



## L9216A/G Short-Loop Ringing SLIC with Ground Start

### Introduction

The L9216 is a subscriber line interface circuit (SLIC) that is optimized for short-loop, power sensitive applications. This device provides the complete set of line interface functionality, including power ringing needed to interface to a subscriber loop. This device has the capability to operate with a  $V_{cc}$  supply of 3.3 V or 5 V and is designed to minimize external components required at all device interfaces.

### Features

- Onboard ringing generation
- Three ringing input options
  - Sinewave
  - PWM
  - Logic level squarewave
- Flexible  $V_{cc}$  options
  - 5 V or 3.3 V  $V_{cc}$
  - No -5 V required
- Battery switch to minimize off-hook power
- 8 operating states
  - Scan mode for minimal power dissipation
  - Forward and reverse battery active
  - On-hook transmission states
  - Ground Start
  - Ring mode
  - Disconnect mode
- Ultralow on-hook power
  - 27 mW scan mode
  - 41 mW active mode
- Two SLIC gain options to minimal external components in codec interface
- Loop start, ring trip, and ground start detectors
- Software controllable dual current limit option
- 28-pin PLCC package

### Applications

- Voice over Internet Protocol (VoIP)
- Cable Modems

- Terminal Adapters (TA)
- Wireless Local Loop (WLL)
- *Telcordia Technologies\** TA-909 Access
- Network Termination (NT)
- Key Systems

### Description

This device is optimized to provide battery feed, ringing, and supervision on short-loop plain old telephone service (POTS) loops. Supported loop length is less than 250  $\Omega$  of wire.

This device provides power ring to the subscriber loop through amplification of a low-voltage input. It provides forward and reverse battery feed states, on-hook transmission, a low-power scan state, ground start (tip open), and a forward disconnect state.

The device requires a  $V_{cc}$  and battery to operate.  $V_{cc}$  may be either a 5 V or a 3.3 V supply. The ringing signal is derived from the high-voltage battery. A battery switch is included to allow for use of a lower-voltage battery in the off-hook mode, thus minimizing short-loop off-hook power.

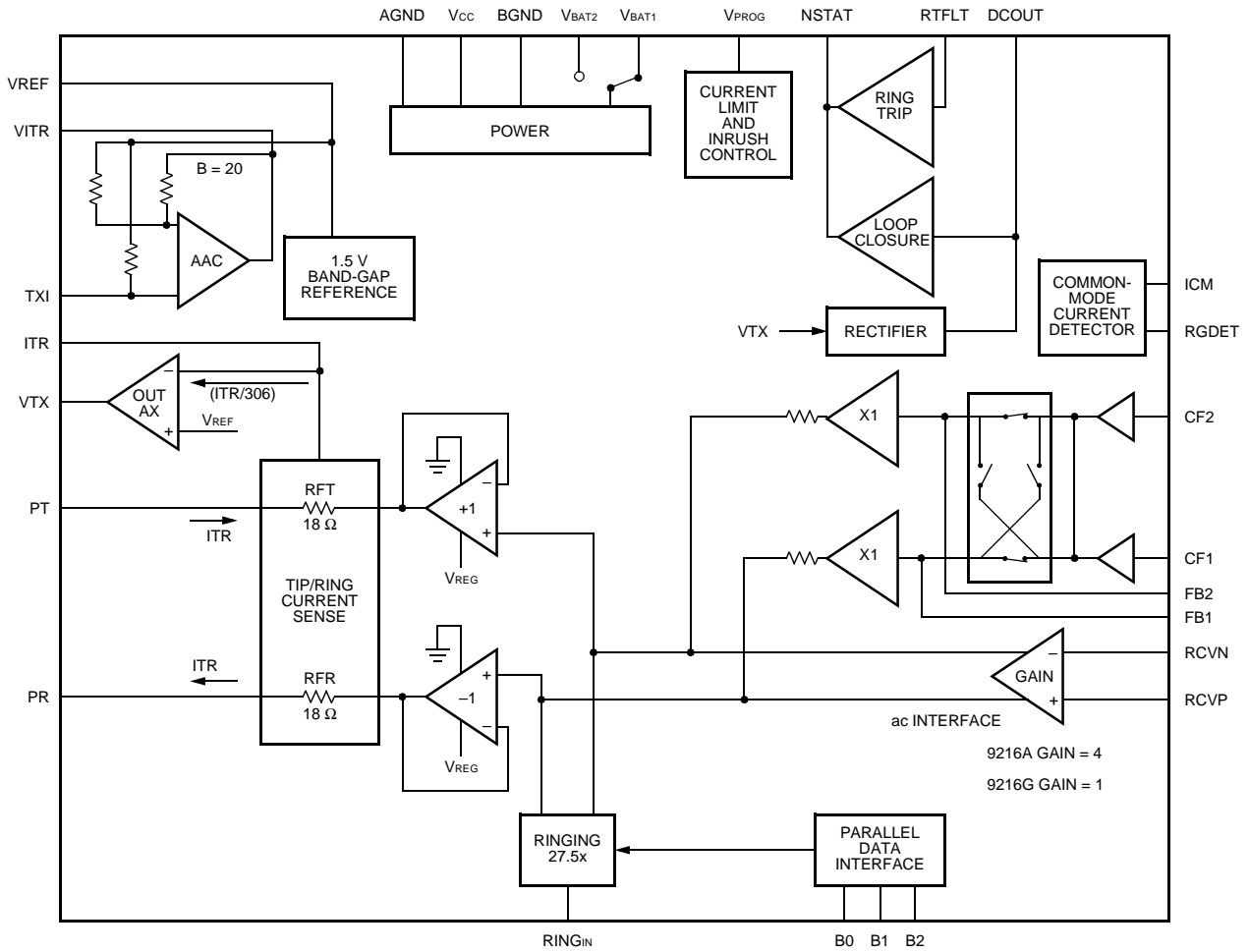
Loop closure, ring trip, and ground start detectors are available. The loop closure detector has a fixed threshold with hysteresis. The ring trip detector requires a single-pole filter, thus minimizing external components required.

The dc current limit is set and fixed by a logic controllable pin. Ground or  $V_{cc}$  applied to this pin set the current limit at the high or low value.

The device is offered with two gain options. This allows for an optimized codec interface, with minimal external components regardless of whether a first-generation or a programmable third-generation codec is used.

\* *Telcordia Technologies* is a registered trademark of Bell Communications Research, Inc.

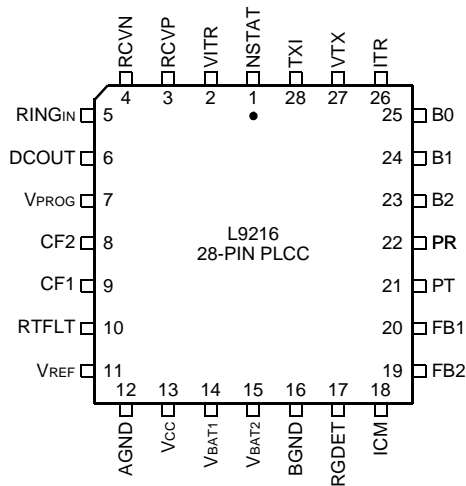
### Architecture Diagram



12-3530.E (F)

Figure 1. Architecture Diagram

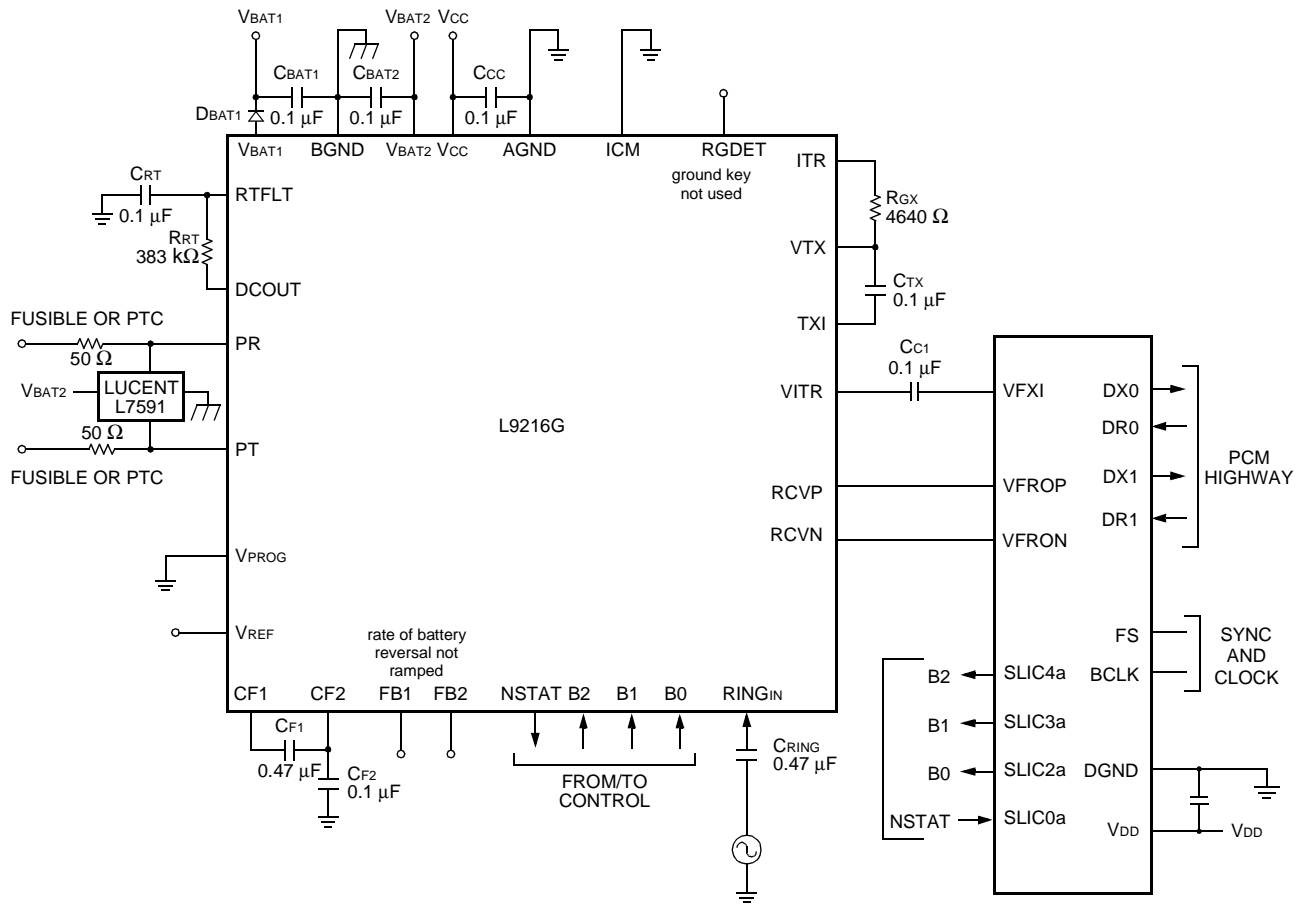
### Pin Information



12-3558.d (F)

Figure 2. 28-Pin PLCC

Applications



12-3534.J (F)

Figure 3. Third-Generation Codec ac Interface Network; Complex Termination

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