### AT25DF041B



4-Mbit, 1.7V-3.6V Minimum SPI Serial Flash Memory

#### **DATASHEET (ADDENDUM)**

### **High Temperature Operation (125°C)**

This data sheet addendum is to be used in conjunction with the existing AT25DF041B datasheet specifications. The Adesto AT25DF041B 4Mbit 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 <a href="https://www.adestotech.com">AT25DF041B datasheet</a> is available at http://www.adestotech.com.

## 1. Electrical Specifications

### 1.1 DC and AC Operating Range

	AT25DF041B-xxxHR
Operating Temperature	-40°C to +125°C
Endurance (Maximum)	20,000 Cycles

### 1.2 DC, AC, Program and Erase Characteristics

			1.7V to 3.6	1.7V to 3.6V		2.3V to 3.6V		
Symbol	Parameter	Min	Тур	Max	Min	Тур	Max	Units
I <sub>UDPD</sub>	Ultra Deep Power-Down Current		.2	1		.3	1	μA
I <sub>DPD</sub>	Deep Power-Down Current		4.5	40		5	40	μA
I <sub>SB</sub>	Standby Current		25	65		25	65	μA
f <sub>SCK</sub>	Maximum Clock Frequency for All Operation (including 0Bh Opcode)			85			85	MHz
f <sub>RDLF</sub>	Maximum Clock Frequency for 03h			25			25	MHz
f <sub>RDDO</sub>	Maximum Clock Frequency for 3Bh Opcode			40			40	MHz
t <sub>CSH</sub>	Minimum CS - High Time	40				25		ns
t <sub>PP</sub>	Page Program Time (256 Bytes)		2	6		2	4	ms
t <sub>BLKE</sub>	Block Erase Time (4K)		45	100		45	100	ms
	Block Erase Time (32K)		250	800		250	500	ms
	Block Erase Time (64K)		450	1700		450	1000	ms
t <sub>CHPE</sub>	Chip Erase Time		3.6	12		3.6	6.8	S

# 2. Ordering Code

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

Ordering Code <sup>(1)</sup>	Package	Operating Voltage	Max. Freq. (MHz)	Operation Range		
AT25DF041B-SSHNHR-T	8S1		85MHz	Extended (-40°C to +125°C)		
AT25DF041B-SSHNHR-B	001					
AT25DF041B-XMHNHR-T	8X					
AT25DF041B-XMHNHR-B						
AT25DF041B-MAHNHR-T	8MA3			( 10 0 to 1120 0)		
AT25DF041B-DWFHT (2)	DWF					
AT25DF041B-UUNHR-T (3)	8-WLCSP					

<sup>1.</sup> The shipping carrier option code is not marked on the devices.

<sup>3.</sup> Contact Adesto for WLCSP availability and lead time. Handle product in accordance with UV and ESD precautions.

Package Type		
8S1	8-lead, 0.150" Wide, Plastic Gull Wing Small Outline Package (JEDEC SOIC)	
8X	8-lead, Thin Shrink Small Outline Package	
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	
8-WLCSP	8-ball, 3 x 2 x3mm Ball Matrix, 0.35mm Z-Height	

# 3. Revision History

Revision Level – Release Date	History
A – January 2015	Initial release.
B – November 2015	Added WLCSP package. Corrected units specification for $I_{\text{UDPD}}$ and $t_{\text{CSH}}$ . Removed preliminary package note.
C – August 2017	Updated corporate address information.

<sup>2.</sup> Contact Adesto for mechanical drawing or Die Sales information.



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