

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 LSSGR, ITU, and ETSI specifications. The Si3240/41 includes internal ringing generation to eliminate centralized ringers and ringing relays. The Si3244/45 supports centralized ringing for long loop and legacy applications. 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 Si3205 linefeed interface IC performs all high-voltage functions and operates from a 3.3 V supply as well as single or dual battery supplies up to 150 V. The Quad ProSLIC devices are available in a 100-pin thin quad flat package (TQFP), and the Si3205 is available in a thermally-enhanced 16-pin small outline (SOIC) package.

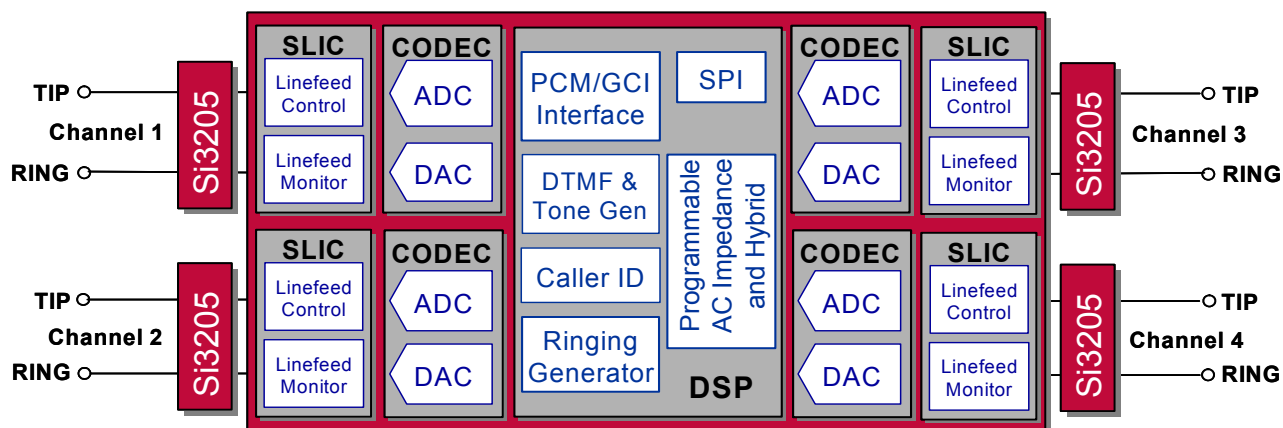
Features

- Performs all BORSCHT functions
- Ideal for applications up to 20 kft
- Internal balanced ringing to 150 V_{PK}
- External bulk ringer support
- Low standby power consumption:
<20 mW per channel
- 2.5 V_{rms} pulse metering

- Software programmable parameters:
 - Ringing frequency, amplitude, cadence, and wave-shape
 - Two-wire ac impedance
 - Transhybrid balance
 - DC current loop feed (16–55 mA)
 - Loop closure and ring trip thresholds
 - Ground key detect threshold
- Automatic switching of up to three battery supplies
- On-hook transmission
- Loop or ground start operation
- Smooth polarity reversal
- Dual tone generators
- 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
- Lead-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, Si3205	V_{DD}		3.13	3.3	3.47	V
High Battery Voltage	V_{BATH}		-9	—	-150	V
Low Battery Voltage	V_{BATL}		-9	—	V_{BATH}	V
Maximum Loop Resistance (loop + load)	R_{LOOP}	$I_{LOOP}=20\text{ mA}$, $V_{BAT} = -48\text{ V}$	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	—	W
Longitudinal Current per Pin		Active off-hook 200 Hz to 3.4 kHz	—	—	30	mApk
DC Current		Differential	—	—	55	mA
2-Wire Return Loss		200 Hz to 3.4 kHz	26	30	—	dB
Transhybrid Balance		300 Hz to 3.4 kHz	34	40	—	dB
Thermal Resistance, (eTQFP-100)	θ_{JA}		—	25	—	°C/W
Continuous Power Dissipation, (eTQFP-100)	P_D	$T_A = 85\text{ °C}$	—	1.6	—	W
Thermal Resistance (eSOIC-16)	θ_{JA}		—	55	—	°C/W
Continuous Power Dissipation (eSOIC-16)	P_D	$T_A = 85\text{ °C}$	—	1	—	W

Package Information

