

Description

The Quad ProSLIC® is a series of low-voltage CMOS devices that integrate both SLIC and codec functionality into a single IC to provide a complete four-channel analog telephone interface in accordance with all relevant Telcordia, ITU, and ETSI specifications. The Si3241 includes internal ringing generation to eliminate centralized ringers and ringing relays. On-chip subscriber loop and audio testing allows remote diagnostics and fault detection with no external test equipment or relays. The Quad ProSLIC devices operate from a single 3.3 V supply and interface to standard PCM/SPI or GCI bus digital interfaces. The Si3206/3 linefeed interface IC performs all high-voltage functions and operates from a 3.3 V supply as well as three battery supplies up to -135/-110 V. The Quad ProSLIC devices are available in a 100-pin thin quad flat package (TQFP), and the Si3206/3 is available in a thermally-enhanced 48-pin thin quad flat package (TQFP) or 40-pin quad flat no-lead (QFN) package.

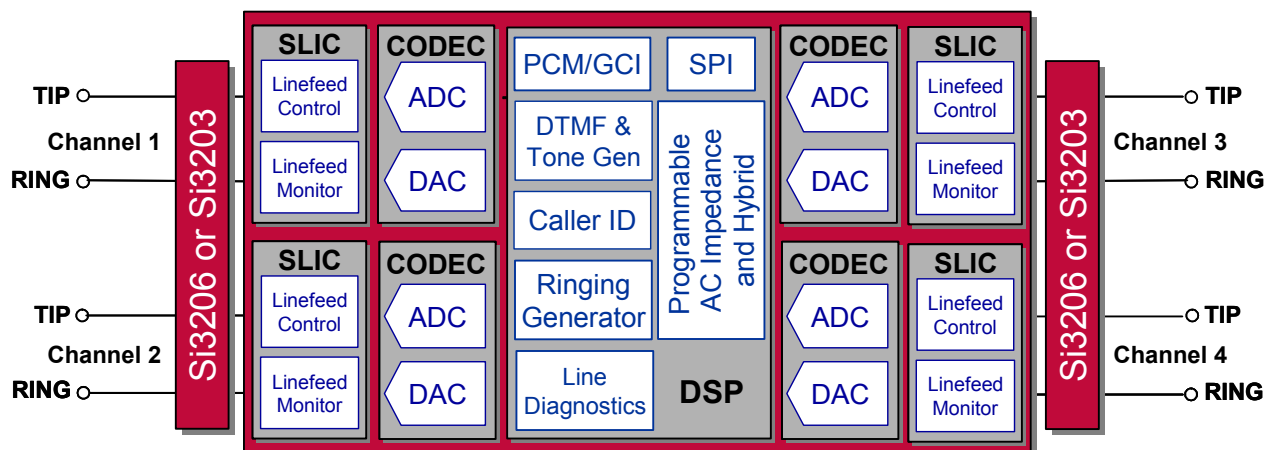
Features

- Performs all BORSCHT functions
- Ideal for applications up to 20 kft (6 km)
- Internal adaptive balanced ringing to -135 V_{PK} (Si3206) and -110 V_{PK} (Si3203)
- Internal unbalanced ringing
- Power offloading
- Low power consumption
- 2.5 V_{rms} pulse metering (12/16 kHz)

- Software programmable parameters:
 - Ringing frequency, amplitude, cadence, and wave-shape
 - Two-wire ac impedance
 - Transhybrid balance
 - DC current loop feed (10–50 mA)
 - Loop closure and ring trip thresholds
 - Ground key detect threshold
 - Power alarms
- Automatic switching of up to three battery supplies
- On-hook transmission
- Loop or ground start operation
- Smooth polarity reversal
- DTMF decoder
- Dual tone generators
- Caller ID generator
- 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-909/844 loop diagnostics
- Audio diagnostics with loopback
- Pb-free/RoHS compliant packages

Applications

- Digital loop carrier (DLC) line cards
- Central office (CO) line cards
- Integrated voice and data (IVD) line cards
- Private Branch Exchange (PBX) systems
- Key telephone systems
- Optical networking terminals (ONT)
- 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, Si324x	V_{DD}		3.13	3.3	3.47	V
Supply Voltage, Si3206/3	V_{DD}		3.13	3.3	3.47	V
High Battery Voltage, Si3206/3	V_{BATH}		-9	—	-135/-110	V
Low Battery Voltage	V_{BATL}		-9	—	V_{BATH}	V
Maximum Loop Resistance (loop + load)	R_{LOOP}	$I_{LOOP}=18$ mA, $V_{BAT} = -48$ V	—	—	2000	Ω
DC Differential Output Resistance	R_{DO}	$I_{LOOP} < I_{LIM}$	160	—	640	Ω
Idle Channel Noise		C-Message weighted	—	8	10	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	63	—	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	—	Ω
Longitudinal Current per Pin		Active off-hook 200 Hz to 3.4 kHz	—	—	30	mApk
DC Current		$V_{TR} = 0$ V	—	—	50	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, (eTQFP-100)	θ_{JA}		—	25	—	°C/W
Continuous Power Dissipation, (eTQFP-100)	P_D	$T_A = 85$ °C	—	1.6	—	W
Thermal Resistance (QFN-40)	θ_{JA}		—	32	—	°C/W
Continuous Power Dissipation (QFN-40)	P_D	$T_A = 85$ °C	—	1.7	—	W

Package Information

