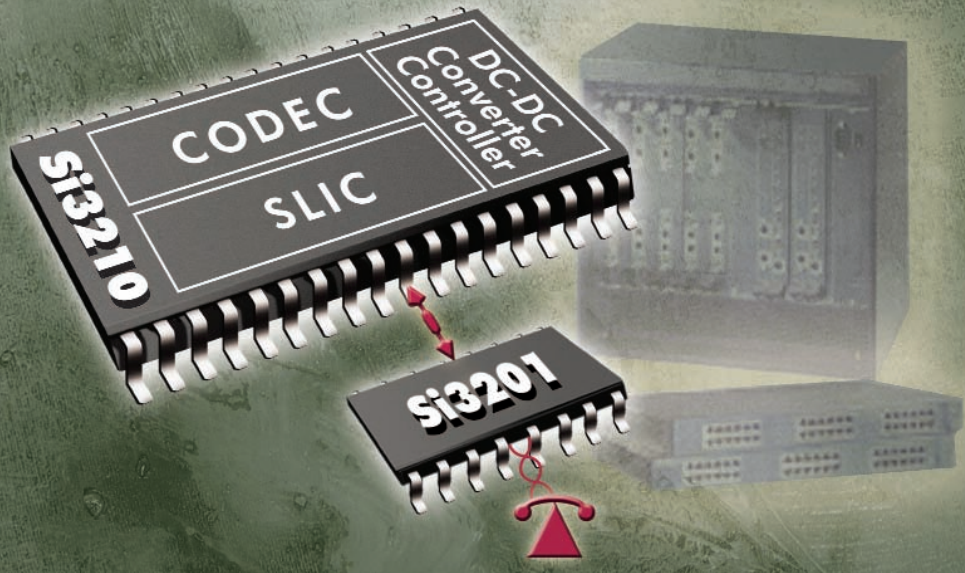


Si3210 ProSLIC™

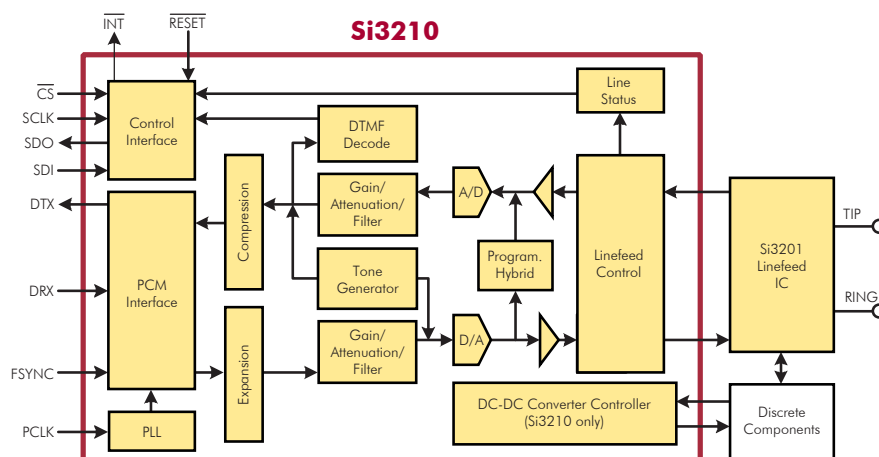
PROGRAMMABLE CMOS SLIC/CODEC WITH RINGING AND BATTERY VOLTAGE GENERATION



PRODUCT DESCRIPTION

The Si3210 ProSLIC™ provides a complete analog telephone interface ideal for customer premise equipment (CPE) applications. The Si3210 integrates subscriber line interface circuit (SLIC), codec and battery generation functionality into a single low-voltage CMOS integrated circuit. Combined with Silicon Laboratories' new Si3201 linefeed integrated circuit, the Si3210 packs maximum performance and flexibility into a 1.5 in² footprint, making it the smallest single-channel telephony interface available. The integrated battery supply continuously adapts its output voltage to minimize power and enables the entire solution to be powered from a single 3.3 V or 5 V supply. Software configurable features include 5 REN internal ringing up to 90 V_{PK}, DTMF generation and decoding, and a comprehensive set of telephony signaling capabilities for global operation with only one hardware solution. The Si3210 is packaged in a 38-pin TSSOP, and the Si3201 is packaged in a thermally-enhanced 16-pin SOIC.

ProSLIC BLOCK DIAGRAM



FEATURES

- Performs all battery, overvoltage, ringing, supervision, coding, hybrid and test (BORSCHT) functions
- Adaptive battery voltage generation minimizes power in all operating modes
- Entire solution can be powered from a single 3.3 V or 5 V supply
- 5 REN sinewave or trapezoid internal ringing up to 90 V_{PK}
- Software programmable parameters for global compliance with one hardware solution:
 - Ringing amplitude, frequency and cadence
 - Constant current loop feed (20–41 mA)
 - Ring trip/loop closure thresholds and filtering
 - 2-wire AC impedance and transhybrid balance
- Extensive telephony signaling capabilities:
 - DTMF generation and decoding
 - Polarity reversal
 - FSK (caller ID) tone generation
 - 12 kHz and 16 kHz pulse metering
- Audio loopback, DC and GR-909 subscriber line diagnostic capabilities
- Configurable PCM/SPI digital interface

APPLICATIONS

- Voice-over-broadband systems
- Terminal adapters: ISDN, Ethernet, USB
- PBX/IP-PBX/key telephone systems
- Computer telephony

PRODUCT BRIEF

**INTEGRATED SLIC, CODEC AND BATTERY
GENERATION FUNCTIONALITY IN THE
SMALLEST ANALOG TELEPHONY
INTERFACE AVAILABLE**



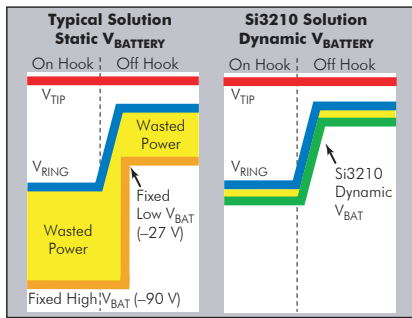
INTEGRATED SLIC, CODEC AND BATTERY SUPPLY

Innovative

The ProSLIC's complete integration of an analog telephony interface into one low-voltage CMOS device enables designers to realize unmatched channel density at an attractive price point.

Integrated Battery Supply

The integrated DC-DC converter controller eliminates the need for designing bulky, expensive high-voltage power supplies as the entire ProSLIC solution can operate from a single 3.3 V or 5 V power supply. The ProSLIC continuously adapts battery output voltage to minimize power for all operating modes and line conditions



Flexible

The ProSLIC's highly programmable feature set provides the flexibility to optimize performance across a wide range of customer premise applications. All SLIC and codec parameters are 100% configurable using software programmable registers.

Global

The ProSLIC contains all the features and flexibility needed for one hardware design to ship worldwide.

Economical

Extensive integration, CMOS technology, small footprint, proven performance and global flexibility in software—the ProSLIC brings all this together to offer high-end analog telephone performance at an economical solution cost.

CONTACT INFORMATION



SILICON LABORATORIES

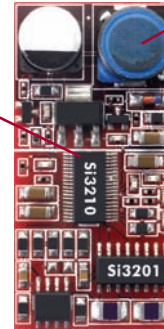
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Smallest Footprint—Small Solution Cost

The Si3210's unique integration of a complete analog telephony interface enables flexible channel scalability without sacrificing cost or channel density.

(Actual Size)
1.5 in²



Si3210 ProSLIC

- Integrates SLIC, codec, and battery generation
- 90 V_{PK} 5 REN internal ringing
- On-chip DTMF and caller ID
- 38-pin TSSOP

Integrated Battery Supply

- 3.3 V to 35 V DC input range
- Dynamic 0 V to -94.5 V output
- Real-time adaptive voltage output minimizes power
- Low cost inductor and high-efficiency transformer versions supported

Si3201 Linefeed Interface Chip

- Supports operation up to 100 V
- Power-enhanced 16-pin SOIC

ProSLIC Family Feature Summary

| Feature | Si3210 | Si3211/ Si3212 | Si3220 | Si3225 | Si3232 |
|-----------------------------|--------------------|--------------------|--------------------|-----------|--------------------|
| Number of Channels | single | single | dual | dual | dual |
| Integrated SLIC and Codec | ✓ | ✓ | ✓ | ✓ | no codecs |
| On-Chip DC/DC Converter | ✓ | | | | |
| External Ringing Support | | | | ✓ | |
| Internal Ringing | 90 V _{PK} | 90 V _{PK} | 95 V _{PK} | — | 95 V _{PK} |
| Linefeed Device | Si3201 | Si3201 | Si3200 | Si3200 | Si3200 |
| On-Chip DTMF Decoder | ✓ | Si3211 | ✓ | ✓ | |
| Subscriber Line Diagnostics | DC | DC | audio, DC | audio, DC | DC |

ORDERING INFORMATION

| Product | Description |
|-----------------|---|
| Si3210-KT | ProSLIC w/inductor-based DC-DC converter and DTMF decoding, 0 to 70 °C |
| Si3210-BT | ProSLIC w/inductor-based DC-DC converter and DTMF decoding, -40 to 85 °C |
| Si3210M-KT | ProSLIC w/transformer-based DC-DC converter and DTMF decoding, 0 to 70 °C |
| Si3210M-BT | ProSLIC w/transformer-based DC-DC converter and DTMF decoding, -40 to 85 °C |
| Si3211-KT | ProSLIC w/DTMF decoding, 0 to 70 °C |
| Si3211-BT | ProSLIC w/DTMF decoding, -40 to 85 °C |
| Si3212-KT | ProSLIC, 0 to 70 °C |
| Si3212-BT | ProSLIC, -40 to 85 °C |
| Si3201-KS | ProSLIC Linefeed Interface Chip for Si321x, 0 to 70 °C |
| Si3201-BS | ProSLIC Linefeed Interface Chip for Si321x, -40 to 85 °C |
| Si3210PPT1-EVB | ProSLIC evaluation board supporting Si3210 |
| Si3210MPPT1-EVB | ProSLIC evaluation board supporting Si3210M |
| Si3211PPTX-EVB | ProSLIC evaluation board supporting Si3211 |
| Si3212PPTX-EVB | ProSLIC evaluation board supporting Si3212 |