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### What is "[Embedded - Microcontrollers](#)"?

"[Embedded - Microcontrollers](#)" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

### Applications of "[Embedded - Microcontrollers](#)"

#### Details

Product Status	Obsolete
Core Processor	eZ8
Core Size	8-Bit
Speed	20MHz
Connectivity	IrDA, UART/USART
Peripherals	Brown-out Detect/Reset, LED, LVD, POR, PWM, WDT
Number of I/O	25
Program Memory Size	8KB (8K x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	1K x 8
Voltage - Supply (Vcc/Vdd)	2.7V ~ 3.6V
Data Converters	-
Oscillator Type	Internal
Operating Temperature	0°C ~ 70°C (TA)
Mounting Type	Through Hole
Package / Case	28-DIP (0.600", 15.24mm)
Supplier Device Package	-
Purchase URL	<a href="https://www.e-xfl.com/product-detail/zilog/z8f081apj020sg">https://www.e-xfl.com/product-detail/zilog/z8f081apj020sg</a>

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 **Warning:** DO NOT USE THIS PRODUCT IN LIFE SUPPORT SYSTEMS.

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Table 139. Analog-to-Digital Converter Electrical Characteristics and Timing (Continued)

$V_{DD} = 3.0\text{ V to }3.6\text{ V}$ $T_A = 0^{\circ}\text{C to }+70^{\circ}\text{C}$ (unless otherwise stated)						
Symbol	Parameter	Minimum	Typical	Maximum	Units	Conditions
	Continuous Conversion Time	–	256	–	Sys-tem clock cycles	All measurements but temperature sensor
			512			measurement
	Signal Input Bandwidth	–	10		kHz	As defined by -3 dB point
$R_S$	Analog Source Impedance <sup>4</sup>	–	–	10	k $\Omega$	In unbuffered mode
				500	k $\Omega$	In buffered modes
$Z_{in}$	Input Impedance	–	150		k $\Omega$	In unbuffered mode at 20MHz <sup>5</sup>
		10	–		M $\Omega$	In buffered modes
$V_{in}$	Input Voltage Range	0		$V_{DD}$	V	Unbuffered Mode
		0.3		$V_{DD}-1.1$	V	Buffered Modes These values define the range over which the ADC performs within spec; exceeding these values does not cause damage or instability; see DC Characteristics for absolute pin voltage limits.

Notes:

1. Analog source impedance affects the ADC offset voltage (because of pin leakage) and input settling time.
2. Devices are factory calibrated at  $V_{DD} = 3.3\text{ V}$  and  $T_A = +30^{\circ}\text{C}$ , so the ADC is maximally accurate under these conditions.
3. LSBs are defined assuming 10-bit resolution.
4. This is the maximum recommended resistance seen by the ADC input pin.
5. The input impedance is inversely proportional to the system clock frequency.

## Packaging

Zilog's Product Line of MCUs includes the Z8F011A, Z8F012A, Z8F021A, Z8F022A, Z8F041A, Z8F042A, Z8F081A and Z8F082A devices, which are available in the following packages:

- 8-pin Plastic Dual-Inline Package (PDIP)
- 8-Pin Quad Flat No-Lead Package (QFN)/MLF-S<sup>1</sup>
- 8-pin Small Outline Integrated Circuit Package (SOIC)
- 20-pin Small Outline Integrated Circuit Package (SOIC)
- 20-pin Small Shrink Outline Package (SSOP)
- 20-pin Plastic Dual-Inline Package (PDIP)
- 28-pin Small Outline Integrated Circuit Package (SOIC)
- 28-pin Small Shrink Outline Package (SSOP)
- 28-pin Plastic Dual-Inline Package (PDIP)

Current diagrams for each of these packages are published in Zilog's Packaging Product Specification (PS0072), which is available free for download from the Zilog website.

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1. The footprint of the QFN)/MLF-S package is identical to that of the 8-pin SOIC package, but with a lower profile.

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