#### **Features**

- Next Generation ZL880 VoicePort Family with **Enhanced Features and Performance** 
  - Same API interface as the VE880 Series
  - Lowest Bill of Materials (BOM) cost for 2 to 8 channel applications
- **Complete BORSCHT Functions for Two FXS** Channels in a Single 64-Pin 9x9 QFN Package
  - Battery feed, Over-voltage support, integrated Ringing, line Supervision, Codec, Hybrid (2W/4W), and Test

### **Integrated Power Management**

- Single power supply using integrated battery switches for lowest BOM cost
- Low Power Idle Mode with 60 mW consumption
- Internal FET drive circuit for lower BOM count
- Integrated real-time power monitoring tool

#### Ringing

- 5 REN with pin for pin compatible 100-V (ZL88601) and 120-V (ZL88602) devices
- Internally generated sinusoidal or trapezoidal ringing with programmable DC offset

### **Worldwide Programmability**

- Input impedance, balance impedance, gain
- DC feed voltage and current limit
- Ringing frequency, voltage and current limit
- G.711 µ-law, A-law, or 16 bit linear coding
- Call progress tone and Caller ID generation
- Sample coefficients for more than 70 countries

#### Pin-Selectable PCM/MPI or ZSI Interfaces

- SPI Mode 0 and 3 support and no inter byte CS off time. Also supports legacy MPI Interface.
- ZSI Mode for a smaller number of interface signals to the host and less expensive isolation
- VoicePath SDK and VP-API-II Software Available to Implement FXS Functions
- VeriVoice Software Suites Available for Manufacturing and Subscriber Loop Testing
  - Utilizes integrated test tool box

142176 June 2012

Ordering Information										
Device OPN <sup>1</sup>	<b>Device Type</b>	Package	Packing							
ZL88601LDF1	100V-ABS	64-pin QFN (9x9)	Tape & Reel							
ZL88601LDG1	100V-ABS	64-pin QFN (9x9)	Tray							
ZL88602LDF1	120V-ABS	64-pin QFN (9x9)	Tape & Reel							
ZL88602LDG1	120V-ABS	64-pin QFN (9x9)	Tray							

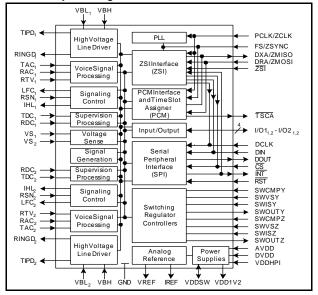
The Green package meets RoHS Directive 2002/95/EC of the European Council to minimize the environmental impact of electrical equipment.

## Applications

- **DSL Residential Gateways and Integrated** Access Devices (IADs)
- Cable eMTAs
- **PON Single Family Units (SFUs)**
- Fiber to the Premise/Home/Building (FTTx) **Multiple Dwelling Units (MDUs)**

# Description

Microsemi<sup>®</sup> ZL88601/602 Dual Channel The Battery Switching Wideband Automatic (ABS) VoicePort Device provides complete BORSCHT functions for two telephone line FXS ports. This device is part of the new ZL880 Series featuring enhanced functionality, lower BOM cost, and greater power efficiency, while maintaining software compatibility with the industry leading VE880 Series.



VoicePort Device Block Diagram

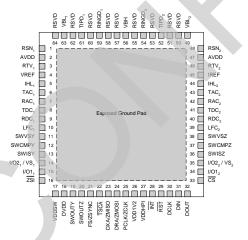


# **Selected Electrical Specifications**

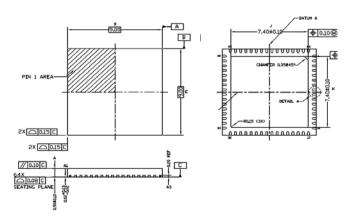
Description	Symbol	Test Condition	Min.	Тур.	Max.	Unit
Ambient Temperature, under Bias	T <sub>A</sub>		-40°C		+85	°C
Digital and Analog Supply Voltages	DVDD,AVDD		3.135	3.3	3.465	V <sub>DC</sub>
Host Port Interface Supply Voltage	VDDHPI		1.71	3.3	DVDD	$V_{DC}$
High Battery Voltage		1				
For the ZL88601	VBH		-15 -15	-81	-100	V <sub>DC</sub>
For the ZL88602				-105	-120	
Line Current	I <sub>LA</sub>		18	25	45	mA
Ringing Voltage						
For the ZL88601	VRING	ABS Flyback, 5 REN			57	57 V <sub>RMS</sub>
For the ZL88602					67	
Two-Wire Return Loss	$R_L$	200 to 3400 Hz		30		dB
Longitudinal Balance		1 kHz		58		dB
Device Power Consumption (Per Channel)	P <sub>D</sub>	$VBH = -81 V_{DC}$ , $VBL = -27 V_{DC}$				mW
Disconnect		Switcher on, no DC feed to line	_	31		
Low Power Idle (On-Hook)		Switcher on, limited feed to line		60		
Idle (On-Hook)		Normal feed to line		128		
Talk (Off-Hook)		$300 \Omega$ , ILA = -25 mA, VBL feed		650		
Ringing		50 V <sub>RMS</sub> into 3 REN		625		
Maximum Device Power Dissipation Capability, Continuous	P <sub>D(max)</sub>	T <sub>A</sub> = 85°C		2.1		W
Junction to Ambient Thermal Resistance	$\theta_{JA}$			26		°C/W

Note: Refer to the ZL88601/602 Data Sheet for test circuits and additional details

## **Device Pinout**



# **Package Drawings**



### **Related Collateral**

- ZL88601/602 Dual Channel Wideband Auto Battery Switching (ABS) VoicePort Device ZL880 Series Data Sheet, Document ID# 141956
- ZL880 VP-API-II Reference Guide, Document ID#: 143271