8 Mbit Single Operating Voltage Serial Flash Memory With 104 MHz Dual- or 100MHz Quad-Output SPI Bus Interface

PRELIMINARY INFORMATION

FEATURES

• Single Power Supply Operation
- Low voltage range: 2.3 V - 3.6 V

• Memory Organization
- IS25LQ080: 1024K x 8 (8 Mbit)

• Cost Effective Sector/Block Architecture
- 8Mb : Uniform 4KByte sectors / sixteen uniform 64KByte blocks

• Serial Peripheral Interface (SPI) Compatible
- Supports single-, dual- or quad-output
- Supports SPI Modes 0 and 3
- Maximum 33 MHz clock rate for normal read
- Maximum 104 MHz clock rate for fast read
- Maximum 208MHz clock rate equivalent Dual SPI
- Maximum 400MHz clock rate equivalent Quad SPI

• Byte Program Operation
- Typical 10 us/Byte

• Page Program (up to 256 Bytes) Operation
- Maximum 0.7ms per page program

• Sector, Block or Chip Erase Operation
- Sector Erase (4KB)→150ms (Typ)
- Block Erase (64KB)→500ms (Typ)
- Chip Erase →2s (8Mb)

• Low Power Consumption
- Max 12 mA active read current
- Max 20 mA program/erase current
- Max 30 uA standby current

• Hardware Write Protection
- Protect and unprotect the device from write operation by Write Protect (WP#) Pin

• Software Write Protection
- The Block Protect (BP3, BP2, BP1, BP0) bits allow partial or entire memory to be configured as read-only

• High Product Endurance
- Guaranteed 100,000 program/erase cycles per single sector
- Minimum 20 years data retention

• Industrial Standard Pin-out and Package
- 8-pin 208mil SOIC
- 8-pin 150mil SOIC
- 8-pin 150mil VVSOP
- 8-pin WSON (5x6 mm)
- KGD (Call Factory)
- Lead-free (Pb-free) package
- Automotive Temperature Ranges Available

•Additional 256-byte Security information one-time programmable (OTP) area

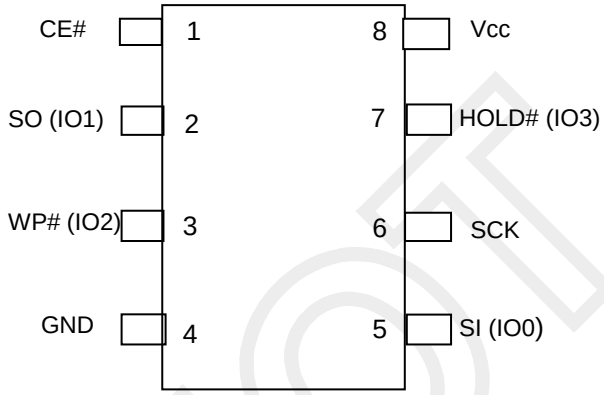
•Special protect function
- **Safe guard function (Appendix 1)**
- **Sector unlock function (Appendix 2)**

GENERAL DESCRIPTION

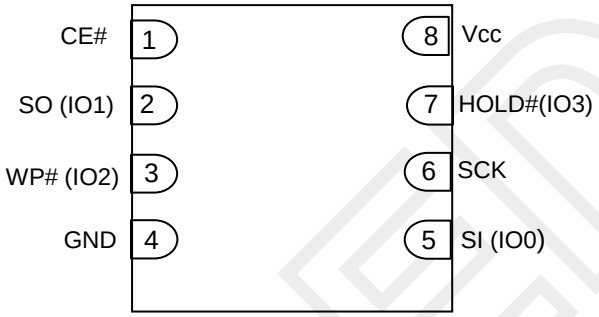
The IS25LQ080 is 8 Mbit Serial Peripheral Interface (SPI) Flash memories, providing single-, dual or quad-output. The devices are designed to support a 33 MHz fclock rate in normal read mode, and 104 MHz in fast read (Quad output is 100MHz), the fastest in the industry. The devices use a single low voltage power supply, ranging from 2.3 Volt to 3.6 Volt, to perform read, erase and program operations. The devices can be programmed in standard EPROM programmers.

The IS25LQ080 are accessed through a 4-wire SPI Interface consisting of Serial Data Input (SI), Serial Data Output (SO), Serial Clock (SCK), and Chip Enable (CE#) pins. The devices support page program mode, where 1 to 256 bytes data can be programmed into the memory in one program operation. These devices are divided into uniform 4 KByte sectors or uniform 64 KByte blocks.

CONNECTION DIAGRAMS



8-Pin SOIC/VVSOP

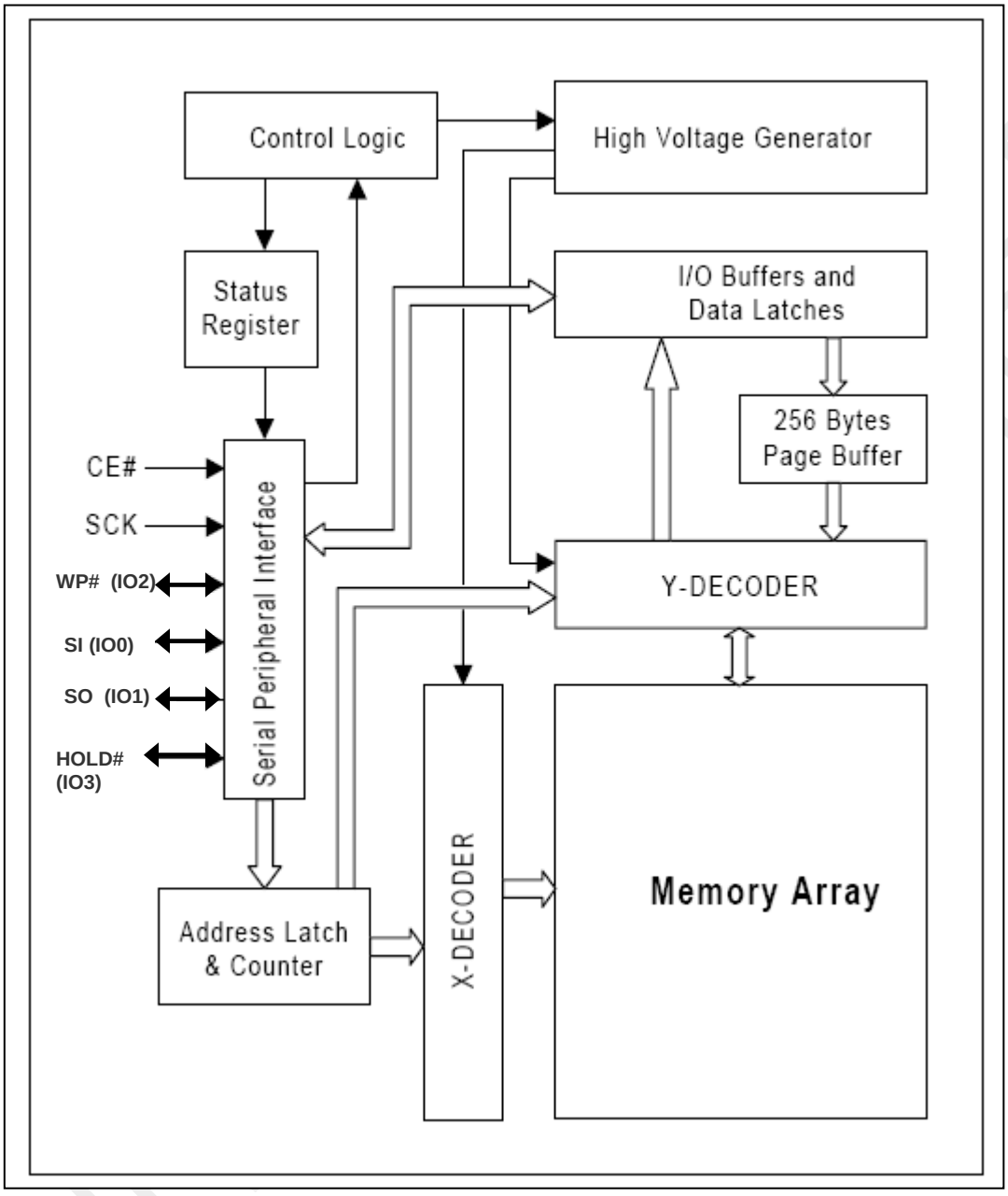


8-pin WSON

PIN DESCRIPTIONS

SYMBOL	TYPE	DESCRIPTION
CE#	INPUT	Chip Enable: CE# low activates the devices internal circuitries for device operation. CE# high deselects the devices and switches into standby mode to reduce the power consumption. When a device is not selected, data will not be accepted via the serial input pin (SI), and the serial output pin (SO) will remain in a high impedance state.
SCK	INPUT	Serial Data Clock
SI (IO0)	INPUT/OUTPUT	Serial Data Input/Output
SO (IO1)	INPUT/OUTPUT	Serial Data Input/Output
GND		Ground
Vcc		Device Power Supply
WP# (IO2)	INPUT/OUTPUT	Write Protect/Serial Data Output: A hardware program/erase protection for all or part of a memory array. When the WP# pin is low, memory array write-protection depends on the setting of BP3, BP2, BP1 and BP0 bits in the Status Register. When the WP# is high, the status register are not write-protected. When the QE bit of is set “1”, the /WP pin (Hardware Write Protect) function is not available since this pin is used for IO2
HOLD# (IO3)	INPUT/OUTPUT	Hold: Pause serial communication by the master device without resetting the serial sequence. When the QE bit of Status Register is set for “1”, the function is Serial Data Input & Output (for 4xI/O read mode)

BLOCK DIAGRAM



ORDERING INFORMATION:

Density	Frequency (MHz)	Order Part Number	Package
8M	104	IS25LQ080-JBLE	8-pin SOIC 208-mil
		IS25LQ080-JKLE	8-pin WSON (5x6 mm)
		IS25LQ080-JNLE	8-pin SOIC 150-mil
		IS25LQ080-JVLE	8-pin VVSOP 150mil
		IS25LQ080-JBLA*	8-pin SOIC 208-mil (Call Factory)
		IS25LQ080-JKLA*	8-pin WSON (5x6 mm) (Call Factory)
		IS25LQ080-JNLA*	8-pin SOIC 150-mil (Call Factory)
		IS25LQ080-JVLA*	8-pin VVSOP 150mil (Call Factory)
		IS25LQ080-JWLE	KGD (Call Factory)

A* = A1, A2, A3 Automotive Temperature Ranges

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ISSI:
IS25LQ080-JNLE