

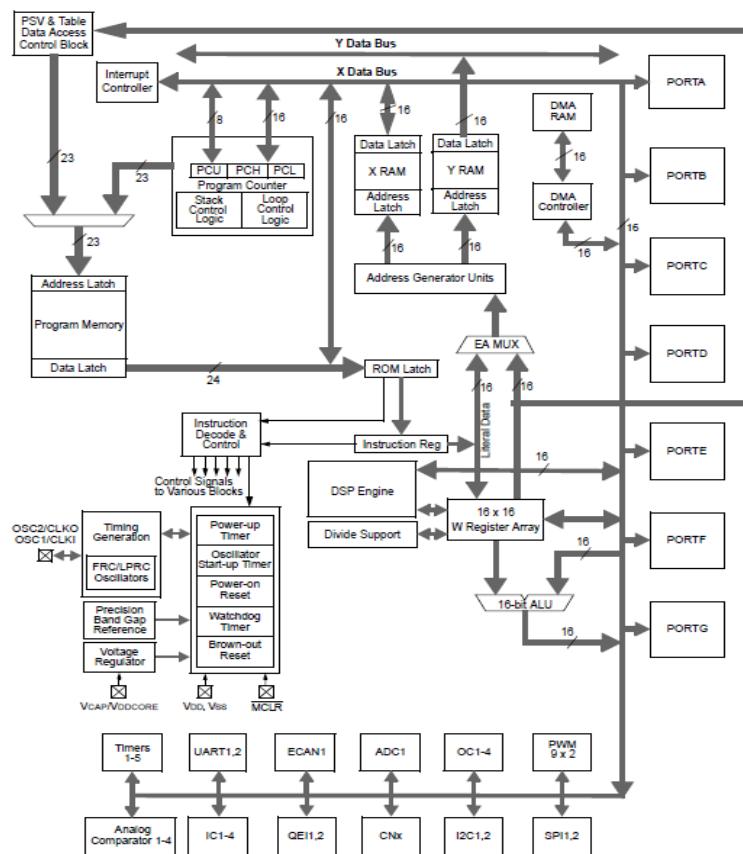


## dsPIC33FJ64GS406 High-Performance, 16-bit Digital Signal Controllers

### General Description:

dsPIC33FJXXGSXXX SMPS & Digital Power Conversion 16-bit Digital Signal Controller. These devices offer features supporting common, multi-loop digital switch-mode power supplies (SMPS) and other digital power-conversion applications such as:

- AC to DC Converters
- DC to DC Converters
- Power Factor Correction (PFC)
- Uninterruptible power supply (UPS)
- Inverters
- Embedded Power-Supply Controllers
- Circuit Breakers, Arc Fault Detection



## Key Features:

- Up to 40 MIPS Operation (at 3.0-3.6V)
- 16 x 16 Fractional/Integer Hardware Multiply, Single Cycle Execution
- Single-Cycle Multiply and Accumulate
- 32-bit by 16-bit Hardware Divider
- C Compiler Optimized Instruction Set System
- Internal oscillator and Phase-Locked Loop (PLL) with 120 MHz VCO
- On-chip LDO Voltage Regulator
- JTAG Boundary Scan and Flash Memory Program Support
- Fail-Safe Clock Monitor – allows safe shutdown if clock fails
- Watchdog Timer with separate RC oscillator Power Managed Modes
- Run, Idle and Sleep modes
- Multiple, Switchable Clock Modes for Optimum Performance and Power Management High-Speed PWM Module Features
- Up to Nine PWM Generators with up to Eighteen Outputs
- Dead Time for Rising and Falling Edges
- Duty Cycle Resolution of 1.04 ns for Dead-Time, Phase Shift, and Frequency
- Supported PWM modes: Standard Edge-Aligned, True Independent Output, Complementary, Center-Aligned, Push-Pull, Multi-Phase, Variable Phase, Fixed Off-Time, Current Reset, and Current-Limit
- PWMxL, PWMxH Output Pin Swapping
- PWM4H, PWM4L Pins Remappable
- On-the-Fly PWM Frequency, Duty Cycle and Phase Shift Changes High-Speed Analog Comparator
- Up to Four Analog Comparators
- 20 ns response time
- 10-bit DAC for each analog comparator
- DACOUT pin to provide DAC output High-Speed 10-Bit ADC
- 10-Bit Resolution
- Up to 24 Input Channels Grouped into Six Conversion Pairs
- 4 Msps or 2 Msps Conversion rate
- Independent Trigger Source Section for each Analog Input Conversion Pair Peripherals
- UART Module with LIN and IrDA® support
- SPI Module with FIFO
- I2C™ Modules with Master and Slave Modes
- ECAN Module
- Up to 4 16-bit Timer Modules
- Up to 4 Input Capture and 4 Output Compare / PWM

## Applications:

- AC-to-DC Converters

- Automotive HID
- Battery Chargers
- DC-to-DC Converters
- Digital Lighting
- Induction Cooking
- LED Ballast
- Renewable Power/Pure Sine Wave Inverters
- Uninterruptible Power Supply (UPS)

## Related Products Information:

Mfr Part #	Farnell #	Newark #	Description
DSPIC33FJ64GS406-I/PT	1823293	08R1551	16 Bit MCU/DSP 40MIPS 64KB FLASH, TRAY, 10x10x1mm, 64 TQFP
DSPIC33FJ64GS610-I/PT	1823294	08R1566	16 Bit MCU/DSP 40MIPS 64KB FLASH 100 ,TRAY, 12x12x1mm, 100 TQFP
DSPIC33FJ32GS610-I/PT	1823202	08R1545	16 Bit MCU/DSP 40MIPS 32KB FLASH, TRAY, 12x12x1mm, 100 TQFP
DSPIC33FJ32GS406-I/PT	1823203	08R1530	16 Bit MCU/DSP 40MIPS 32KB FLASH, TRAY, 10x10x1mm,64 TQFP
DSPIC33FJ32GS606-I/PT	1823204	08R1536	16 Bit MCU/DSP 40MIPS 32KB FLASH, TRAY, 10x10x1mm, 64 TQFP
DSPIC33FJ64GS606-I/PT	1823205	08R1557	16 Bit MCU/DSP 40MIPS 64KB FLASH,TRAY, 10x10x1mm,64 TQFP