

### Description

The Dual ProSLIC® is a family of low-voltage CMOS devices that integrate both SLIC and CODEC functionality into a single IC. In combination with a linefeed IC (LFIC), they provide a complete two-channel analog telephone interface in accordance with all relevant LSSGR, ITU, and ETSI specifications. The Dual ProSLIC devices (Si3226/7) operate from a single 3.3 V supply and interface to standard PCM/SPI or GCI bus digital interfaces. The LFICs (Si3208/9) perform all high-voltage functions and operate from a 3.3 V supply as well as high-voltage battery supplies. The Si3208 is rated for –110 V, and the Si3209 is rated for –135 V. The Dual ProSLIC devices are available in a 64-pin thin quad flat package (TQFP), and the LFICs are available in a 40-pin, quad flat no-lead package (QFN).

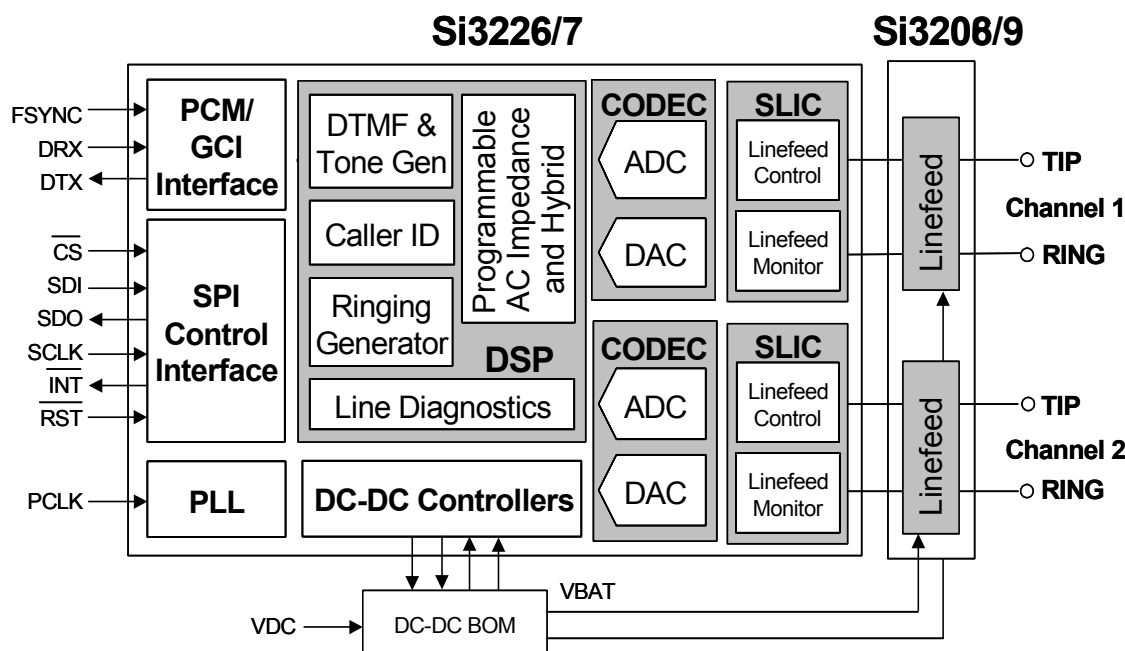
### Features

- Performs all BORSCHT functions
- Ideal for short- or long-loop applications
- Internal balanced or unbalanced ringing
- Low power consumption
- Integrated dc-dc controller
- Wideband CODEC (Si3227)
- Low-power sleep mode
- On-hook transmission

- Software-programmable parameters:
  - Ringing frequency, amplitude, cadence, and wave-shape
  - Two-wire ac impedance
  - Transhybrid balance
  - DC current loop feed (10–45 mA)
  - Loop closure and ring trip thresholds
  - Ground key detect threshold
- Loop or ground start operation
- Smooth polarity reversal
- DTMF generator/decoder
- A-Law/μ-Law companding, linear PCM
- PCM and SPI bus digital interfaces with programmable interrupts
- GCI/IOM-2 mode support
- 3.3 V operation
- GR-909 loop diagnostics
- Audio diagnostics with loopback
- Pb-free/RoHS-compliant packaging

### Applications

- Customer Premises Equipment (CPE)
- Optical Network Terminals (ONT)
- Private Branch Exchange (PBX)
- Cable EMTAs, ATAs, VoIP Gateways

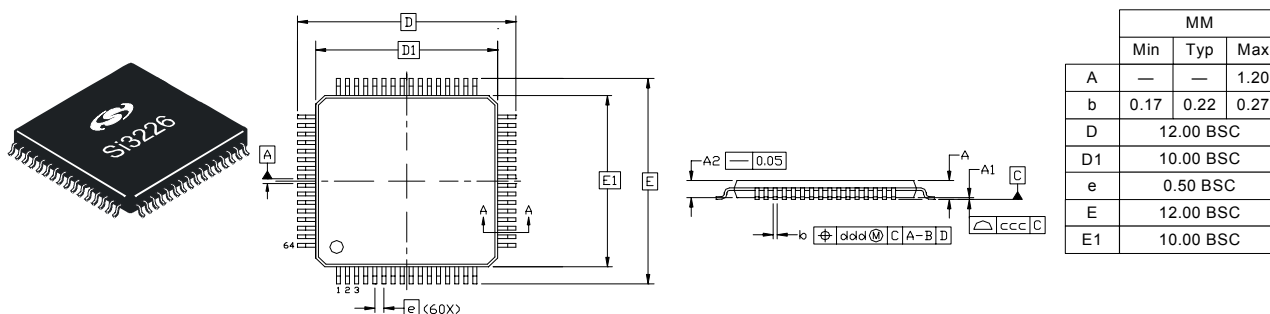


### Selected Electrical Specifications

| Parameter                                                 | Symbol        | Test Condition                                     | Min  | Typical | Max       | Unit     |
|-----------------------------------------------------------|---------------|----------------------------------------------------|------|---------|-----------|----------|
| Ambient Temperature                                       | $T_A$         | F-Grade                                            | 0    | 25      | 70        | °C       |
|                                                           |               | G-Grade                                            | -40  | 25      | 85        | °C       |
| Supply Voltage, Si322x                                    | $V_{DD}$      |                                                    | 3.13 | 3.3     | 3.47      | V        |
| Supply Voltage, Si3209/8                                  | $V_{DD}$      |                                                    | 3.13 | 3.3     | 3.47      | V        |
| Battery Voltage, Si3209/8                                 | $V_{BAT}$     |                                                    | -9   | —       | -135/-110 | V        |
| Maximum Loop Resistance (loop + load)                     | $R_{LOOP}$    | $I_{LOOP}=18\text{ mA}$ , $V_{BAT} = -48\text{ V}$ | —    | —       | 2000      | $\Omega$ |
| DC Differential Output Resistance                         | $R_{DO}$      | $I_{LOOP} < I_{LIM}$                               | 160  | —       | 640       | $\Omega$ |
| Idle Channel Noise                                        |               | C-Message weighted                                 | —    | 8       | 12        | dBrnC    |
| PSRR from $V_{DD}$                                        |               | RX and TX, dc to 3.4 kHz                           | 40   | —       | —         | dB       |
| Longitudinal to Metallic/PCM Balance (forward or reverse) |               | 200 Hz to 1 kHz                                    | 58   | 60      | —         | dB       |
|                                                           |               | 1 kHz to 3.4 kHz                                   | 53   | 58      | —         | dB       |
| Metallic/PCM to Longitudinal Balance                      |               | 200 Hz to 3.4 kHz                                  | 40   | —       | —         | dB       |
| Longitudinal Impedance                                    |               | 200 Hz to 3.4 kHz at TIP or RING                   | —    | 50      | —         | $\Omega$ |
| Longitudinal Current per Pin                              |               | Active off-hook<br>200 Hz to 3.4 kHz               | —    | —       | 30        | mApk     |
| DC Current                                                |               | $V_{TR} = 0\text{ V}$                              | —    | —       | 45        | mA       |
| 2-Wire Return Loss                                        |               | 200 Hz to 3.4 kHz                                  | 26   | 30      | —         | dB       |
| Transhybrid Balance                                       |               | 300 Hz to 3.4 kHz                                  | 26   | 30      | —         | dB       |
| Thermal Resistance (QFN-40)                               | $\theta_{JA}$ |                                                    | —    | 32      | —         | °C/W     |
| Continuous Power Dissipation (QFN-40)                     | $P_D$         | $T_A = 85\text{ °C}$                               | —    | 1.7     | —         | W        |

### Package Information

#### 64-Pin TQFP



#### 40-Pin QFN

