Data Sheet September 11, 2006 FN6114.0

-52V Dual Channel Differential DSL Line Driver

The ISL1541 is a -52V dual channel differential amplifier designed for driving full rate ADSL signals at very low power dissipation. The high supply voltage allows operation from a single standard -52V negative battery supply. It contains two pairs of wideband, high voltage, current mode feedback amplifiers optimized for lower power consumption and highest performance in ADSL and ADSL2+ systems. The line drivers have fixed gain A_V = 48 with integrated feedback and gain resistors. Its output clamping circuit eliminates the requirement for the Zener protection diodes.

These drivers achieve an MTPR distortion measurement of better than 70dB while consuming typically 3mA per DSL channel of total supply current.

The ISL1541 is supplied in a thermally-enhanced 6mm x 6mm 24 Ld QFN package and is specified for operating over the full -40°C to +85°C temperature range.

Ordering Information

PART NUMBER	TAPE & REEL	PACKAGE	PKG. DWG. #
ISL1541IRZ (See Note)	-	24 Ld QFN (6mm x 6mm) (Pb-free)	L24.6x6
ISL1541IRZ-T7 (See Note)	7”	24 Ld QFN (6mm x 6mm) (Pb-free)	L24.6x6
ISL1541IRZ-T13 (See Note)	13”	24 Ld QFN (6mm x 6mm) (Pb-free)	L24.6x6

NOTE: Intersil Pb-free plus anneal products employ special Pb-free material sets; molding compounds/die attach materials and 100% matte tin plate termination finish, which are RoHS compliant and compatible with both SnPb and Pb-free soldering operations. Intersil Pb-free products are MSL classified at Pb-free peak reflow temperatures that meet or exceed the Pb-free requirements of IPC/JEDEC J STD-020.

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Features

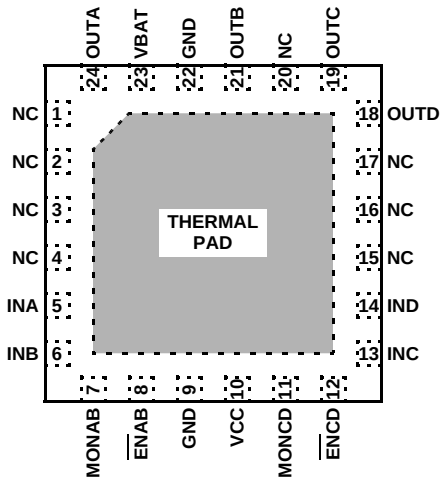
- 100mA output current driving capability
- Operates from a single -40V to -60V power supply
- 800mW per channel total power dissipation
- MTPR of -70dB
- $96V_{P-P}$ differential output swing
- Fixed gain, integrated gain resistors
- Current control pins
- Output clamp for lightning and surge protection
- Channel separation
  - 75dB @ 1MHz
- Pb-Free plus anneal available (RoHS compliant)

Applications

- Dual port ADSL and ADSL2+ line drivers
- HDSL, HDSL2, HDSL 4 and SHDSL line drivers
- DSLAM, DLC, MDU/MTU line drivers
- Performance upgrade to Le87213, Le87213A, Le87220
- Pin to Pin replacement for Le87220

Pinout

ISL1541
[24 Ld QFN (6mm x 6mm)]
TOP VIEW



CAUTION: These devices are sensitive to electrostatic discharge; follow proper IC Handling Procedures.
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