ACE25QC320GF

32M BIT SPI NOR FLASH

Description

The ACE25QC320GF is 32M-bit Serial Peripheral Interface (SPI) Flash memory and support the standard Serial Peripheral Interface (SPI), Dual/Quad I/O SPI as well as 2-clocks instruction cycle Quad Peripheral Interface (QPI): Serial Clock, Chip Select, Serial Data I/O0 (DI), I/O1 (DO), I/O2 (/WP), and I/O3 (/HOLD). SPI clock frequencies of up to 133MHz are supported allowing equivalent clock rates of 266MHz (133MHz x 2) for Dual I/O and 532MHz (133MHzx4) for Quad I/O when using the Fast Read Dual/Quad and QPI instructions. These transfer rates can outperform standard Asynchronous 8 and 16-bit Parallel Flash memories. The Continuous Read Mode allows for efficient memory access with as few as 8-clocks of instruction-overhead to read a 24-bit address, allowing true XIP (execute in place) operation. The device uses a single low voltage power supply, ranging from 1.65 Volt to 2.0 Volt.

Additionally, the device supports JEDEC standard manufacturer and device ID and three 1024bytes Security Registers. In order to meet environmental requirements, ACE Technology offers 8-pin SOP8 150mil/208mil, 8-pad USON8 2*3mm, 8-pad USON8 4*3mm, 8-pad USON8 4*4mm, 8-pad WSON8 5*6mm.

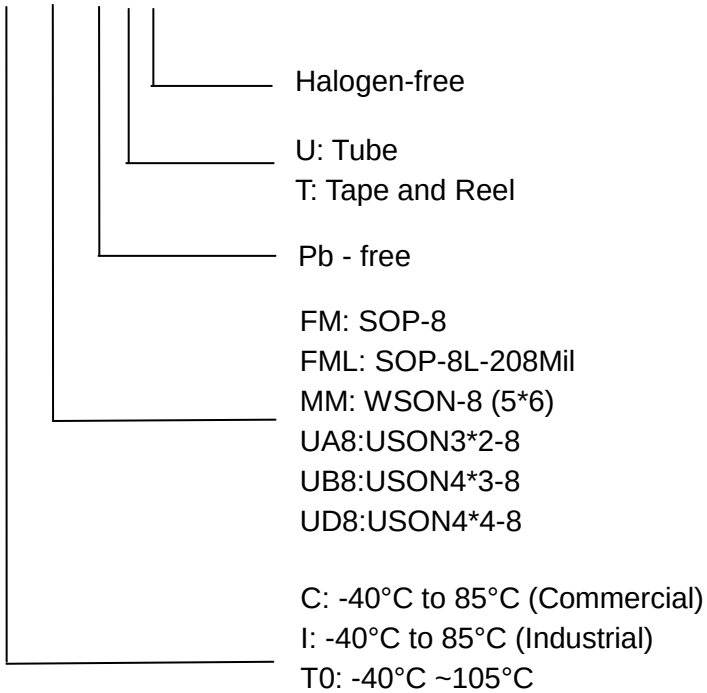
Features

- Serial Peripheral Interface
  - Standard SPI: SCLK, /CS, SI, SO, /WP, /HOLD
  - Dual SPI: SCLK, /CS, IO0, IO1, /WP, /HOLD
  - Quad SPI: SCLK, /CS, IO0, IO1, IO2, IO3
  - QPI: SCLK, /CS, IO0, IO1, IO2, IO3
- Read
  - Normal Read (Serial): 100MHz clock rate
  - Fast Read (Serial): 133MHz clock rate with 30pF load
  - Dual I/O data transfer up to 266Mbits/S
  - Quad I/O data transfer up to 532Mbits/S
  - QPI data transfer up to 532Mbits/S
  - Allows XIP (execute in place) Operation: Continuous Read with 8/16/32/64-byte Wrap
- Program
  - Serial-input Page Program up to 256bytes
  - Program Suspend and Resume
- Erase
  - Block Erase (64/32 KB)
  - Sector Erase (4 KB)
  - Chip Erase
  - Erase Suspend and Resume

- Program/Erase Speed
  Page Program time: 0.25ms typical
  Sector Erase time: 12ms typical
  Block Erase time: 0.04/0.08s typical
  Chip Erase time: 5s typical
- Flexible Architecture
  Sector of 4K-byte
  Block of 32/64K-byte
- Low Power Consumption
  3mA typical active current
  0.4uA typical power down current
- Software/Hardware Write Protection
  3x1024-Byte Security Registers with OTP Locks
  Discoverable Parameters (SFDP) register
  Enable/Disable protection with WP Pin
  Write protect all/portion of memory via software
  Top or Bottom, Sector or Block selection
- Single Supply Voltage
  Full voltage range: 1.65~2.0V
- Temperature Range
  Commercial (-40℃ to 85℃)
  Industrial (-40℃ to 85℃)
  Industrial (-40℃ to 105℃)
  Industrial (-40℃ to 125℃)
- Cycling Endurance/Data Retention
  Typical 100k Program-Erase cycles on any sector
  Typical 20-year data retention

Ordering information

ACE25QC320GF X XXX + X H



Notes

ACE does not assume any responsibility for use as critical components in life support devices or systems without the express written approval of the president and general counsel of ACE Technology Co., LTD. As sued herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and shoes failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.