Small Appliance Solution

Z8 Encore!® 8-Bit Microcontrollers

zilog®

SMALL APPLIANCE

F0830 Series MCU

MOTOR TYPES COMMONLY USED

- Universal
- AC Induction
- Brushed DC
- Brushless DC (BLDC)

FEATURES THAT SEPARATE US FROM THE REST

- 8-channel 11.9µs A/D Converter allows accurate current, back EMF and voltage sampling
- Comparator with programmable shutdown for over-current protection
- 2-phase PWM module optimized for motor control applications
- Highly accurate Internal Precision Oscillator

THE Z8 ENCORE!® F0830 SERIES

You've set your goals high and your challenge is to bring the best looking and feature rich small appliance to the market fast without compromising its low cost. Today's consumers expect the best and we help you to give them the best with our Z8 Encore!® family of microcontrollers. We've integrated more features on-chip and thought about the small appliance size. In doing so, we've created a microcontroller that is power efficient and robust enough to be used in harsh environments. Now you are able to add more differentiating features with ease and get your design to market faster at low cost, and these are all the goals that we have set for ourselves.

BLOCK DIAGRAM

Up to 12 KB Flash	256 B RAM	Up to 8 Channels 10-bit ADC
Two 16-bit Timers/PWM	**20 MHz eZ8™ CPU**	POR/VBO & Reset Control
Up to 64 B NVDS	On-Chip Debugger	Crystal/RC Oscillator
Watchdog Timer with RC Oscillator	Analog Comparator	Internal Precision Oscillator
17 to 25 General-Purpose I/O Pins		

DESIGN CHALLENGES

Fast Sampling of Signals

The F0830's high speed ADC provides an 11.9µs conversion time, ranking it as one of the best-in-class for fast data sampling applications.

Small Size

Our high performance, feature rich MCU is available in 28 or 20-pin QFN packages requiring only 5x5mm2 of your PCB space.

Design Robustness

In small appliance designs, motor noise can interfere with MCU's operation. With our IPO and noise robustness, our Z8 Encore!® MCU can operate even in the worst of conditions.

Low System Cost

Highly integrated microcontroller features, such as the high speed ADC and comparator, give you the ability to reduce your overall system cost.

Fast Time-to-Market

Zilog provides a complete solution for your small appliance motor control design backed by reference designs, software libraries, and application notes to speed you through the design process.

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FEATURES

- 20 MHz eZ8™ CPU core
- Up to 12 KB Flash memory with in-cricuit programming capability
- Up to 256 B of register RAM
- Up to 64 B of NVDS (on 8 KB devices and below)
- Up to eight channels 10-bit analog-to-digital converter (ADC)
- On-chip analog comparator
- Two 16-bit timers with capture, compare, and PWM capabilities
- Watchdog timer (WDT) with internal RC oscillator
- 17-25 I/O pins depending upon package
- Up to 18 interrupts with configurable priority
- On-Chip debugger
- Voltage brown-out protection (VBO)
- Power on reset (POR)
- Internal Precision Oscillator (5.53 Mhz/ 32 KHz) w/±4% accuracy over full voltage/ temperature range
- Crystal oscillator with three power settings and external RC network option
- 2.7 V-3.6 V operating voltage with 5 V- tolerant digital inputs
- 20- and 28-pin packages
- 0 °C to + 70 °C extended temperature operating ranges

REFERENCE TOOLS

- Reference designs
- Application notes

SILICON ORDERING INFORMATION

Device	Flash	NVDS	ADC	Package Types Supported
Z8F1232XX	12 KB	No	Yes	20-Pin SOIC, PDIP, QFN, or SSOP 28-Pin SOIC, PDIP, QFN, or SSOP
Z8F1233XX	12 KB	No	No	20-Pin SOIC, PDIP, QFN, or SSOP 28-Pin SOIC, PDIP, QFN, or SSOP
Z8F0830XX	8 KB	Yes	Yes	20-Pin SOIC, PDIP, QFN, or SSOP 28-Pin SOIC, PDIP, QFN, or SSOP
Z8F0831XX	8 KB	Yes	No	20-Pin SOIC, PDIP, QFN, or SSOP 28-Pin SOIC, PDIP, QFN, or SSOP
Z8F0430XX	4 KB	Yes	Yes	20-Pin SOIC, PDIP, QFN, or SSOP 28-Pin SOIC, PDIP, QFN, or SSOP
Z8F0431XX	4 KB	Yes	No	20-Pin SOIC, PDIP, QFN, or SSOP 28-Pin SOIC, PDIP, QFN, or SSOP
Z8F0230XX	2 KB	Yes	Yes	20-Pin SOIC, PDIP, QFN, or SSOP 28-Pin SOIC, PDIP, QFN, or SSOP
Z8F0231XX	2 KB	Yes	No	20-Pin SOIC, PDIP, QFN, or SSOP 28-Pin SOIC, PDIP, QFN, or SSOP
Z8F0130XX	1 KB	Yes	Yes	20-Pin SOIC, PDIP, QFN, or SSOP 28-Pin SOIC, PDIP, QFN, or SSOP
Z8F0131XX	1 KB	Yes	No	20-Pin SOIC, PDIP, QFN, or SSOP 28-Pin SOIC, PDIP, QFN, or SSOP

DEVELOPMENT TOOL ORDERING INFORMATION

ZUSBSC00100ZACG : USB Smart Cable Accessory Kit
ZUSBOPTSC01ZACG : Opto-Isolated USB Smart Cable

FOR MORE INFORMATION

Visit us at www.zilog.com.

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