

# Memoright

## Product Data Sheet

**M1890**

**BGA 153 Balls**

**up to 400 MB/sec Bus Transfer Rate**

**Business Temperature Grade**



## e-MMC 5.1 Embedded Flash Memory – M1890 Series

### 8GB ~ 32GB

#### 1. Features

- ◆ **General Features**
  - Embedded with e-MMC Flash Controller and NAND flash
  - Field Firmware Update Supported
  - Support Sleep Notification in Power Off Notification
  - Device Health Report Supported
  - Secure Removal Type Supported
  - Command Queuing Supported
  - Mechanical design complies with JEDEC® Standard
  - Support data bus widths of 1bit, 4bit, 8bit
- ◆ **Support Speed Mode**
  - SDR52MHz/DDR52MHz/HS200/HS400
- ◆ **Form Factor**
  - e-MMC 5.1 Embedded Flash Memory
  - 8 GB~32 GB(BA type):11.5 mm x 13 mm 1.0 mm
  - BGA 153 Ball
  - Complies with JEDEC® MO-276D Specification
- ◆ **Available Capacities**
  - 8 GB to 32 GB
- ◆ **Voltages**
  - Memory Power (VCC) 3.3V
  - Supported Interface Power (VCCQ) voltage: 3.3V
- ◆ **ECC**
  - Internal Strong Error Correction supported
- ◆ **High Performance**
  - Up to 400 MB/s bus transfer rate
- ◆ **Temperature Ranges**
  - Business Temperature Range: -25°C ~+85°C
  - Storage Temperature Range: - 40°C ~+85°C



## 2. General Description

Memoright M1890 series is an eMMC 5.1 compliance embedded flash memory module that **integrates a slim controller** and NAND flash into a **BGA package** for various consumer electronics applications such as smart phones, Tablet PC, GPS, etc.

Memoright M1890 series provides low power mode to greatly **extend battery lifetime** and to **achieve high performance** for up to 32GB storage capacity that makes it an ideal solution for multimedia handsets. M1890 integrates advanced flash management technology to achieve balance between cost and performance. It supports three clock frequency of **0-200MHz** and also supports for data bus width modes **of 1bit, 4bit and 8bit**. Besides, it **integrates several patented method such as dynamic & static wear-leveling and advance block management** to **achieve highest data reliability and maximized flash life expectancy**.

Memoright M1890's various advantages such as high performance, capacity and reliability make it the best eMMC storage solution for several consumer electronics devices such as mobile PC and personal handheld devices.

### 2.1 Physical Description

The important component of Memoright M1890 embedded Flash Memory integrates a Flash controller and NAND Flash memory modules. The Memoright M1890 e-MMC embedded Flash memory solution is provided in BGA 153 ball package.

### 3. Ordering Information

The following Table 1 lists the part No. for Memoright M1890 series e-MMC.

Table 1: Business temperature product list

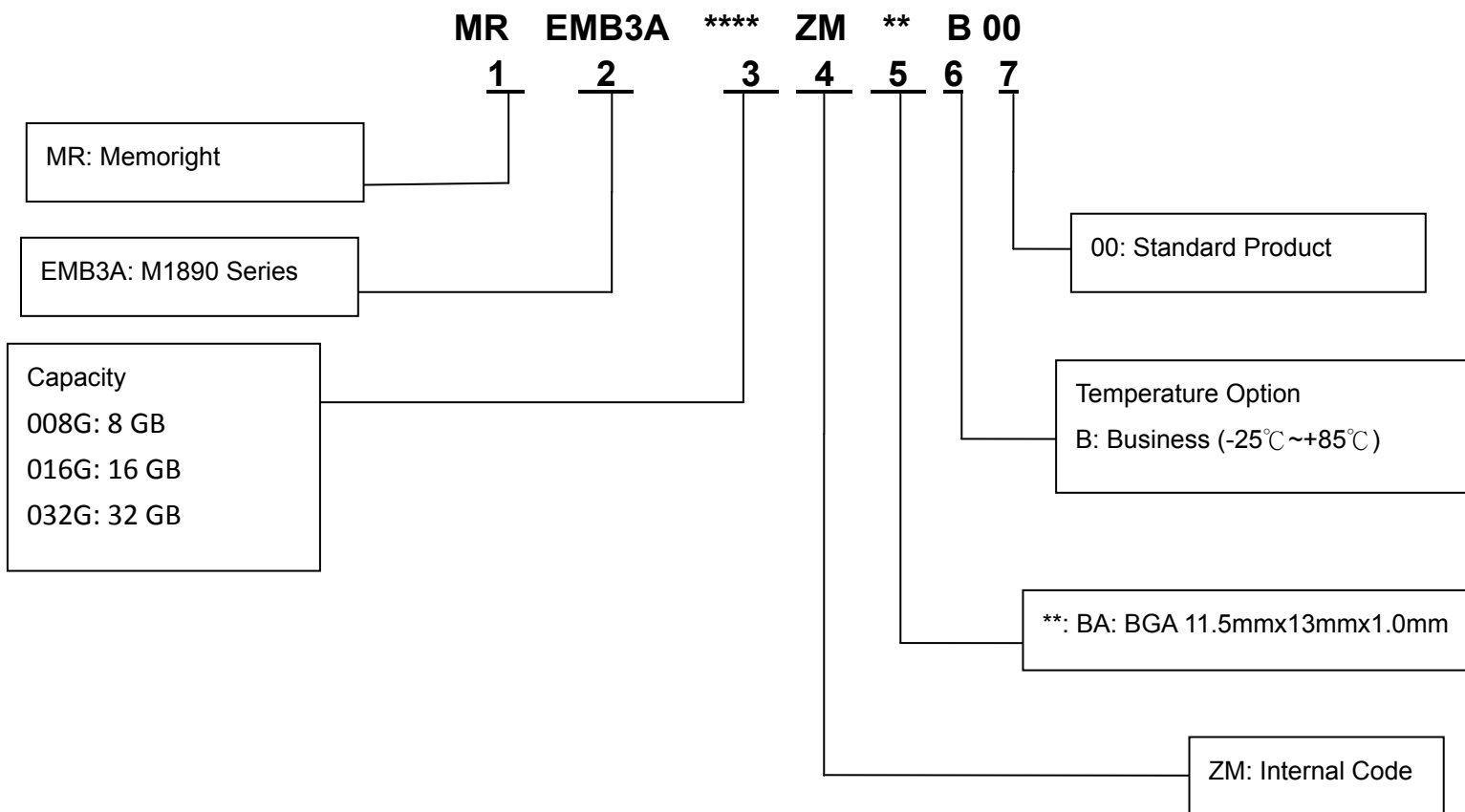
| BGA 153 Ball, 11.5mm x 13mm |          |                    |              |
|-----------------------------|----------|--------------------|--------------|
| Part Number                 | Capacity | Physical Dimension | Form Factor  |
| MREMB3A008GZMBAB00          | 8 GB*    | 11.5x13x1.0mm      | BGA 153 ball |
| MREMB3A016GZMBAB00          | 16 GB*   | 11.5x13x1.0mm      | BGA 153 ball |
| MREMB3A032GZMBAB00          | 32 GB*   | 11.5x13x1.0mm      | BGA 153 ball |

\* 1 GB=1,000,000,000 Bytes

For latest ordering information, please consult Memoright's sales representatives or check on our website:

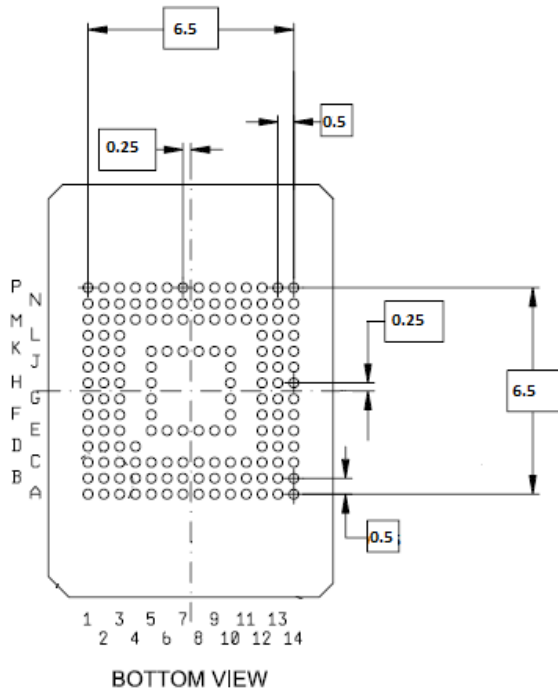
<http://www.memoright.com>

### 4. Part No. Decoder



## 5. Physical Dimension Diagram

### 5.1 Bottom View: BA format



Note: Dimensions are in millimeters

Figure 1: Bottom View: BA format

5.2 Side/Top View: BA format

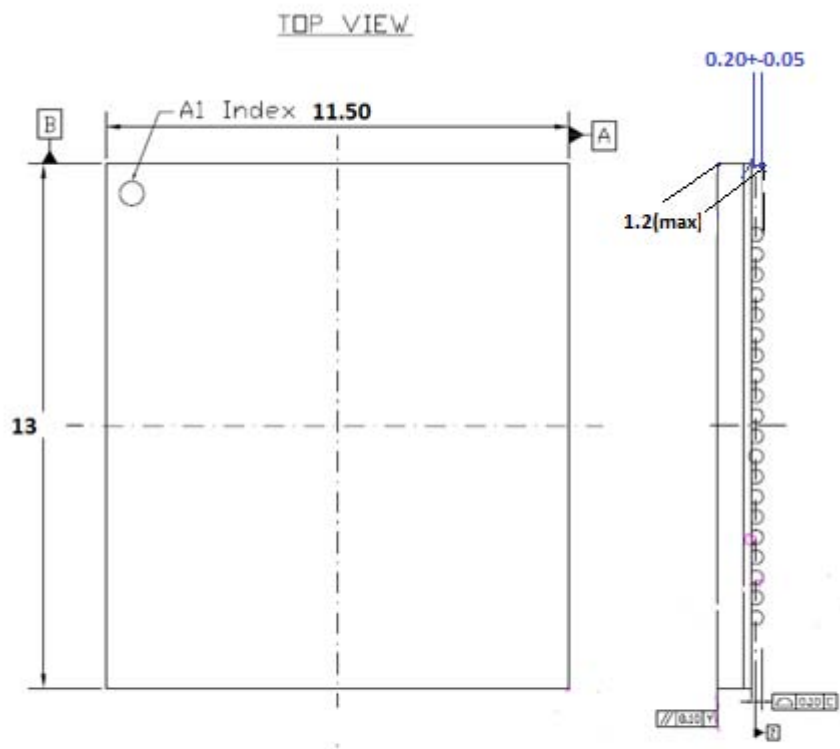


Figure 2 Side/Top View: BA format

| Physical Dimensions |      | Unit |
|---------------------|------|------|
| Length              | 11.5 | mm   |
| Width               | 13   | mm   |
| Thickness           | 1.0  | mm   |

## 6. Contact Information

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