Flash memory for PC and server BIOS

Cross-reference guide

STMicroelectronics

Atmel   SST
PMC   Winbond

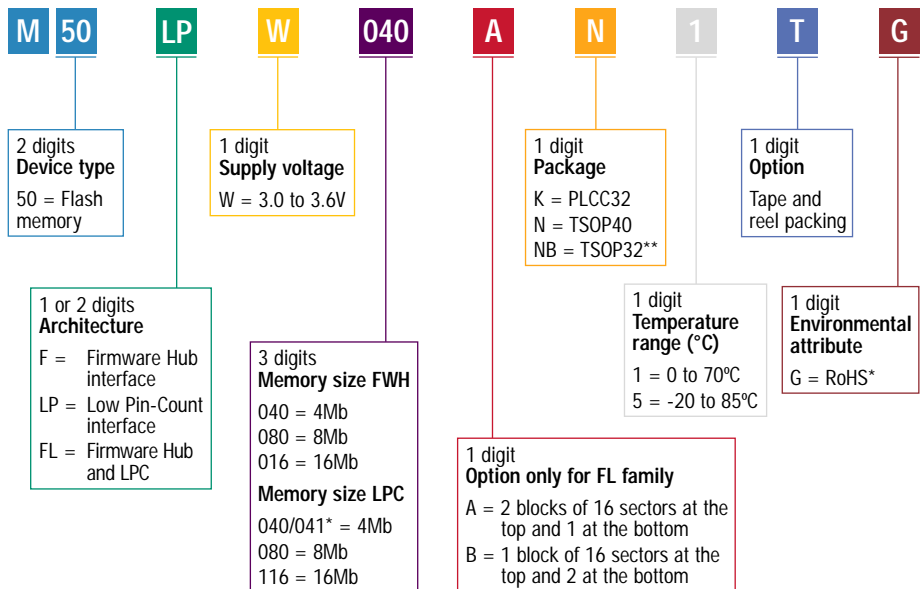# Introduction

How to use the cross-reference guide

This cross-reference guide is intented to help you find out the ST product most compatible with devices from other vendors.

It is very easy to use: simply choose the competitor part number, according to memory size, and you will find the ST equivalent part number. In all cases, we recommend you check the parameters in the appropriate datasheet, to ensure that the product meets the requirements of your application. Please note that this guide is based on information published by others manufacturers at the time of publication.

Complete Serial Flash cross-reference information is available at **www.st.com/flash** or on the ST Intranet.

If you are interested in receiving more information about these and other products, or if you have any technical enquiry, please contact the ST sales office in your area, or send an e-mail to **apps.fwh-lpc@st.com** (for application support) or **ask.memory@st.com** (for general enquiries).

ST Flash for PC and server BIOS part numbering scheme

| M | 50 | | LP | | W | | 040 | | A | | N | | 1 | | T | | G |

2 digits
Device type

50 = Flash memory

1 or 2 digits
Architecture

F = Firmware Hub interface
LP = Low Pin-Count interface
FL = Firmware Hub and LPC

1 digit
Supply voltage

W = 3.0 to 3.6V

3 digits
Memory size FWH

040 = 4Mb
080 = 8Mb
016 = 16Mb

Memory size LPC

040/041* = 4Mb
080 = 8Mb
116 = 16Mb

1 digit
Option only for FL family

A = 2 blocks of 16 sectors at the top and 1 at the bottom
B = 1 block of 16 sectors at the top and 2 at the bottom

1 digit
Package

K = PLCC32
N = TSOP40
NB = TSOP32**

1 digit
Temperature range (°C)

1 = 0 to 70°C
5 = -20 to 85°C

1 digit
Option

Tape and reel packing

1 digit
Environmental attribute

G = RoHS*

* RoHS compliant
** Introduction pending

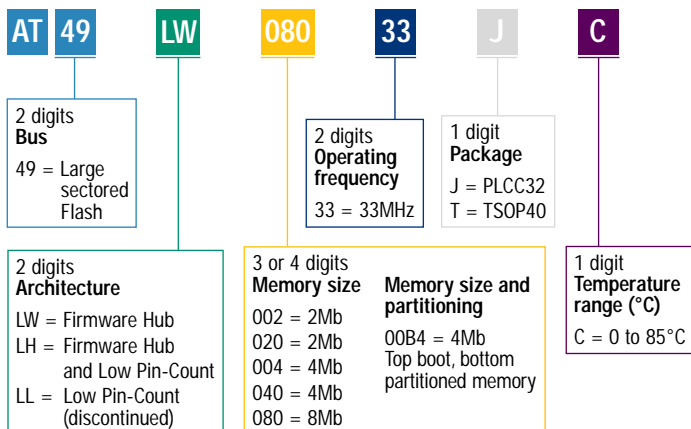| Size	Atmel part number	ST part number[1]	ST preferred part number (RoHS)[2]	Variations between Atmel and ST
2Mb	AT49LH002-33JC	Contact SNVM division's marketing		
	AT49LH002-33TC	Contact SNVM division's marketing		
4Mb	AT49LH004-33JC		M50FLW040AK5G M50FLW040BK5G	Superior granularity on ST part
	AT49LH004-33TC		M50FLW040AN5G M50FLW040BN5G	Superior granularity on ST part
	AT49LH00B4-33JC		M50FLW040AK5G M50FLW040BK5G	Superior granularity on ST part
	AT49LH00B4-33TC		M50FLW040AN5G M50FLW040BN5G	Superior granularity on ST part
	AT49LW040-33JC	M50FW040K1 M50FW040K1T	M50FLW040AK5G M50FLW040BK5G	
	AT49LW040-33TC	M50FW040N1 M50FW040N1T	M50FLW040AN5G M50FLW040BN5G	
8Mb	AT49LW080-33JC	M50FLW080K1	M50FLW080AK5G M50FLW080BK5G	
	AT49LW080-33TC	M50FW080N1 M50FW080N5 M50FW080N5T	M50FLW080AN5G M50FLW080BN5G	

Notes:
Instruction set non-compatible
1. ST part number RoHS compliant 3Q04
2. ST preferred part number is RoHS compliant

ATMEL Flash for PC BIOS part numbering scheme

AT | 49 | LW | 080 | 33 | J | C

2 digits
Bus
49 = Large sectored Flash

2 digits
Architecture
LW = Firmware Hub
LH = Firmware Hub and Low Pin-Count
LL = Low Pin-Count (discontinued)

3 or 4 digits
Memory size
002 = 2Mb
020 = 2Mb
004 = 4Mb
040 = 4Mb
080 = 8Mb

Memory size and partitioning
00B4 = 4Mb Top boot, bottom partitioned memory

2 digits
Operating frequency
33 = 33MHz

1 digit
Package
J = PLCC32
T = TSOP40

1 digit
Temperature range (°C)
C = 0 to 85°C

Temperature ranges: 0 to 85°C on Atmel products (0 to 70°C on ST parts, some extended to -20 to 85°C)

Size	PMC part number	ST part number[1]	ST preferred part number (RoHS)[2]	Variations between PMC and ST
2Mb	Pm49FL002T-33JC	Contact SNVM division's marketing		
	Pm49FL002T-33VC	Contact SNVM division's marketing		
4Mb	Pm49FL004T-33JC	M50FLW040AK5 M50FLW040BK5	M50FLW040AK5G M50FLW040BK5G	Pins 26 and 28 inverted
	Pm49FL004T-33VC		M50FLW040AN5G M50FLW040BN5G	
8Mb	Pm49FL008T-33JC	M50FW080K1 M50LPW080K1	M50FLW080AK5G M50FLW080BK5G	Pins 26 and 28 inverted on PLCC; TSOP40 instead of TSOP32
	Pm49FL008T-33VC	M50FW080N1 M50FW080N5, N5T, M50LPW080N1	M50FLW080AN5G M50FLW080BN5G	

Notes:
Instruction set non-compatible with ST parts for all PMC part numbers
1. ST part number will be RoHS compliant 3Q04
2. ST preferred partnumber is RoHS compliant
3. Contact marketing for TSOP32 packaged devices

PMC Flash for PC BIOS part numbering scheme
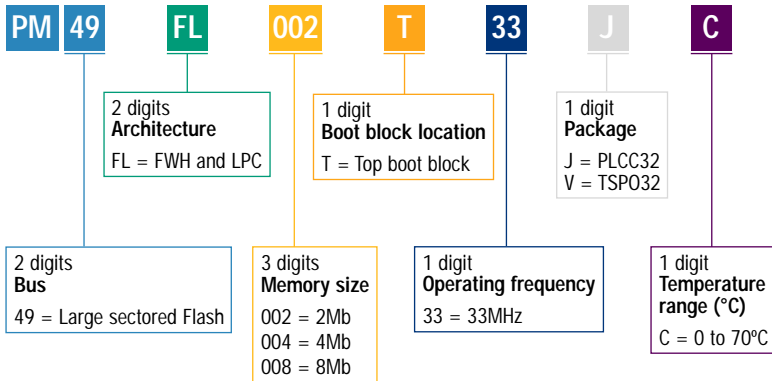
PM **49** **FL** **002** **T** **33** **J** **C**

2 digits
Architecture
FL = FWH and LPC

1 digit
Boot block location
T = Top boot block

1 digit
Package
J = PLCC32
V = TSPO32

2 digits
Bus
49 = Large sectored Flash

3 digits
Memory size
002 = 2Mb
004 = 4Mb
008 = 8Mb

1 digit
Operating frequency
33 = 33MHz

1 digit
Temperature range (°C)
C = 0 to 70ºC

Size	SST part number	ST part number[1]	ST preferred part number (RoHS)[2]	Variations between SST and ST
2Mb	SST49LF002A-33-4C-WH	Contact SNVM division's marketing		
	SST49LF002A-33-4C-NH	Contact SNVM division's marketing		
	SST49LF002A-33-4C-WHE	Contact SNVM division's marketing		
	SST49LF002A-33-4C-NHE	Contact SNVM division's marketing		
	SST49LF020-33-4C-WH	Contact SNVM division's marketing		
	SST49LF020-33-4C-NH	Contact SNVM division's marketing		
3Mb	SST49LF030A-33-4C-WH	No equivalent		
	SST49LF030A-33-4C-NH	No equivalent		
4Mb	SST49LF004A-33-4C-WH	M50FW040N1 M50FW040N1T	M50FLW040AN5G M50FLW040BN5G	
	SST49LF004A-33-4C-NH	M50FW040K1 M50FW040K1T	M50FLW040AK5G M50FLW040BK5G	
	SST49LF004A-33-4C-WHE	M50FW040N1 M50FW040N1T	M50FLW040AN5G M50FLW040BN5G	TSOP40 instead of TSOP32
	SST49LF004A-33-4C-NHE	M50FW040K1 M50FW040K1T	M50FLW040AK5G M50FLW040BK5G	
	SST49LF004B-33-4C-EI		M50FLW040AN5G M50FLW040BN5G	
	SST49LF004B-33-4C-NH		M50FLW040AK5G M50FLW040BK5G	
	SST49LF004B-33-4C-EIE		M50FLW040AN5G M50FLW040BN5G	
	SST49LF004B-33-4C-NHE		M50FLW040AK5G M50FLW040BK5G	
	SST49LF040-33-4C-WH	M50LPW040N1	M50FLW040AN5G M50FLW040BN5G	TSOP40 instead of TSOP32
	SST49LF040-33-4C-NH	M50LPW040K1	M50FLW040AK5G M50FLW040BK5G	
8Mb	SST49LF008A-33-4C-WH	M50FW080N1 M50FW080N5 M50FW080N5T	M50FLW080AN5G M50FLW080BN5G	TSOP40 instead of TSOP32
	SST49LF008A-33-4C-NH	M50FW080K1	M50FLW080AK5G M50FLW080BK5G	
	SST49LF008A-33-4C-EI	M50FW080N1 M50FW080N5 M50FW080N5T	M50FLW080AN5G M50FLW080BN5G	
	SST49LF008A-33-4C-WHE	M50FW080N1 M50FW080N5 M50FW080N5T	M50FLW080AK5G M50FLW080BK5G	TSOP40 instead of TSOP32
	SST49LF008A-33-4C-NHE	M50FW080K1	M50FLW080AK5G M50FLW080BK5G	
	SST49LF008A-33-4C-EIE	M50FW080N1 M50FW080N5 M50FW080N5T	M50FLW080AN5G M50FLW080BN5G	

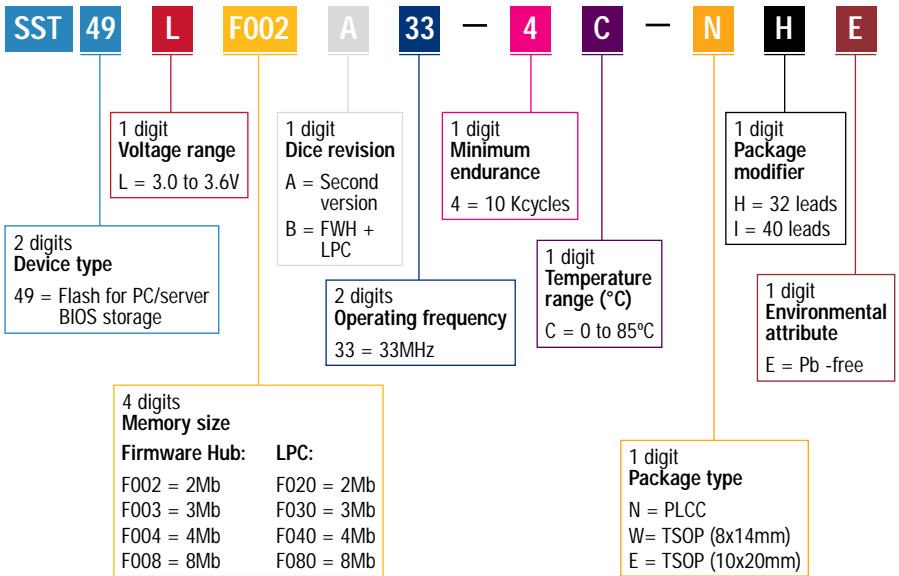| Size	SST part number	ST part number[1]	ST preferred part number (RoHS)[2]	Variations between SST and ST
8Mb	SST49LF080A-33-4C-WH	M50LPW080N1	M50FLW040AN5G M50FLW040BN5G	TSOP40 instead of TSOP32
	SST49LF080A-33-4C-NH	M50LPW080K1	M50FLW040AK5G M50FLW040BK5G	

Notes:
Instruction set non-compatible
1. ST part number will be RoHS compliant 2Q/04
2. ST preferred part number is RoHS compliant
3. Contact marketing for TSOP32 packaged devices

SST Flash for PC BIOS part numbering scheme

SST 49 L F002 A 33 — 4 C — N H E

1 digit
Voltage range
L = 3.0 to 3.6V

1 digit
Dice revision
A = Second version
B = FWH + LPC

1 digit
Minimum endurance
4 = 10 Kcycles

1 digit
Package modifier
H = 32 leads
I = 40 leads

2 digits
Device type
49 = Flash for PC/server BIOS storage

2 digits
Operating frequency
33 = 33MHz

1 digit
Temperature range (°C)
C = 0 to 85°C

1 digit
Environmental attribute
E = Pb -free

4 digits
Memory size

Firmware Hub:	LPC:
F002 = 2Mb	F020 = 2Mb
F003 = 3Mb	F030 = 3Mb
F004 = 4Mb	F040 = 4Mb
F008 = 8Mb	F080 = 8Mb

1 digit
Package type
N = PLCC
W= TSOP (8x14mm)
E = TSOP (10x20mm)

Temperature ranges: 0 to 85°C on SST products (0 to 70°C on ST's, some extended -20 to 85°C)

Winbond to ST

Size	Winbond part number	ST part number[1]	ST preferred part number (RoHS)[2]	Variations between Winbond and ST
2Mb	W49V002A	Contact SNVM division's marketing		
	W49V002FA	Contact SNVM division's marketing		
4Mb	W39V040AP	M50LPW040K1	M50FLW040AK5G M50FLW040BK5G	Pins 26 and 28 inverted
	W39V040AQ	M50LPW040N1	M50FLW040AN5G M50FLW040BN5G	TSOP40 instead of TSOP32
	W39V040AT	M50LPW040N1	M50FLW040AN5G M50FLW040BN5G	
	W39V040FAP	M50FW040K1 M50FW040K1T	M50FLW080AK5G M50FLW080BK5G	Pins 26 and 28 inverted
	W39V040FAQ	M50FW040N1 M50FW040N1T	M50FLW040AN5G M50FLW040BN5G	TSOP40 instead of TSOP32
	W39V040FAT	M50FW040N1 M50FW040N1T	M50FLW040AN5G M50FLW040BN5G	

Notes:
Instruction set non-compatible
1. ST part number will be RoHS compliant 2Q/04
2. ST preferred part number is RoHS compliant
3. Contact marketing for TSOP32 packaged devices

Winbond Flash for PC BIOS part numbering scheme

W 49 V 002 A P

Digit **Voltage range**
V = 3.3V

1 digit **Package**
P = PLCC32
Q = TSOP32
T = TSOP40

2 digits **Device type**
39 = Flash for PC BIOS 4Mb
49 = Flash for PC BIOS 2Mb

1 or 2 digits **Firmware Hub/LPC interface**
FA = Firmware Hub
A = Low Pin-Count

3 digits **Memory size**
002 = 2Mb
040 = 4Mb

For selected STMicroelectronics sales offices fax:
France +33 1 55489569; Germany +49 89 4605454; Italy +39 02 8250449; Japan +81 3 57838216; Singapore +65 6481 5124; Sweden +46 8 58774411; Switzerland +41 22 9292900; United Kingdom and Eire +44 1628 890391; USA +1 781 861 2678

Full product information at www.st.com

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