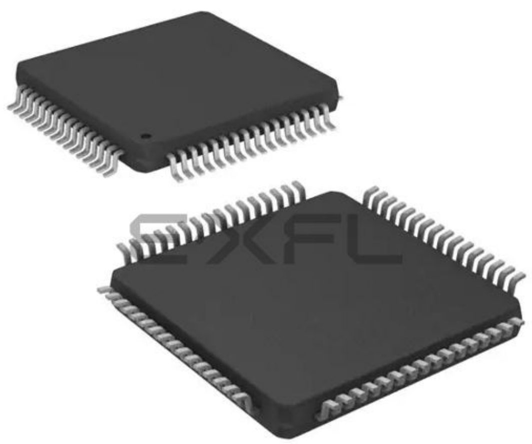
Renesas Electronics America Inc - UPD78F0531AGA-HAB-AX Datasheet



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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	Active
Core Processor	78K/0
Core Size	8-Bit
Speed	20MHz
Connectivity	3-Wire SIO, I²C, LINbus, UART/USART
Peripherals	LVD, POR, PWM, WDT
Number of I/O	55
Program Memory Size	16KB (16K x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	768 x 8
Voltage - Supply (Vcc/Vdd)	1.8V ~ 5.5V
Data Converters	A/D 8x10b
Oscillator Type	Internal
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Surface Mount
Package / Case	64-TQFP
Supplier Device Package	-
Purchase URL	https://www.e-xfl.com/product-detail/renesas-electronics-america/upd78f0531aga-hab-ax

(2) Expanded-specification products (μPD78F05xxA and 78F05xxDA) (1/3)

<1> When internal high-speed oscillation clock is used and entry RAM is located outside short direct addressing range

Library Name		Processing Time (μs)			
		Normal Model of C Compiler		Static Model of C Compiler/Assembler	
		Min.	Max.	Min.	Max.
Self programming start library		4.0	4.5	4.0	4.5
Initialize library		1105.9	1106.6	1105.9	1106.6
Mode check library		905.7	906.1	904.9	905.3
Block blank check library		12776.1	12778.3	12770.9	12772.6
Block erase library		26050.4	349971.3	26045.3	349965.6
Word write library		1180.1 + 203 × w	1184.3 + 2241 × w	1172.9 + 203 × w	1176.3 + 2241 × w
Block verify library		25337.9	25340.2	25332.8	25334.5
Self programming end library		4.0	4.5	4.0	4.5
Get information library	Option value: 03H	1072.9	1075.2	1067.5	1069.1
	Option value: 04H	1060.2	1062.6	1054.8	1056.6
	Option value: 05H	1023.8	1028.2	1018.3	1022.1
Set information library		70265.9	759995.0	70264.9	759994.0
EEPROM write library		1316.8 + 347 × w	1320.9 + 2385 × w	1309.0 + 347 × w	1312.4 + 2385 × w

<2> When internal high-speed oscillation clock is used and entry RAM is located in short direct addressing range

Library Name		Processing Time (μs)			
		Normal Model of C Compiler		Static Model of C Compiler/Assembler	
		Min.	Max.	Min.	Max.
Self programming start library		4.0	4.5	4.0	4.5
Initialize library		449.5	450.2	449.5	450.2
Mode check library		249.3	249.7	248.6	248.9
Block blank check library		12119.7	12121.9	12114.6	12116.3
Block erase library		25344.7	349266.4	25339.6	349260.8
Word write library		445.8 + 203 × w	449.9 + 2241 × w	438.5 + 203 × w	441.9 + 2241 × w
Block verify library		24682.7	24684.9	24677.6	24679.3
Self programming end library		4.0	4.5	4.0	4.5
Get information library	Option value: 03H	417.6	419.8	412.1	413.8
	Option value: 04H	405.0	407.4	399.5	401.3
	Option value: 05H	367.4	371.8	361.9	365.8
Set information library		69569.3	759297.3	69568.3	759296.2
EEPROM write library		795.1 + 347 × w	799.3 + 2385 × w	787.4 + 347 × w	790.8 + 2385 × w

Remarks 1. The above processing times are those when a write start address structure is located in the internal high-speed RAM and during stabilized operation of the internal high-speed oscillator (RSTS = 1).

2. RSTS: Bit 7 of the internal oscillation mode register (RCM)

3. w: Number of words in write data (1 word = 4 bytes)