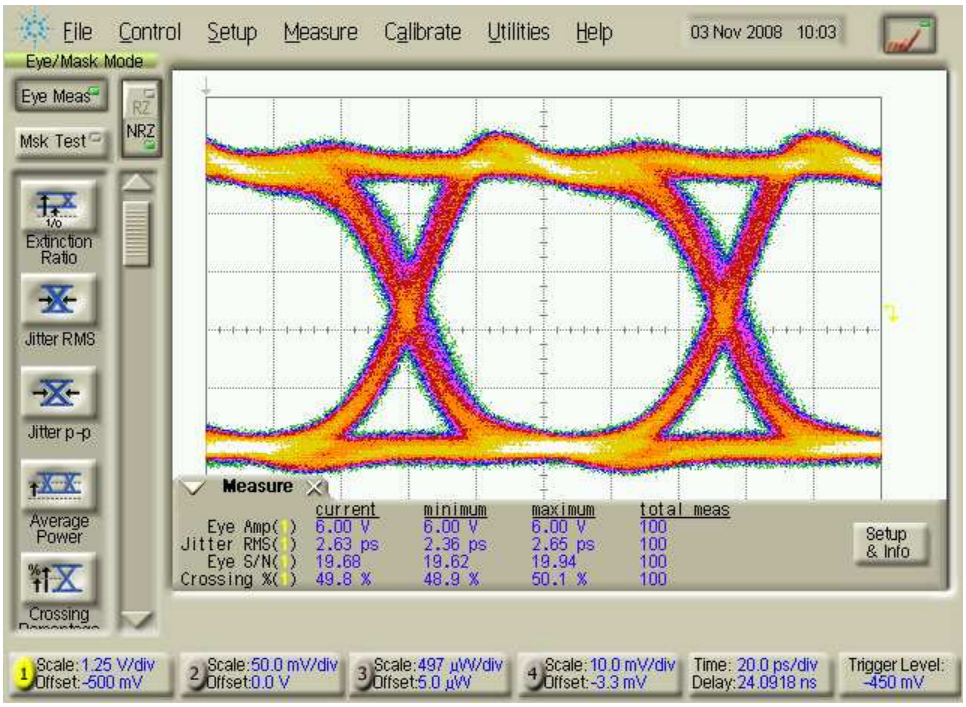
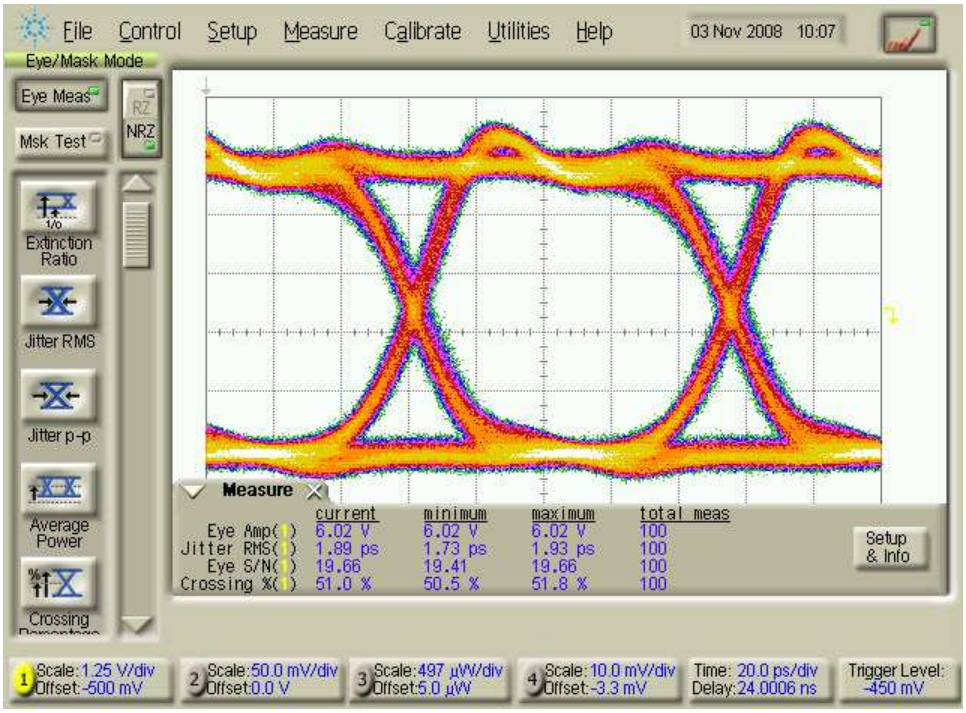
Measured Data: Vd = 5 V, Vin = 0.2 Vpp, Vout = 6 Vpp, 10.7 Gb/s

RMS Source Jitter = 1.44 ps

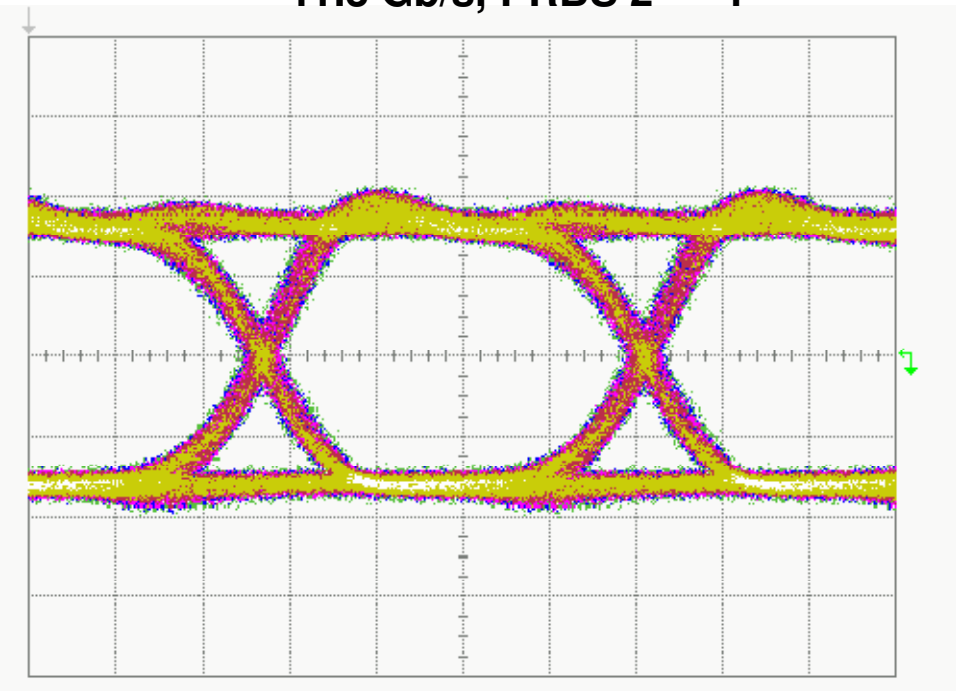


Vd = 5 V, Vin = 0.5 Vpp, Vout = 6 Vpp, 10.7 Gb/s

RMS Source Jitter = 1.2 ps

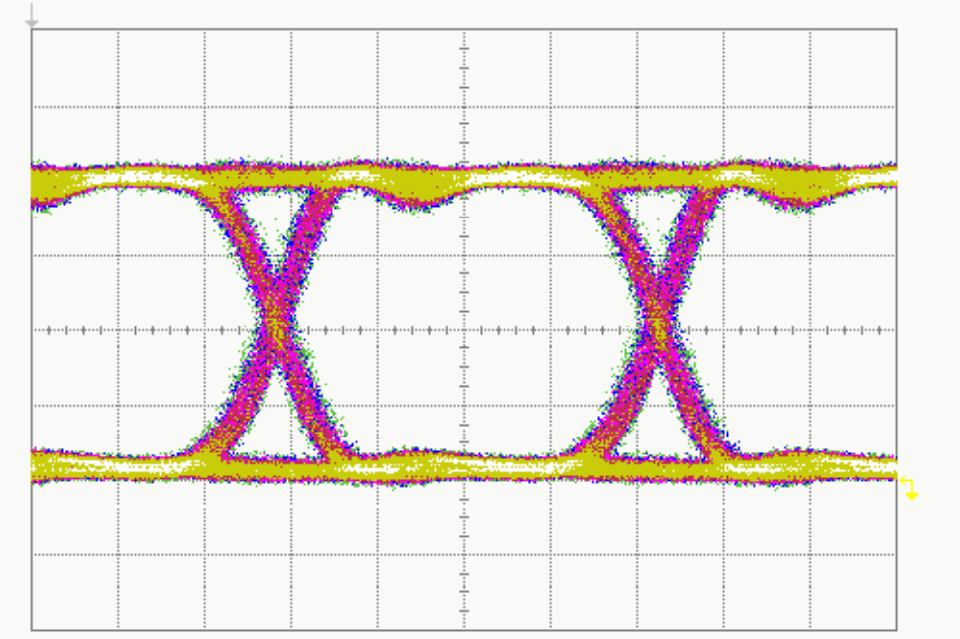


Measured Data: Vd = 3.3 V, Vin = 1 Vpp, Vout = 3.0 Vpp, 11.3 Gb/s, PRBS 2^{31} - 1



Electrical Eye:

Additive RMS Jitter = 2.0 ps, 10%-90% Rise / Fall Time = 30.7 / 35.1 ps

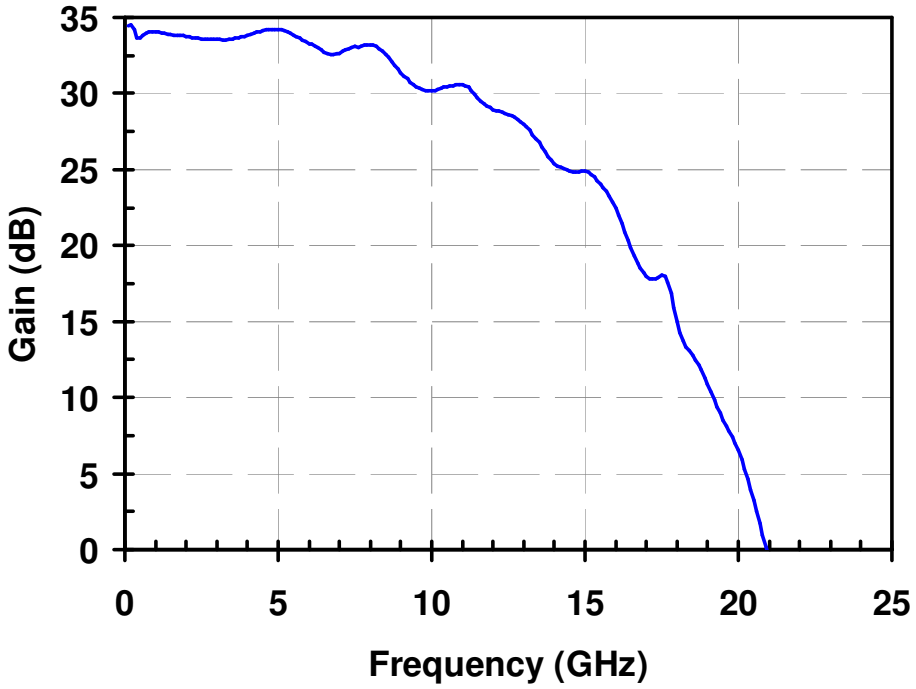


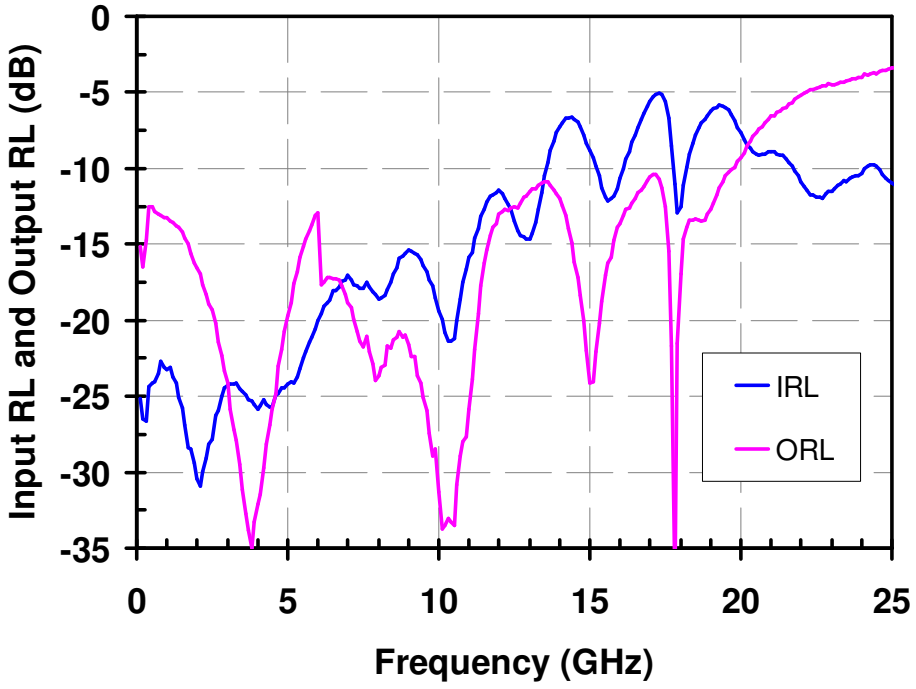
Optical Eye:

Additive RMS Jitter = 1.9 ps, 20% - 80% Rise / Fall Time = 22.2 / 23.1 ps, Extinction Ratio = 13.7 dB

Measured Data

Vd = 3.3 V, Id = 115 mA





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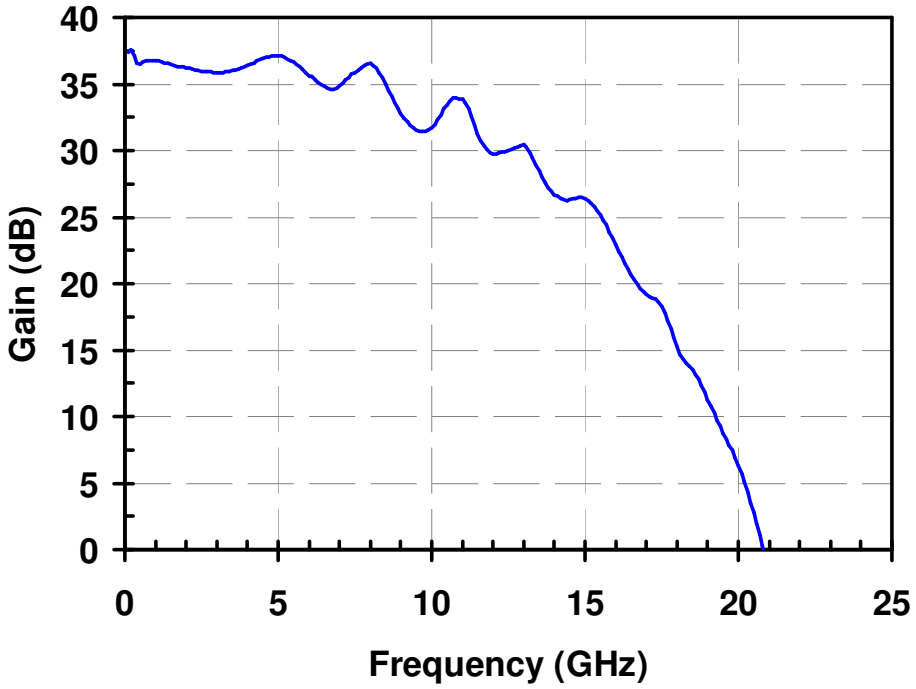
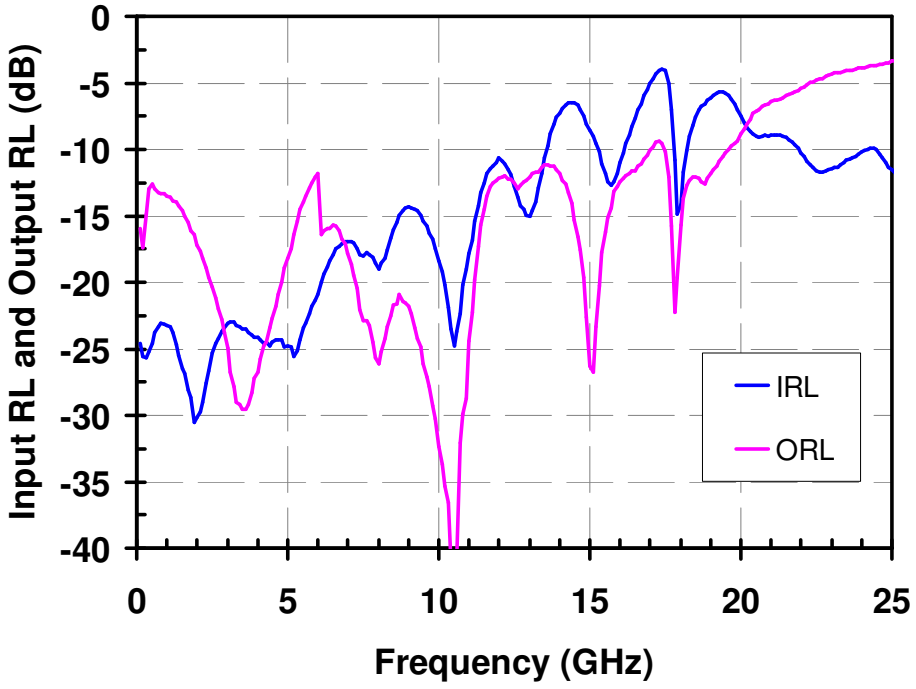
Measured Data

Vd = 5 V, Id = 200 mA





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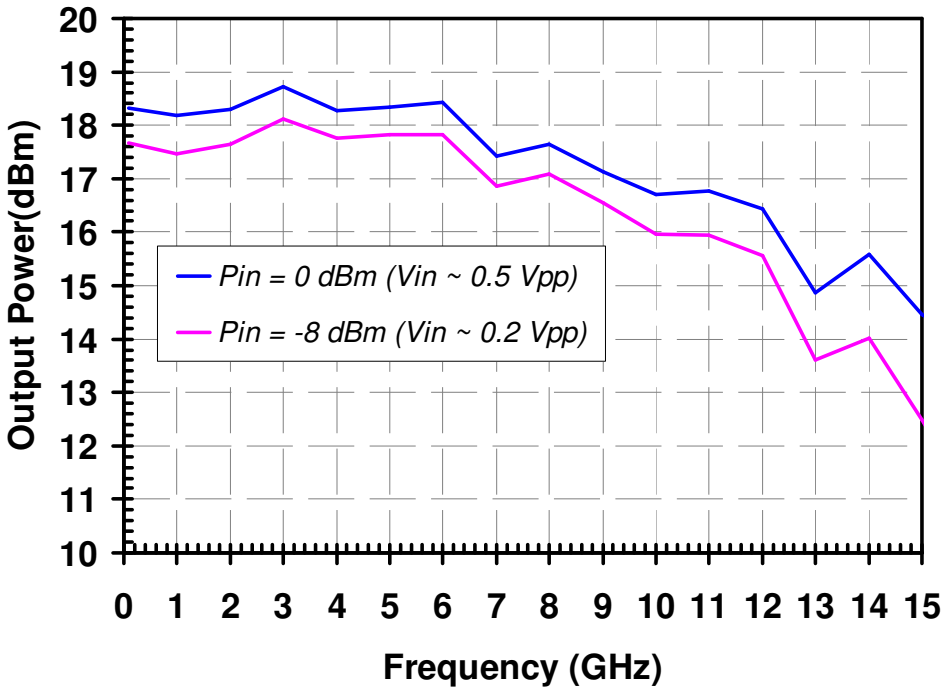
Measured Data

Vd = 3.3 V, Idq = 115 mA



Vd = 5 V, Idq = 200 mA