

Ultra Low Power 10.3 Gbps 2-Channel Repeaters with Input Equalization and Output De-Emphasis

General Description

The DS100BR210 and DS100BR111 are extremely low power, high performance dual-channel repeaters for serial links with data rates up to 10.3 Gbps. The DS100BR210 features two unidirectional channels, while the DS100BR111 features one bidirectional lane (one transmit, one receive channel).

Both devices feature a powerful 4-stage continuous time linear equalizer (CTLE) to open an input eye that is completely closed due to inter-symbol interference (ISI) induced by the interconnect mediums. The transmitter features a programmable output de-emphasis driver and allows amplitude voltage levels to be selected from 700 mVp-p to 1200 mVp-p to suit multiple application scenarios.

DS100BR210/111 consume 65 mW/channel (typ), and allow the option to turn-off unused channels. This ultra low power consumption eliminates the need for external heat sinks and simplifies thermal management in active cable applications.

The programmable settings can be applied via pin settings, SMBus (I2C) protocol. Offered in a small 4mm x 4mm LLP package with flow through pinout, the DS100BR210/111 are easy to design.

Notice: This document is not a full datasheet. For more information regarding this product or to order samples please contact your local National Semiconductor sales office or visit <http://www.national.com/support/dir.html>

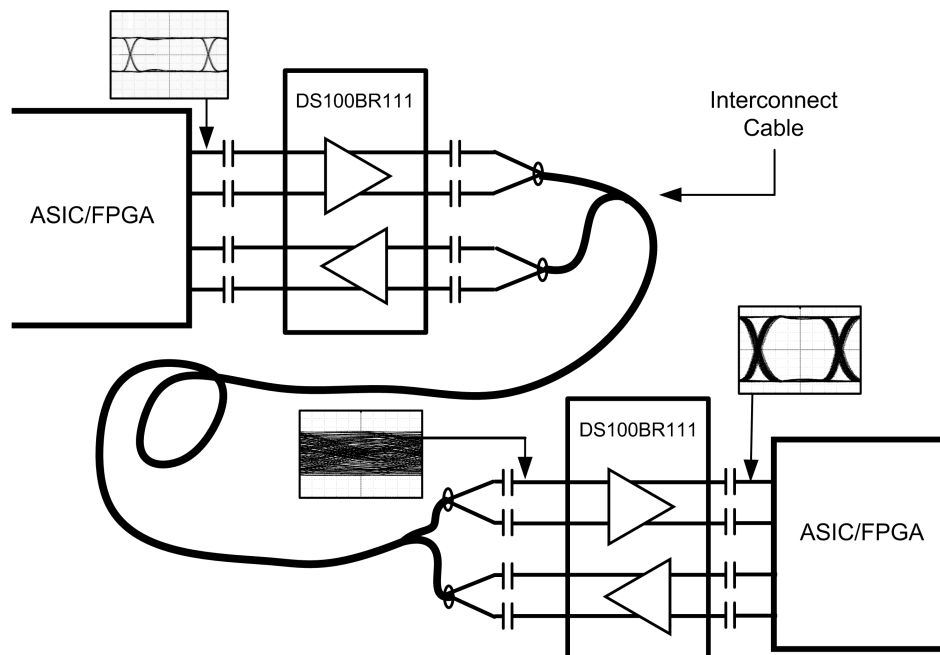
Features

- Two channel repeater for up to 10.3 Gbps
 - DS100BR210 : 2x unidirectional channels
 - DS100BR111 : 1x bidirectional lane
- Low 65mW/channel (typ) power consumption, with option to power down unused channels
- Advanced signal conditioning features
 - Advanced 4-Stage Equalization
 - Transmit de-emphasis
 - Transmit VOD control: 700 to 1200 mVp-p
 - < 0.3 UI of residual DJ at 10 Gbps with 50" FR-4, or 15 meters of 28-AWG cables
- Programmable via pin selection or SMBus interface
- Selectable single supply operation
- Flow-thru pinout in 4mmx4mm 24-pin leadless LLP package
- >6kV HBM ESD rating
- Industrial -40 to 85°C operating temperature range

Applications

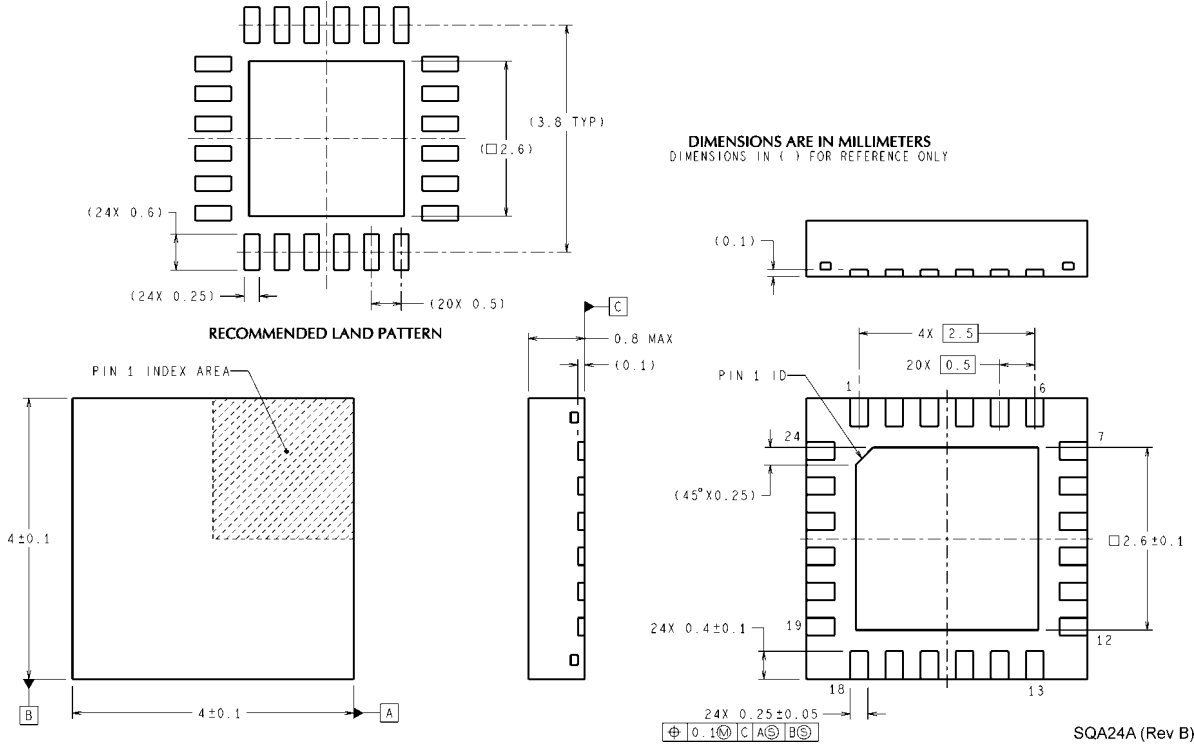
- High-speed active copper cable modules and FR-4 backplane in communication systems
- 10GE, FC, SAS, SATA 3/6 Gbps (with OOB detection), InfiniBand, CPRI, RXAUI, Many others

Typical Application



30138880

Physical Dimensions inches (millimeters) unless otherwise noted



- Order Number DS100BR210SQ (Tape and Reel 2000 units)
- Order Number DS100BR210SQE (Tape and Reel 250 units)
- Order Number DS100BR111SQ (Tape and Reel 2000 units)
- Order Number DS100BR111SQE (Tape and Reel 250 units)
- NS Package Number SQA24A
- (See AN-1187 for PCB Design and Assembly Recommendations)

Notes

Notes

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