



# Ultra Low Power, Adaptive Linear Power™, Dual-Port ADSL2+/VDSL2 Line Driver

Preliminary Technical Data

ADLD8404

## FEATURES

Two differential DSL channels comprised of current feedback, high output current amplifiers with integrated resistors and biasing network

Ideal for use as ADSL2+/VDSL2 dual-channel Central Office (CO) & FTTX (Remote Cabinet) line drivers

Low power consumption using Class H Technology

Single +14V supply operation

20.4 dBm line power, 1:1.4 transformer

780 mW/channel total power dissipation while driving

20.4 dBm (includes 110mW line power)

475 mW/channel total power dissipation while driving

14.5 dBm (includes line power)

High output voltage and current drive

40 V p-p differential output voltage

Low distortion

-65 dBc typical MTPR @ 20.4 dBm, 26 kHz to 2.2 MHz

-55 dBc typical MTPR @ 14.5 dBm, 5.2MHz to 17.6MHz

Low cost protection components enable K20 & GR1089 compliance

Protected by US Patent 6,636,103

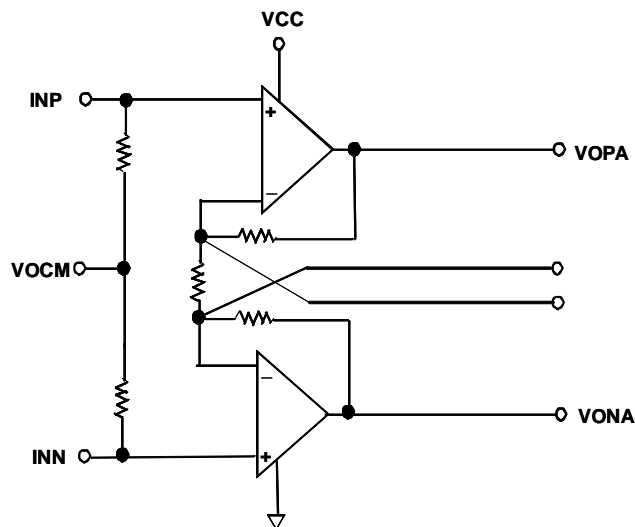


Figure 1. Channel 1 Internal Schematics

## APPLICATIONS

ADSL2+/VDSL2 CO line drivers

ADSL2+/VDSL2 FTTX line drivers

## GENERAL DESCRIPTION

The ADLD8404 is comprised of two differential, high output current, low power consumption operational amplifiers. It is particularly well suited for the CO & FTTX driver interface in digital subscriber line systems, such as ADSL2+ and VDSL2. The driver can deliver 20.4 dBm to a line while compensating for losses due to hybrid insertion and back-termination resistors. ADLD8404 uses second-generation Adaptive Linear Power (Class H) architecture to achieve unprecedented power efficiency while using a single power supply and three external capacitors. Further functionality permits the shutdown of pumps for enhanced power savings for line power < 14.5dBm. This yields the smallest PCB footprint and lowest total cost of ownership.

The low power consumption, high output current, high output voltage swing, and robust thermal packaging enable the ADLD8404 to be the CO or FTTX line driver in ADSL2+ and VDSL2 systems.

The ADLD8404 is available in a 4 mm × 4mm 24 lead LFCSP.

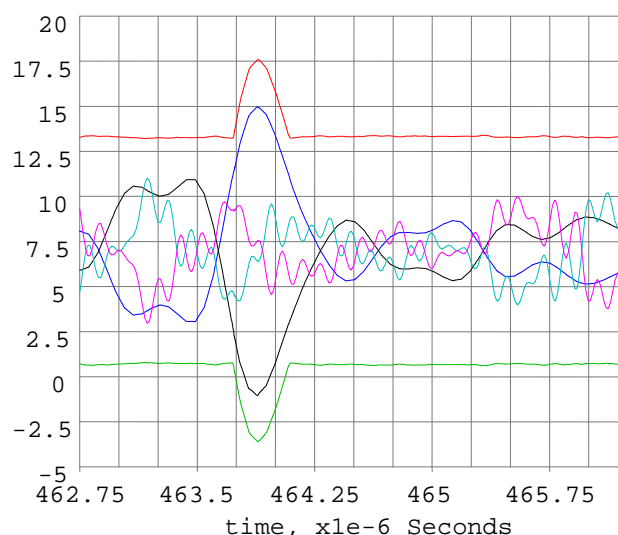


Figure 2. Class H Operation- red & green traces are internal signal-tracking power supplies. Channel 1 (blue, black) = ADSL2+, Channel 2 (pink, light blue) = Profile 8b.

## Rev. PrA

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## ORDERING GUIDE

Model	Temperature Range	Package Description	Package Option
ADLD8404ACPZ-R2 <sup>1</sup>	–40°C to +85°C	24-Lead Lead Frame Chip Scale Package [LFCSP_WQ]	CP-24-7
ADLD8404ACPZ-R7 <sup>1</sup>	–40°C to +85°C	24-Lead Lead Frame Chip Scale Package [LFCSP_WQ]	CP-24-7
ADLD8404ACPZ-RL <sup>1</sup>	–40°C to +85°C	24-Lead Lead Frame Chip Scale Package [LFCSP_WQ]	CP-24-7

<sup>1</sup> Z = RoHS Compliant Part.