Si32260/61

Single-Chip Dual ProSLIC®

Description

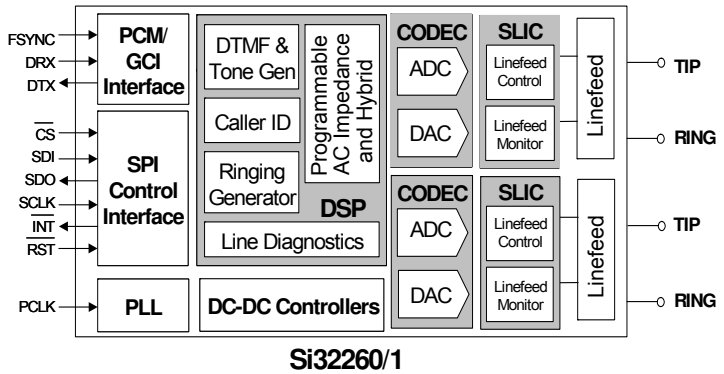
The Si32260/1 Dual ProSLIC® devices, in a single package, implement two complete foreign exchange station (FXS) telephony interfaces. The Si32260/1 devices operate from a 3.3 V supply and have standard PCM/SPI or GCI bus digital interfaces. A pair of built-in dc-dc converter controllers can be used to automatically generate the optimal battery voltage required for each line-state, optimizing efficiency and minimizing heat generation. The Si32260/1 devices are designed to operate not only with a tracking battery supply for each channel for lowest power consumption, but also with shared battery supplies, for lowest cost. When used with shared battery supplies, the internal dc-dc controller operates in Tracking Shared Supply (TSS) mode to deliver power consumption lower than typical fixed voltage shared rail designs. Self-testing and metallic loop testing (MLT) (e.g., GR-909) is facilitated by the built-in DSP, monitor ADC, and test load. The devices are available with linefeed voltage ratings of –110 V (Si32260) or –140 V (Si32261) to support high voltage ringing, and both devices support wideband audio for better-than-PSTN voice quality. The Si32260/1 devices are available in a 8 x 8 mm 60-pin QFN package.

Applications

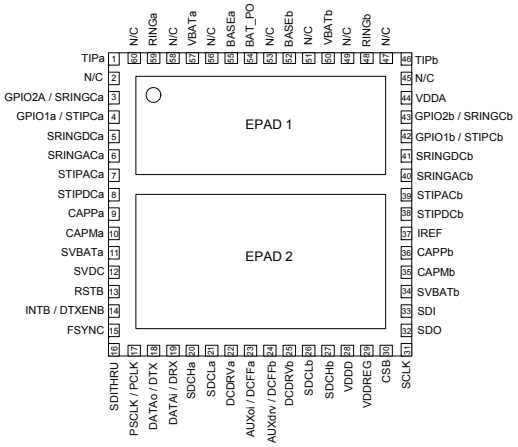
- VoIP gateways and routers
- xDSL IADs
- Optical Network Terminals/Units (ONT/U)
- Analog Terminal Adapters (ATA)
- Cable eMTA
- Wireless Fixed Terminals (WFT)
- Wireless Local Loop (WLL)
- WiMAX CPE
- Private Branch Exchange (PBX)
- VoIP MDU gateways

Si32260/61 Features

- Two complete FXS channels in 8 x 8 mm
- Performs all BORSCHT functions
- Ideal for short- or long-loop applications
- Ultra low power consumption
- Internal balanced or unbalanced ringing
- Patented low power ringing
- Adaptive ringing
- Simplified configuration and diagnostics
  - Supported by ProSLIC API
  - GR-909 loop diagnostics
  - Audio diagnostics with loopback
  - Integrated test load
- Wideband voice support
- On-hook transmission
- Loop or ground start operation
- Smooth polarity reversal
- Pulse metering
- PCM and SPI bus digital interfaces with 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
- Integrated dc-dc controllers with direct connection to MOSFET
- Three high voltage supply options
  - Full tracking
  - Tracking shared supplies
  - Fixed rail
- DTMF generator/decoder
- A-Law/μ-Law companding, linear PCM
- GCI/IOM-2 mode support
- 3.3 V operation
- Pb-free/RoHS-compliant packaging



Si32260/1



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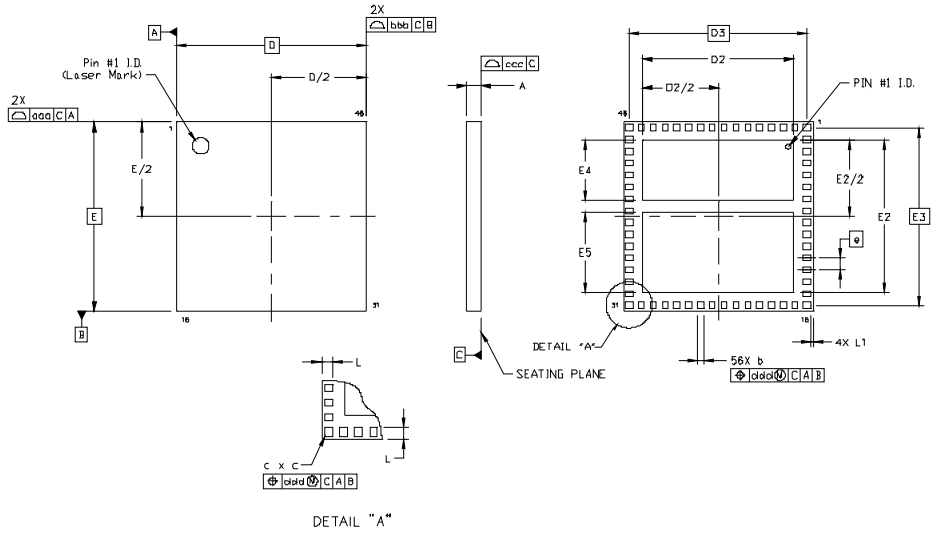
Selected Electrical Specifications

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	V_{DD}		3.13	3.3	3.47	V
Battery Voltage	V_{BAT}		–15	—	–110/–140	V
Maximum Loop Resistance (loop + load)	R_{LOOP}	I_{LOOP}=18 mA, V_{BAT} = –52 V	—	—	2000	Ω
DC Differential Output Resistance	R_{DO}	$I_{LOOP} < I_{LIM}$	160	—	640	Ω
Idle Channel Noise		C-Message weighted	—	8	12	dBrnC
PSRR from V_{DD}		RX and TX, dc to 3.4 kHz	—	55	—	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	—	Ω
Longitudinal Current per Pin		Active off-hook 200 Hz to 3.4 kHz	—	25	—	mA
DC Feed Current			—	—	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-60)	θ_{JA}		—	42	—	°C/W

Ordering Guide

FXS Pin	Description	Max Vbat	Temperature
Si32260-C-FM	Dual FXS, wideband capable	–110 V	0 to 70 °C
Si32260-C-GM	Dual FXS, wideband capable	–110 V	–40 to 85 °C
Si32261-C-FM	Dual FXS, wideband capable	–140 V	0 to 70 °C
Si32261-C-GM	Dual FXS, wideband capable	–140 V	–40 to 85 °C
***Note:** Adding the suffix "R" to the part number (e.g., Si32261-C-FMR) denotes tape and ree			

Package Information 60-pin QFN



	MM		
	Min	Typ	Max
A	0.60	0.65	0.70
b	0.20	0.25	0.30
c	0.25	0.30	0.35
D		8.00 BSC	
D2	6.35	6.40	6.45
D3		7.50 BSC	
e		0.50 BSC	
E		8.00 BSC	
E2	6.35	6.40	6.45
E3		7.50 BSC	
E4	2.46	2.51	2.56
E5	3.34	3.39	3.44
L	0.35	0.40	0.45
L1	0.05	0.10	0.15
aaa	—	—	0.15
bbb	—	—	0.15
ccc	—	—	0.10
ddd	—	—	0.10

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