Le9662
Dual Subscriber Line Interface Circuit
miSLIC™ Series
Product Brief

Document ID# 147600 Version 2 October 2013

Features

- **Economical, fifth-generation line interface solution for VoIP processors and SoCs**
- **Dual Channel Architecture**
- **Single port 4-wire interface control (ZSI)**
  - Compatible with numerous VoIP processors and SoC solutions
  - Less expensive isolation than multi-port control
  - Simplifies board routing
- **VoicePath SDK and VP-API-II Software available to implement FXS functions**
- **VeriVoice Professional Test Suite Software**
  - Comprehensive subscriber loop testing, including *Telcordia GR-909-CORE / TIA-1063* diagnostic testing
  - Industry leading advanced test software
- **VeriVoice Manufacturing Test Package (VVMT)**
  - Facilitates factory testing and calibration of assembled boards
- **Low cost, Energy Efficient Shared Switching Regulator Architectures**
  - Dual Output power supplies
  - Integrated battery switches
  - Up to 70 V_{RMS} open circuit ringing with 5 REN load
- **Low cost, 2-Layer PCB Reference Designs**
- **Complete Wideband BORSCHT functionality**
- **Worldwide Programmability**
- **Per channel Narrowband or Wideband operation**

Applications

- **DSL Residential Gateways and Integrated Access Devices (IADs)**
- **Cable Embedded Multimedia Terminal Adapters (eMTAs)**
- **PON Single Family Units (SFU)**
- **Fiber-to-the-premise (FTTX) solutions**

Ordering Information

Device OPN	Device Type	Package	Packing
Le9662WQCT	SLIC, BBABS/FBABS	56-pin QFN	Tape&Reel
Le9662WQC	SLIC, BBABS/FBABS	56-pin QFN	Tray

These Green packages meet RoHS Directive 2002/95/EC of the European Council to minimize the environmental impact of electrical equipment.

Description

The miSLIC™ Line Circuits together with a VoIP processor or SoC, provides an economical turn-key solution for derived voice applications. The miSLIC devices are controlled by a VoIP processor or SoC through a simple, single serial interface.

The dual channel Le9662 miSLIC device uses energy efficient shared power supply topologies for reduced BOM cost. The Le9662 can be configured for patent-pending shared Buck-Boost Automatic Battery Switching (BBABS) or for shared Flyback ABS (FBABS) operation. Ringing and system power management are supported to limit the peak power requirements of each telephone line FXS port. The dual channel Le9662 features wideband clarity and complete BORSCHT functionality.

Manufacturing self test and subscriber line diagnostics are available features. All AC, DC, and power parameters are programmable making the Le9662 device suitable for any short loop application requiring SLIC functionality.

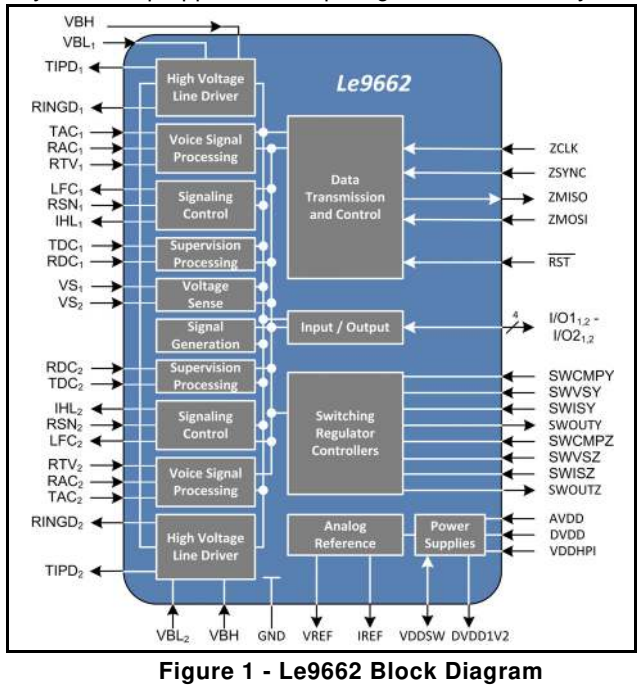


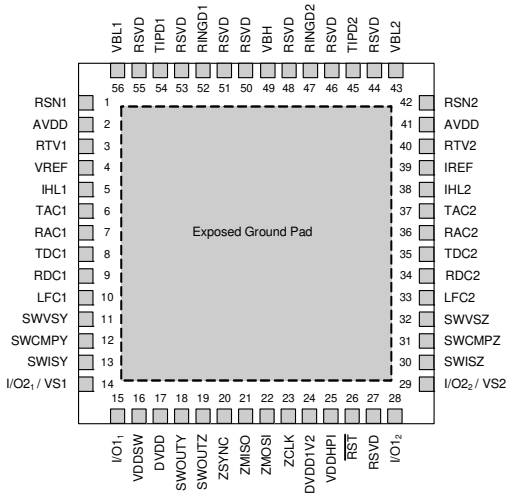
Figure 1 - Le9662 Block Diagram

Selected Electrical Specifications

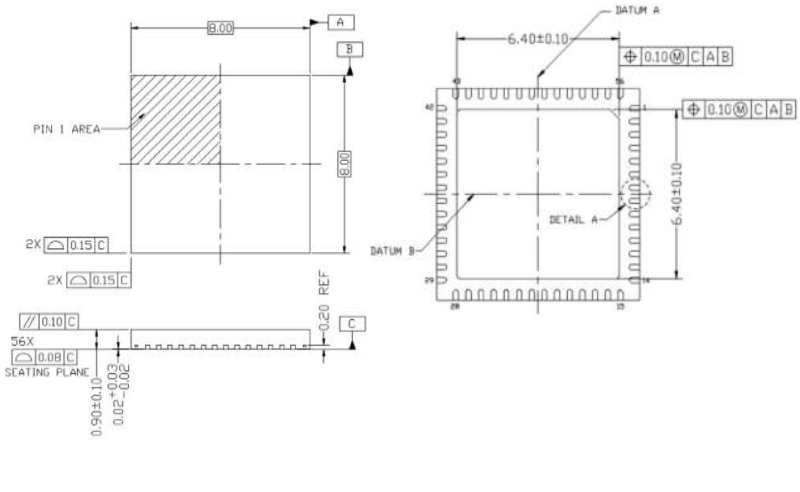
Description	Symbol	Test Conditions	Min	Typ	Max	Unit
Ambient Temperature, under Bias	T_A		-40		+85	°C
Digital and Analog Supply Voltages	DVDD, AVDD		3.135	3.3	3.465	V_{DC}
Operating Limits: BBABS operation VBH VBL FBABS operation VBH (both lines active VBL), VBL < |-50| V VBH (all other states) VBL (in active states)		 Off-Hook Off-Hook	 -(VSW + (2 * |VBL|) – 2V) -40 V_{DC} to -25 V_{DC} -150 V_{DC} to -(VOC + 7.0) V_{DC} -120 V_{DC} to -(VOC + 7.0) V_{DC} VBH to -20 V_{DC}			V_{DC}
Line Current: BBABS operation FBABS operation	ILA		18 18	25 25	30 45	mA
Ringing Voltage: BBABS operation FBABS operation	V_{RING}	5REN		50	60 70	V_{RMS}
Two-Wire Return Loss	R_L	200 to 3400 Hz		30		dB
Longitudinal Balance		1 kHz		58		dB
Device Power Dissipation, Continuous	$P_{D(max)}$	T_A = 85°C		2		W
Junction to Ambient Thermal Resistance	θ_{JA}			27		°C/W

Device Power Consumption (Typical)	Symbol	Test Conditions	BBABS	FBABS	Power	Unit
Shutdown	P_D	Switchers off	5	5	Per Channel	mW
Disconnect			25	25		
Low Power Idle Mode		On-Hook	47	52		
Idle		On-Hook	99	116		
Active		Off-Hook, 300 Ω, ILA = 25 mA	520	658		
1 line Active, 1 line Ringing		50 V_{RMS}, 5REN	1523	1506	Both Channels	

Device Pinout



Package Drawings



Related Collateral

- *Le9662 Shared Battery Dual miSLIC™ Line Circuit Preliminary Data Sheet*, Document ID# 146852
- *Le9672 Tracking Battery Dual miSLIC™ Line Circuit Preliminary Data Sheet*, Document ID# 146853