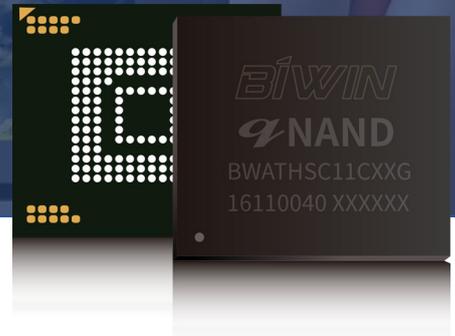


Simplified Datasheet

BWCTASC11P32G eMMC



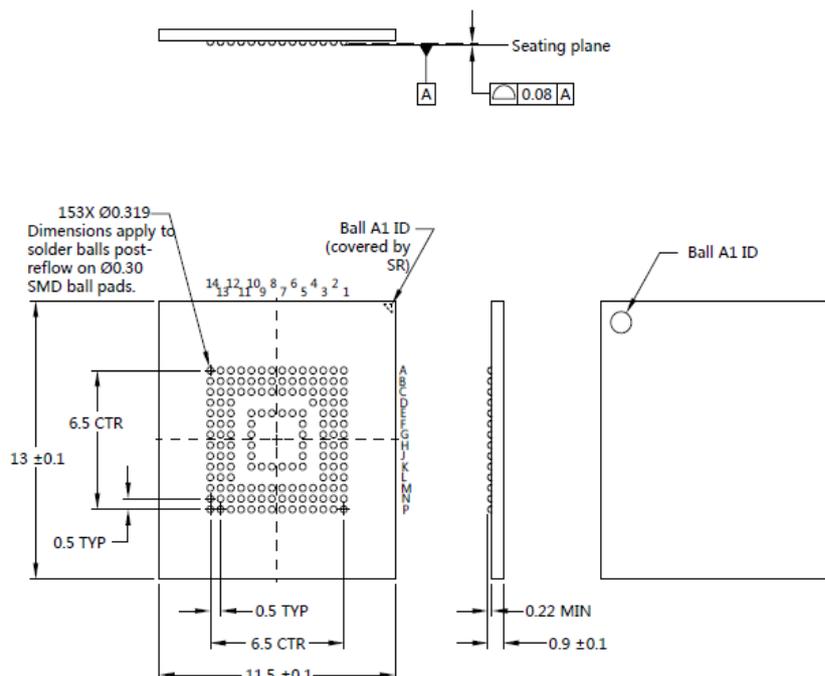
## Introduction

BIWIN qNAND is an embedded flash storage designed in the form of FBGA package, using MMC protocol V5.1 interface. It combines advanced NAND flash and intelligent flash controller in single package, offering excellent performance and high reliability storage solution to embedded applications.

With industry standard eMMC5.1 protocol, BIWIN qNAND is empowered with many new features such as Discard, Boot partitions, Secure Erase, and Trim, which are optimal for code reliability and data storage.

qNAND has an intelligent controller to manage interface protocols, data storage and retrieval, error detect and correction(ECC) algorithms, defect handling and diagnostics, and power management. The firmware inside has functions of Wear Leveling Management, Garbage Collection, and Bad Block Management.

qNAND also has features as small size, low power consumption, non-volatile, wide range of operation temperature, high reliability, which makes qNAND the ideal solution for smart phones, Tablet, digital cameras, PDAs, PMP, GPS, media player and etc.



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# Features

- Dimensions& Package:  
11.5mm x 13mm x 0.9mm      FBGA153ball
- Complies with the eMMC standard JESD84-B51
- 12 signal interface (including CMD, CLK, DS, DAT[7:0], and RST\_n)
- Programmable bus width: 1-bit, 4-bit, and 8-bit
- Support wide range of power supply voltage: 1.2V, 1.8V and 3.3V
- Support normal speed SDR mode and high speed DDR mode
- HS400 and HS200 mode support
- Up to 200MHz clock speed
- MMC Mode Command Class  
Class 0 (basic), Class 2 (block read), Class 4 (block write), Class 5 (erase), Class 6 (write protection), Class 7 (lock/unlock)
- High-speed, Dual Data Rate Boot support
- Supports Boot and Alternative Boot Mode
- Replay Protected Memory Block (RPMB)
- Secure Erase, Secure Trim, and Trim
- Enhanced Partition Attributes
- High Priority Interrupt (HPI)
- Background Operations
- Enhanced Reliable Write
- 32-bit RISC based architecture with advanced mapping technology
- Optimized algorithm for embedded system access
- Dynamic power management technology
- Quick standby, auto-suspend, and sleep operations
- Standby current: <100uA@25°C
- High data transfer speed
- Up to 104MB/s transfer rate(52MHz, DDR mode)
- Up to 400MB/s transfer rate(200MHz, HS400 mode)
- Operating temperature range -20°C----- 85°C
- Storage temperature range -50°C----- 95°C
- Soldering Temperature (10s) 260°C
- Endurance:1500 PROGRAM/ERASE cycles

## Contact us for more information

BIWIN can provide customized service in software, hardware, structure and package according to customer demand. It can be used in miniaturization, video surveillance, data acquisition, cloud storage, automotive electronics.....



Specialized in storage for 23 years and very experienced in the application of FLASH products, BIWIN has two major software and hardware R & D bases in Shenzhen and Taiwan, and master the latest technology and processing. We has set up an IC packaging and testing workshop that meets international professional standards and provides “one-stop” customized services, including IC design, packaging, testing, and assembly. Fully integrated upstream and downstream resources and all-round support services ensure our products and services more cost-effective.

# Specification

Interface	EMMC 5.1— 不支持 ✓ 支持 ◎可选 2018.9.15
eMMC Type	HS400
Capacity	32GB 64GB 128GB
Operatiing voltage	VCC=3.3V ; VCCQ=1.8V
Sequential R/W (MB/sec, max.)*	R: 300MB/s W:240MB/s
Max. Power Consumption	VCC=3.3V(250mA) ; VCCQ=1.8V(250mA)
Thermal Sensor	✓
H/W Write Protect	-
DATA Strong	✓
AES 256-Bit	◎
PLP	◎
QE	◎
Destroy	◎
Dimension (WxLxH)	11.5*13*0.9 mm
Test Environment	Vibration:20G @7~2000Hz ; Shock:1500G @0.5ms Storage Temperature:-20°C~+85°C MTBF:>3 million hours
* Sequential performance based on CystalDiskMark 5.03 with file size 1000MB	

# Ordering Information

Operation Temp.	Standard Grade (-20°C ~+85°C)
32GB	BWCTASC11P32G
64GB	BWCTASC21P64G
128GB	BWCTASC41P128G



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