NSEC Series Embedded Multimedia Card (eMMC)

Overview

Insignis Technology Corporation eMMC products follow the JEDEC eMMC 5.0 standard. It is an ideal universal storage solution for many electronic devices, including embedded, automotive and industrial electronic applications requiring high quality, wide temperature operation and high reliability. eMMC encloses the MLC NAND and eMMC controller inside as one JEDEC standard package, providing a standard interface to the host. The eMMC controller directly manages NAND flash, including ECC, wear-leveling, IOPS optimization and read sensing.

Features

- Packaged NAND flash memory with eMMC 5.0 interface
- Compliant with eMMC Specification Ver. 4.4, 4.41, 4.5, 5.0
- Bus mode
  - High-speed eMMC protocol
  - Clock frequency: 0-200MHz.
  - Ten-wire bus (clock, 1 bit command, 8 bit data bus) and a hardware reset.
- Supports three different data bus widths: 1 bit (default), 4 bits, 8 bits
  - Data transfer rate: up to 52Mbyte/s (using 8 parallel data lines at 52 MHz)
  - Single data rate: up to 200Mbyte/s @ 200MHz
  - Dual data rate: up to 400Mbyte/s @ 200MHz
- Operating voltage range:
  - VCCQ = 1.8 V/3.3 V
  - VCC = 3.3 V
- Error free memory access
  - Internal error correction code (ECC) to protect data communication
  - Internal enhanced data management algorithm
  - Solid protection of sudden power failure safe-update operations for data content
- Security
  - Support secure bad block erase commands
  - Enhanced write protection with permanent and partial protection options
- Quality
  - RoHS compliant
- Supports Field Firmware Update (FFU)
- Enhanced Device Life time
- Support Pre EOL information
- Optimal Size
- Supports Production State Awareness
- Supports Power Off Notification for Sleep
- Supports HS400
- Also available in p-SLC mode
- Temperature range
  - Operation:
    - Automotive: -40℃ to 105℃
    - Industrial: -40℃ to 85℃
    - Extended Test: 0 to 70℃
  - Storage:
    - -40℃ to 125℃
- Component weight:
  - One unit of 4Gb eMMC 100 ball: 0.54g
  - One unit of 4Gb eMMC 153 ball: 0.37g
- JEDEC Standard Package with a 0.5mm pitch.

* Engineering Specifications are available upon request by emailing info@insignis-tech.com

How to Order

BGA100 Package

Operating voltage	Package	Option	NAND Density	Insignis Part Number
VCC=3.3V, VCCQ=1.8V/3.3V	BGA100	Extended Test	4GB	NSEC00K004-ET
			8GB	NSEC00K008-ET
			16GB	NSEC00K016-ET
			32GB	NSEC00K032-ET
			64GB	NSEC00K064-ET
		Industrial Temperature	4GB	NSEC00K004-IT
			8GB	NSEC00K008-IT
			16GB	NSEC00K016-IT
			32GB	NSEC00K032-IT
			64GB	NSEC00K064-IT
		Automotive	4GB	NSEC00K004-AT
			8GB	NSEC00K008-AT
			16GB	NSEC00K016-AT
			32GB	NSEC00K032-AT
			64GB	NSEC00K064-AT

FBGA153 Package

Operating voltage	Package	Option	NAND Density	Insignis Part Number
VCC=3.3V, VCCQ=1.8V/3.3V	FBGA153	Extended Test*	4GB	NSEC53K004-ET*
			8GB	NSEC53K008-ET*
			16GB	NSEC53K016-ET*
			32GB	NSEC53K032-ET*
			64GB	NSEC53K064-ET*
		Industrial Temperature	4GB	NSEC53K004-IT
			8GB	NSEC53K008-IT
			16GB	NSEC53K016-IT
			32GB	NSEC53K032-IT
			64GB	NSEC53K064-IT
		Automotive	4GB	NSEC53K004-AT
			8GB	NSEC53K008-AT
			16GB	NSEC53K016-AT
			32GB	NSEC53K032-AT
			64GB	NSEC53K064-AT

Visit: http://insignis-tech.com/how-to-buy

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* All 153b Extended Test (ET) temperature eMMC is now shipping as Industrial Temperature. Please use "-IT" for any 153b -ET part order at no additional cost to customer.

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