W25Q16 & W2Q32

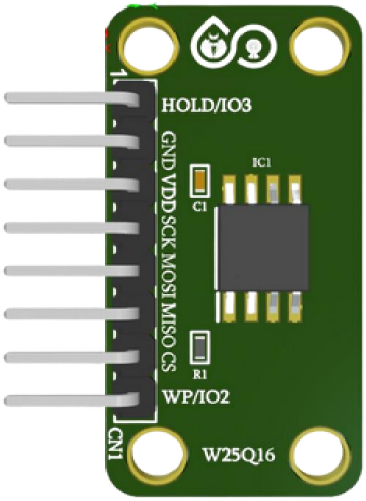
MEMORY SENSOR

GENERAL DESCRIPTION

The W25Q16 (16M-bit), and W25Q32 (32M-bit) Serial Flash memories provide a storage solution for systems with limited space, pins and power. The 25Q series offers flexibility and performance well beyond ordinary Serial Flash devices. They are ideal for code shadowing to RAM, executing code directly from Dual/Quad SPI (XIP) and storing voice, text and data. The devices operate on a single 2.7V to 3.6V power supply with current consumption as low as 5mA active and 1µA forpower-down. All devices are offered in space-saving packages

TECHNICAL SPECIFICATIONS

- Wide Supply Voltage: 1.71 V to 3.6 V
- Independent IO supply: (1.8 V) and supply voltage
- compatible
- Ultra-low-power mode: Consumption down to 2 µA
- I 2C/SPI digital output interface
- Data Output: 16-bit
- 2 independent programmable interrupt generators
- for free-fall and motion detection
- Embedded 32 levels of 16-bit data output FIFO
- 10000 g high shock survivability



CONNECTION

- The serial port can be connected either as SPI or 12C, and it uses the same physical pins for both. To get going, just wire up your choice of interface, supply 3.3v, and ground. Note that you will not need to use all the pins no matter which communication method you choose.

12C Logic Pins

- The I2C Address Jumper -- Bridge to use alternate address 0x18, otherwise leave open for 0x19. Leave open for SPI use.
- The I2C Pull-up Enable -- Closed by default, this connects a pull-up resistor between the I2C lines and VCC. This generally doesn't interfere with SPI operation, but, if less power consumption is required, carefully cut the copper traces.

SPI Pins

To begin SPI communication, the main must send the clock signal and select the subnode by enabling the CS signal. Usually chip select is an active low signal; hence, the main must send a logic 0 on this signal to select the subnode. SPI is a full-duplex interface; both main and subnode can send data at the same time via the MOSI and MISO lines respectively. During SPI communication, the data is simultaneously transmitted (shifted out serially onto the MOSI/SDO bus) and received (the data on the bus (MISO/SDI) is sampled or read in). The serial clock edge synchronizes the shifting and sampling of the data. The SPI interface provides the user with flexibility to select the rising or falling edge of the clock to sample and/or shift the data.

APPLICATIONS

- Motion activated functions
- Free-fall detection
- Display orientation
- Gaming and virtual reality input devices
- Impact recognition and logging
- Vibration monitoring and compensation