

### **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

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Ordering Information									
Device OPN 1	<b>Device Type</b>	Package	Packing						
ZL88601LDF1 ZL88601LDG1 ZL88602LDF1	100V-ABS	64-pin QFN (9x9) 64-pin QFN (9x9)	Tape & Reel Tray Tape & Reel						
ZL88602LDG1	120V-ABS	64-pin QFN (9x9) 64-pin QFN (9x9)	Tray						
1. The Green package meets RoHS Directive 2002/95/EC of the									
European Council to minimize the environmental impact of									

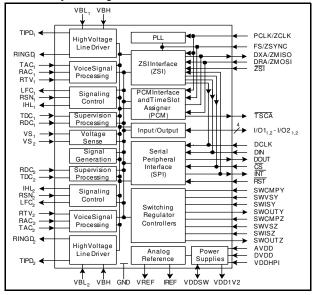
# **Applications**

electrical equipment.

- 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**

The Microsemi<sup>®</sup> ZL88601/602 Dual Channel Wideband Automatic Battery Switching (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

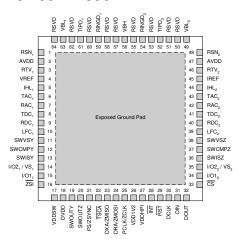


# **Selected Electrical Specifications**

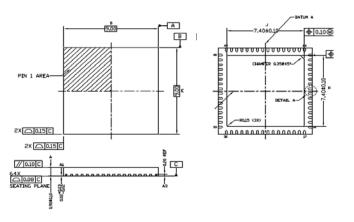
Description	Symbol	Test Condition	Min.	Тур.	Max.	Unit
Ambient Temperature, under Bias	T <sub>A</sub>		-40°C		+85	°C
Digital and Analog Supply Voltages	DVDD,AVDD		3.135	3.3	3.465	$V_{DC}$
Host Port Interface Supply Voltage	VDDHPI		1.71	3.3	DVDD	$V_{DC}$
High Battery Voltage		1		11	II.	11
For the ZL88601	VBH		-15	-81	-100	-100 -120 V <sub>DC</sub>
For the ZL88602			-15	-15 -105	-120	
Line Current	I <sub>LA</sub>		18	25	45	mA
Ringing Voltage			"			
For the ZL88601	VRING	ABS Flyback, 5 REN			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)		VBH = -81 V <sub>DC</sub> , VBL = -27 V <sub>DC</sub>				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)	$ P_{D}$	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