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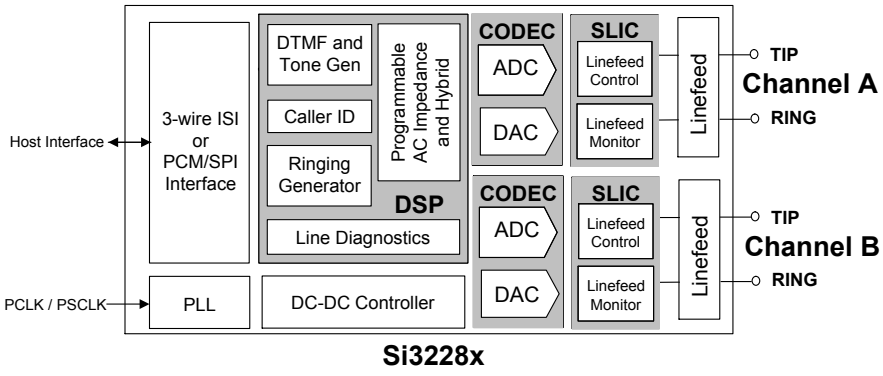
Si3228x Data Short: ProSLIC® Single-Chip Dual FXS Solution

The Si3228x Dual ProSLIC® devices, in a single package, implement two complete foreign exchange station (FXS) telephony interfaces. The Si3228x devices operate from a 3.3 V supply and have standard PCM/SPI or 3-wire ISI digital interfaces. A pair of built-in dc-dc converter controllers can be used to automatically generate the optimal battery voltage required for each line-state, optimizing efficiency and minimizing heat generation. The Si3228x devices are designed to operate with capacitive boost tracking battery supply for lower power, cost, and footprint vs. other tracking or shared battery supplies in the industry. Self-testing and metallic loop testing (MLT) is facilitated by the built-in DSP, monitor ADC, and test load. The devices are available with wideband audio for better than PSTN voice quality, DTMF detection, and Smart Ringing. Smart Ringing reduces the peak current with 2-channel ringing for lower-cost ac-dc adapters. The Si3228x devices are available in a 7 x 7 mm 48-pin QFN or 8 x 8 mm 56-pin QFN package.

Applications:

- VoIP gateways and routers
- xDSL IADs
- Optical Network Terminals/Units (ONT/U)
- Analog Terminal Adapters (ATA)
- Cable eMTA
- Wireless Fixed Terminals (WFT)
- Wireless Local Loop (WLL)
- WiMAX CPE
- Private Branch Exchange (PBX)
- VoIP MDU gateways



Functional Block Diagram

KEY FEATURES

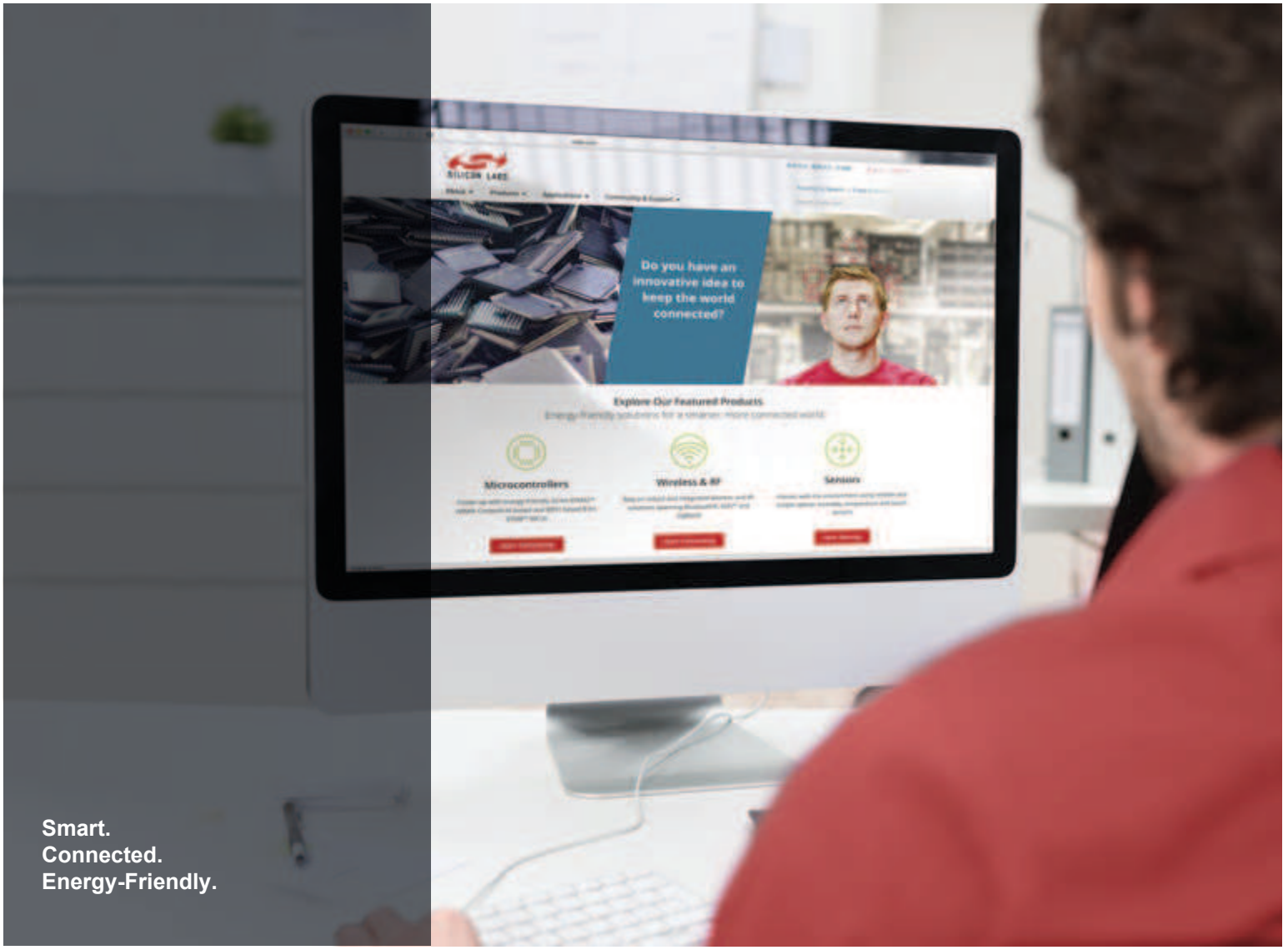
- Two complete FXS channels in a single 7x7 or 8x8 mm package
- Performs all BORSCHT functions
- Ideal for short- or medium-loop applications
- Ultra-low power consumption
- Patented low-power ringing
- Patent-pending Smart Ringing
  - Reduces peak current with 2-channel ringing
- Adaptive ringing
- Simplified configuration and diagnostics
  - Supported by ProSLIC API
  - Audio diagnostics with loopback
  - Integrated test load
- Wideband voice support
- On-hook transmission
- Loop or ground start operation
- Smooth polarity reversal
- Programmable interrupts
- Software-programmable parameters:
  - Ringing frequency, amplitude, cadence, and waveshape
  - Two-wire ac impedance
  - Transhybrid balance
  - DC current loop feed (10–45 mA)
  - Loop closure and ring trip thresholds
  - Ground key detect threshold
- Flexible integrated tracking DC-DC controller supporting patent-pending low-cost capacitive boost configuration
- DTMF Generation
- DTMF Detection (Si32281/3/5/7)
- 3-wire Integrated Serial Interface (ISI) or PCM interface
- A-Law/μ-Law companding, linear PCM
- Pulse metering
- 3.3 V operation
- Pb-free/RoHS-compliant packaging

Table 1.1. Si3228x Ordering Guide

P/N	Description	Package Type	Max V_{BAT}	Temperature
Si32280-A-FM	Wideband Dual FXS, ISI interface	QFN48[2]	–106 V	0 to 70 °C
Si32280-A-GM	Wideband Dual FXS, ISI interface	QFN48[2]	–106 V	–40 to 85 °C
Si32281-A-FM	Wideband Dual FXS, ISI interface, DTMF detection	QFN48[2]	–106 V	0 to 70 °C
Si32281-A-GM	Wideband Dual FXS, ISI interface, DTMF detection	QFN48[2]	–106 V	–40 to 85 °C
Si32282-A-FM	Wideband Dual FXS, PCM interface, daisy-chain mode	QFN56[2]	–106 V	0 to 70 °C
Si32282-A-GM	Wideband Dual FXS, PCM interface, daisy-chain mode	QFN56[2]	–106 V	–40 to 85 °C
Si32283-A-FM	Wideband Dual FXS, PCM interface, DTMF detection, daisy-chain mode	QFN56[2]	–106 V	0 to 70 °C
Si32283-A-GM	Wideband Dual FXS, PCM interface, DTMF detection, daisy-chain mode	QFN56[2]	–106 V	–40 to 85 °C
Si32284-A-FM	Wideband Dual FXS, ISI interface, Smart Ringing	QFN48[2]	–106 V	0 to 70 °C
Si32284-A-GM	Wideband Dual FXS, ISI interface, Smart Ringing	QFN48[2]	–106 V	–40 to 85 °C
Si32285-A-FM	Wideband Dual FXS, ISI interface, DTMF detection, Smart Ringing	QFN48[2]	–106 V	0 to 70 °C
Si32285-A-GM	Wideband Dual FXS, ISI interface, DTMF detection, Smart Ringing	QFN48[2]	–106 V	–40 to 85 °C
Si32286-A-FM	Wideband Dual FXS, PCM interface, daisy-chain mode, Smart Ringing	QFN56[2]	–106 V	0 to 70 °C
Si32286-A-GM	Wideband Dual FXS, PCM interface, daisy-chain mode, Smart Ringing	QFN56[2]	–106 V	–40 to 85 °C
Si32287-A-FM	Wideband Dual FXS, PCM interface, DTMF detection, daisy-chain mode, Smart Ringing	QFN56[2]	–106 V	0 to 70 °C
Si32287-A-GM	Wideband Dual FXS, PCM interface, DTMF detection, daisy-chain mode, Smart Ringing	QFN56[2]	–106 V	–40 to 85 °C

Note:

1. Adding the suffix "R" to the part number (e.g., Si32282-C-FMR) denotes tape and reel.
2. QFN - Quad-Flat No-leads



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