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# **Adesto Technologies**

## **AT25DF641A & AT25DF641**

### **Comparison**

Adesto Field Application  
<http://www.adestotech.com/>

# AT25DF641A and AT25DF641 - Common Command Set

Command	AT25DF641A opcode	AT25DF641 opcode	Compatible
Read Array	1Bh	1Bh	Yes
Read Array	0Bh	0Bh	Yes
Read Array	03h	03h	Yes
Dual-Output Read Array	3Bh	3Bh	Yes
Block Erase, 4KB	20h	20h	Yes
Block Erase, 32KB	52h	52h	Yes
Block Erase, 64KB	D8h	D8h	Yes
Chip Erase	60h	60h	Yes
Chip Erase	C7h	C7h	Yes
Byte/Page Program	02h	02h	Yes
Dual-Input Byte/Page Program	A2h	A2h	Yes
Program/Erase Suspend	B0h	B0h	Yes
Program/Erase Resume	D0h	D0h	Yes
Write Enable	06h	06h	Yes
Write Disable	04h	04h	Yes
Protect Sector	36h	36h	Yes
Unprotect Sector	39h	39h	Yes
Global Protect/Unprotect	Use Write Status Register Byte 1 Command		Yes
Read Sector Protection Register	3Ch	3Ch	Yes
Sector Lockdown	33h	33h	Yes
Freeze Sector Lockdown State	34h	34h	Yes
Read Sector Lockdown Registers	35h	35h	Yes
Program OTP Security Register	9Bh	9Bh	Yes
Read OTP Security Register	77h	77h	Yes
Read Status Register	05h	05h	Yes
Write Status Register Byte 1	01h	01h	Yes
Write Status Register byte 2	31h	31h	Yes
Reset	F0h	F0h	Yes
Read Manufacturer and Device ID	9Fh	9Fh	Yes
Deep Power-Down	B9h	B9h	Yes
Resume from Deep Power-Down	ABh	ABh	Yes


# AT25DF641A and AT25DF641 Technology Comparison

## AT25DF641: Single Bit per cell

Data Modification possible at Bit level

Example: 0xFF => 0xFE => 0xFC (this is possible)

0xFF: 1111 1111  
0xFE: 1111 1110  
0xFC: 1111 1100




## AT25DF641A: Multi-Bit per cell

Data Modification only at byte level

Example: 0xFF => 0xFE => 0xFF => 0xFC

0xFF: 1111 1111  
0xFE: 1111 1110  
0xFF: 1111 1111  
0xFC: 1111 1100



Additional Erase Step is needed

[AT25DF641A Datasheet](#)

# Program, Erase Time, and ID comparison

Command	AT25DF641A opcode	AT25DF641 opcode	Compatible
Page Program Time	6msec max	3msec max	No
Block Erase, 4KB	200msec max	200msec max	yes
Block Erase, 32KB	600msec max	600msec max	yes
Block Erase, 64KB	1100msec max	950msec max	No
Chip Erase	150sec max	112 sec max	No
Manufacture and Product ID	1F 48 00 01 00	1F 48 00 00	No
Status Register	2 bytes	2 bytes	Yes

# Summary

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## Similarities:

- Command Set – Both are 1x and 2x SPI
- Memory Partitions: Page, Block, Sector size

## Differences:

- AT25DF641: single bit per cell
- AT25DF641A: multi-bits per cell
- Program, Erase Time
- Manufacturer ID