

Following the acquisition of Adesto Technologies, Dialog Semiconductor offers memory products as part of its product portfolio. The existing content from datasheets, including part numbers and codes should be used. Terms of Purchase are provided on the Dialog website

<https://www.dialog-semiconductor.com/general-terms-and-conditions-purchase>

View our Dialog memory products portfolio:

www.dialog-semiconductor.com/products/memory

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High Temperature Operation (125°C)

This data sheet addendum is to be used in conjunction with the existing AT25DF021A datasheet specifications. The Adesto AT25DF021A 2Mbit Serial Flash devices will operate @ 125°C with the following datasheet caveats. All other parameters will meet the existing datasheet specifications.

The ordering code suffix (CAN# Code) 'HR' or 'HT' must be used to ensure correct operation at this extended temperature range. Adesto will not modify and republish the current datasheet to reflect the CAN# ordering code or the above caveats. The standard [AT25DF021A datasheet](http://www.adestotech.com) is available at <http://www.adestotech.com>.

1. Electrical Specifications

1.1 DC and AC Operating Range

| | | AT25DF021A-xxxHR |
|-----------------------|--|------------------|
| Operating Temperature | | -40°C to +125°C |
| Endurance (Maximum) | | 20,000 Cycles |

1.2 DC, AC, Program and Erase Characteristics

| Symbol | Parameter | 1.7V to 3.6V | | | 2.3V to 3.6V | | | Units |
|------------------------------------|---|--------------|-----|------|--------------|-----|------|-------|
| | | Min | Typ | Max | Min | Typ | Max | |
| I _{UDPD} | Ultra Deep Power-Down Current | | .2 | 1 | | .3 | 1 | μA |
| I _{DPD} | Deep Power-Down Current | | 5 | 40 | | 8 | 40 | μA |
| I _{SB} | Standby Current | | 25 | 65 | | 25 | 65 | μA |
| I _{CC3} ⁽¹⁾⁽²⁾ | Active Current, Program Operation | | 11 | 14.5 | | 12 | 14.5 | mA |
| I _{CC4} ⁽¹⁾⁽²⁾ | Active Current, Erase Operation | | 11 | 14.5 | | 12 | 14.5 | mA |
| f _{SCK} | Maximum Clock Frequency for All Operation (including 0Bh Opcode) | | | 85 | | | 85 | MHz |
| f _{RDLF} | Maximum Clock Frequency for 03h | | | 25 | | | 25 | MHz |
| f _{RDDO} | Maximum Clock Frequency for 3Bh Opcode | | | 40 | | | 40 | MHz |
| t _{PP} | Page Program Time (256 Bytes) | | 2 | 6 | | 2 | 5 | ms |
| t _{PE} | Page Erase Time | | 6 | 20 | | 6 | 20 | ms |
| t _{BP} | Byte Program Time | | 12 | | | 12 | | μs |
| t _{BLKE} | Block Erase Time (4K) | | 45 | 100 | | 45 | 100 | ms |
| | Block Erase Time (32K) | | 300 | 700 | | 300 | 700 | ms |
| | Block Erase Time (64K) | | 500 | 1400 | | 500 | 1400 | ms |
| t _{CHPE} | Chip Erase Time | | 2.5 | 6 | | 2.5 | 6 | s |

1. Typical values measured at 1.8V @ 25°C for the 1.7V to 3.6V range.
2. Typical values measured at 3.0V @ 25°C for the 2.3V to 3.6V range.

2. Ordering Code

2.1 Green Package Options (Pb/Halide-free/RoHS Compliant)

| Ordering Code ⁽¹⁾ | Package | Operating Voltage | Max. Freq. (MHz) | Operation Range |
|---------------------------------|---------|-------------------|------------------|-------------------------------|
| AT25DF021A-SSHNHR-T | 8S1 | 1.7V to 3.6V | 85MHz | Extended (-40°C to +125°C) |
| AT25DF021A-SSHNHR-B | | | | |
| AT25DF021A-XMHNHR-T | 8X | | | |
| AT25DF021A-XMHNHR-B | | | | |
| AT25DF021A-MHNHR-T | 8MA1 | | | |
| AT25DF021A-MHNHR-Y | | | | |
| AT25DF021A-MAHNHR-T | 8MA3 | | | |
| AT25DF021A-DWFHT ⁽²⁾ | DWF | | | |

1. The shipping carrier option code is not marked on the devices.
2. Contact Adesto for mechanical drawing or Die Sales information.

| Package Type | |
|--------------|--|
| 8S1 | 8-lead, 0.150" Wide, Plastic Gull Wing Small Outline Package (JEDEC SOIC) |
| 8X | 8-lead, Thin Shrink Small Outline Package |
| 8MA1 | 8-pad, 5 x 6 x 0.6mm, Thermally Enhanced Plastic Ultra Thin Dual Flat No-lead (UDFN) |
| 8MA3 | 8-pad, 2 x 3 x 0.6mm, Thermally Enhanced Plastic Ultra Thin Dual Flat No Lead Package (UDFN) |
| DWF | Die in Wafer Form |

3. Revision History

| Revision Level – Release Date | History |
|-------------------------------|------------------------------------|
| A – January 2015 | Initial release. |
| B – May 2015 | Updated AC and DC Characteristics. |
| C – May 2015 | Added tray option to 5x6 UDFN. |
| D – November 2015 | Removed preliminary package note. |

