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 VPK, 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.

PRODUCT BRIEF

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 VPK
- 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

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

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

Si3210 ProSLIC

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

Si3201 Linefeed Interface Chip

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

ProSLIC Family Feature Summary

<table>
<thead>
<tr>
<th>Feature</th>
<th>Si3210</th>
<th>Si3211/ Si3212</th>
<th>Si3220</th>
<th>Si3225</th>
<th>Si3232</th>
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<tbody>
<tr>
<td>Number of Channels</td>
<td>single</td>
<td>single</td>
<td>dual</td>
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<tr>
<td>Integrated SLIC and Codec</td>
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<td>✓</td>
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<td>On-Chip DC/DC Converter</td>
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<tr>
<td>External Ringing Support</td>
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<tr>
<td>Internal Ringing</td>
<td>90 Vpk</td>
<td>90 Vpk</td>
<td>95 Vpk</td>
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<td>Linefeed Device</td>
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<td>On-Chip DTMF Decoder</td>
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<td>Si3211</td>
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<td>Subscriber Line Diagnostics</td>
<td>DC</td>
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