RM3004
64-Kbit Ultra Low Power Non-volatile Serial Memory - SPI Bus

Advance Summary Datasheet

Features

- Memory array: 64Kbit EEPROM-compatible non-volatile serial memory
- Multiple supply voltages for minimum power consumption
  - V_{DDC}: 1.0V +/- 3%
  - V_{DDIO}: 1.65V - 2.75V
  - V_{DDW}: 4.0V +/- 10%
- Serial peripheral interface (SPI) compatible
  -Supports SPI modes 0 and 3
- 1.0 MHz maximum clock rate
- Flexible Programming
  - Byte/Page Program (1 to 32 Bytes)
  - Page size: 32 Bytes
- Ultra Low Energy Word Write
  -32 bit Word Write consuming 50 nJ
- Low power consumption
  -10 µA active Read current @ 500 kbit/s (Typical)
  -10 µA active Write current @ 10 kbit/s (Typical)
  -35 nA Ultra-Deep Power-Down current
- Auto Ultra-Deep Power-Down
  -Device can enter Ultra-Deep Power-Down automatically after finishing a Write operation
- Self-timed write cycles
- Hardware reset
- 8-lead SOIC package
- RoHS-compliant and halogen-free packaging
- Data Retention: 10 years
- Based on Adesto's proprietary CBRAM® technology

Description

The Adesto® RM3004 is a 64Kbit, serial memory device that utilizes Adesto's CBRAM® resistive technology.

The memory device is optimized for low power operation offering lowest available power for data-transfer, power-down, and writing. In order to efficiently optimize power consumption, the device makes use of three supplies, V_{DDW}, V_{DDC}, and V_{DDIO}. Read power is supplied from the V_{DDC} and the device consumes less than10µW at 500Kbit/s. To further reduce data-transfer power, the device supports IO voltages in the range of 1.65 to 2.75V.

The RM3004 is accessed through a 4-wire SPI interface consisting of a Serial Data Input (SDI), Serial Data Output (SDO), Serial Clock (SCK), and Chip Select ($\overline{CS}$). The maximum clock (SCK) frequency in read mode is 1.0MHz.