

Serial SPI Flash Memory Specification List

This Serial Flash Memory specification list will let you easily to find the same spec of flash memory IC you want. But for more information or more details of that flash memory, then you should check with their datasheet guide through internet.

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AMIC- AMIC Technology Corporation- Specification of SPI Flash Memory

Part number	Density	Configuration	VCC	Speed	Temp	Package	Notes
A25L010	1	1M	3	100	U	SOP/DIP/USON	Uniform sector 4KB
A25L010A	1	1M	3	100	U	SOP/DIP/USON	Uniform sector 4KB
A25P010	1	1M	2,3	100	I	DIP / SOP / TSSOP / USON	Uniform sector 4KB
A25L020	2	2M	3	100	U	SOP/DIP/USON	Uniform sector 4KB
A25L020C	2	2M	3	100	U	SOP/DIP/USON	Uniform sector 4KB
A25P020	2	2M	2,3	100	I	DIP / SOP / TSSOP / USON	Uniform sector 4KB
A25L040	4	4M	3	85, 100	U	SOP/DIP/WSON	Uniform sector 4KB
A25L040A	4	4M	3	85, 100	U	SOP/DIP/WSON	Uniform sector 4KB
A25P040	4	4M	2,3	100	I	DIP / SOP / TSSOP / USON	Uniform sector 4KB
A25L080	8	8M	3	85, 100	U	SOP/DIP/WSON/BGA	Uniform sector 4KB
A25L016	16	16M	3	100	U	SOP/DIP/WSON/BGA	Uniform sector 4KB
A25LQ16	16	16M	3	100	U	SOP/DIP/WSON/BGA	Uniform sector 4KB,
A25L032	32	32M	3	85,1	U	SOP/DIP/WSON/BGA	Uniform sector 4KB
A25LQ32A	32	32M	3	100	U	SOP/DIP/WSON/BGA	Uniform sector 4KB,
A25LQ64	64	64M	3	100	A	SOP/DIP/WSON/BGA	Uniform sector 4KB,
A25LMQ64	64	64M	3	100	U	SOP/DIP/WSON/BGA	Uniform sector 4KB,
A25L512	512K	512K	3	100	U	SOP/DIP/USON	Uniform sector 4KB
A25L512A	512K	512K	3	100	U	SOP/DIP/USON	Uniform sector 4KB
A25LS512A	512K	512K	3	100	U	SOP/DIP/USON	Uniform sector 4KB
A25P512	512K	512K	2,3	100	I	DIP / SOP / TSSOP / USON	Uniform sector 4KB

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EON- Eon Silicon Solution Inc.-SPI Flash Memory

SPI / Serial Flash						
Density	Part Number	Voltage	Sector	Bus Width	Speed	Package
1Mb	EN25F10	3V	Uniform 4KB	x1	100MHz	SOP-8
1Mb	EN25F10A	3V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 VSOP-8 VDFN-8 USON-8
1Mb	EN25S10A	1.8V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 VSOP-8 USON-8
1Mb	EN25LF10	2.5V	Uniform 4KB	x1	75MHz	SOP-8 VDFN-8
1Mb	EN25S10	1.8V	Uniform 4KB	x1	75MHz	SOP-8 USON-8
2Mb	EN25F20	3V	Uniform 4KB	x1	100MHz	SOP-8 VDFN-8
2Mb	EN25LF20	2.5V	Uniform 4KB	x1	75MHz	SOP-8 VDFN-8
2Mb	EN25S20	1.8V	Uniform 4KB	x1	75MHz	SOP-8 VDFN-8 USON-8
2Mb	EN25S20A	1.8V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 VSOP-8 VDFN-8 USON-8
2Mb	EN25F20A	3V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 VSOP-8 VDFN-8 USON-8
4Mb	EN25F40	3V	Uniform 4KB	x1	100MHz	SOP-8 PDIP-8
4Mb	EN25F40A	3V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 VSOP-8 VDFN-8 USON-8
4Mb	EN25LF40	2.5V	Uniform 4KB	x1	75MHz	SOP-8 VDFN-8
4Mb	EN25Q40	3V	Uniform 4KB	x1 / x2 / x4	100MHz	SOP-8 VDFN-8 USON-8
4Mb	EN25Q40A	3V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 VSOP-8 VDFN-8 PDIP-8 USON-8
4Mb	EN25S40	1.8V	Uniform 4KB	x1	75MHz	SOP-8 VDFN-8 USON-8
4Mb	EN25S40A	1.8V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 VSOP-8 VDFN-8 USON-8

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Density	Part Number	Voltage	Sector	Bus Width	Speed	Package
8Mb	EN25S80A	1.8V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 VSOP-8 VDFN-8 USON-8
8Mb	EN25S80B	1.8V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 VSOP-8 VDFN-8 USON-8
8Mb	EN25F80	3V	Uniform 4KB	x1	100MHz	SOP-8 PDIP-8
8Mb	EN25Q80A	3V	Uniform 4KB	x1 / x2 / x4	100MHz	SOP-8 VDFN-8 PDIP-8
8Mb	EN25Q80B	3V	Uniform 4KB	x1 / x2 / x4	104MHz	BGA-24 SOP-8 VSOP-8 VDFN-8 PDIP-8 USON-8
8Mb	EN25S80	1.8V	Uniform 4KB	x1	75MHz	SOP-8 VDFN-8
16Mb	EN25T16A	3V	Uniform 4KB	x1 / x2	75MHz	SOP-8 VDFN-8 PDIP-8
16Mb	EN25Q16A	3V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8
16Mb	EN25QH16	3V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 VDFN-8 PDIP-8
16Mb	EN25QH16A	3V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 VSOP-8 VDFN-8 PDIP-8 USON-8
16Mb	EN25QA16	3V	Uniform 4KB	x1 / x2 / x4	104MHz	BGA-24
16Mb	EN25Q16B	3V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8
16Mb	EN25S16	1.8V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 VSOP-8 VDFN-8
16Mb	EN25S16A	1.8V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 VSOP-8 VDFN-8 USON-8

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Density	Part Number	Voltage	Sector	Bus Width	Speed	Package
32Mb	EN25Q32C	3V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 SOP-16 VDFN-8 PDIP-8
32Mb	EN25Q32B	3V	Uniform 4KB	x1 / x2 / x4	104MHz	BGA-24 SOP-8 SOP-16 VDFN-8
32Mb	EN25QH32	3V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 PDIP-8
32Mb	EN25QH32A	3V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 SOP-16 VDFN-8 PDIP-8
32Mb	EN25QA32	3V	Uniform 4KB	x1 / x2 / x4	104MHz	BGA-24
32Mb	EN25S32	1.8V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 VSOP-8 VDFN-8
64Mb	EN25S64A	1.8V	Uniform 4KB	x1 / x2 / x4	104MHz(x1),80MHz(x2,x4)	SOP-8 VSOP-8 VDFN-8
64Mb	EN25Q64	3V	Uniform 4KB	x1 / x2 / x4	104MHz	BGA-24 SOP-8 SOP-16 VDFN-8
64Mb	EN25S64	1.8V	Uniform 4KB	x1 / x2 / x4	104MHz	VSOP-8 VDFN-8
64Mb	EN25QH64	3V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-8 PDIP-8
64Mb	EN25QH64A	3V	Uniform 4KB	x1 / x2 / x4	133MHz	BGA-24 SOP-8 SOP-16 VDFN-8 PDIP-8
64Mb	EN25QA64	3V	Uniform 4KB	x1 / x2 / x4	104MHz	BGA-24
128Mb	EN25QH128A	3V	Uniform 4KB	x1 / x2 / x4	104MHz	BGA-24 SOP-8 SOP-16 VDFN-8
128Mb	EN25QH128	3V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-16 VDFN-8
128Mb	EN25QA128	3V	Uniform 4KB	x1 / x2 / x4	104MHz	BGA-24
128Mb	EN25Q128	3V	Uniform 4KB	x1 / x2 / x4	104MHz	SOP-16 VDFN-8
256Mb	EN25QA256	3V	Uniform 4KB	x1 / x2 / x4	80MHz	BGA-24
256Mb	EN25QH256	3V	Uniform 4KB	x1 / x2 / x4	80MHz	BGA-24 SOP-16 VDFN-8
256Mb	EN25S256	1.8V	Uniform 4KB	x1 / x4	133MHz	VDFN-8

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ISSI –Integrated Silicon Solution Inc- Specification of Serial Flash Memory

Serial NOR Flash (SPI) Part Decoder

IS 25 LD 020 - JN L E

ISSI prefix
Product Family/ Voltage
Density
Die Rev. Control

Temp. Grade
Lead-Free Package
Package Type

- Flash Product Family**
 25xD = Dual SPI
 25xQ = Quad SPI
 25xP = QPI
- Operating Voltage Range**
 25Lx = 2.3V-3.6V
 25Cx = 2.7-3.6V
 25Wx = 1.65V-1.95V
- Die Rev. Control**
 Blank = First Rev.
- Density**
 025 = 256Kb
 512 = 512Kb
 010 = 1Mb
 020 = 2Mb
 040 = 4Mb
 080 = 8Mb
 032 = 32Mb
 064 = 64Mb
 128 = 128Mb
 256 = 256Mb
- Package Type**
 JM = 16 pin SOIC 300mil
 JB = 8 pin SOIC 208mil
 JN = 8 pin SOIC 150mil
 JD = 8 pin TSSOP
 JK = 8 pin WSON [5x6 mm]
 JU = 8 pin USON [2x3mm]
 JF = 8 pin VSOP 208mil
 JV = 8 pin VVSOP 150mil
 JG = 24 ball [BGA 6x8 mm]
- Lead-free Package**
 L = Lead-Free [Pb Free] and Halogen Free
- Temperature Grade**
 E = Extended grade [-40°C to +105°C]
 A1 = Automotive grade [-40°C to +85°C]
 A2 = Automotive grade [-40°C to +105°C]
 A3 = Automotive grade [-40°C to +125°C]

Serial NOR Flash (SPI)

Den	Part Number	Type	Vcc	Frequency	Temp.Range	Package Type	Status	Models
256K	IS25CD025	Multi I/O Dual SPI	2.7-3.6V	33M/100Mhz	-40 to 105°C	SOIC,TSSOP	Prod	IBIS
512K	IS25CD512	Multi I/O Dual SPI	2.7-3.6V	33M/100Mhz	-40 to 105°C	SOIC,TSSOP,USON,WSON	Prod	IBIS
1M	IS25CD010	Multi I/O Dual SPI	2.7-3.6V	33M/100Mhz	-40 to 105°C	SOIC,TSSOP,WSON	Prod	IBIS
2M	IS25LQ020	Multi I/O Quad SPI	2.3-3.6V	33M/104Mhz	-40 to 125°C	SOIC,WSON,VVSOP, USON	S=Q4/14	IBIS
	IS25WQ020	Multi I/O Quad SPI	1.65-1.95V	33M/104Mhz	-40 to 125°C	SOIC,WSON,VVSOP, USON	S=Q1/15	IBIS
	IS25LD020	Multi I/O Dual SPI	2.3-3.6V	33M/100Mhz	-40 to 105°C	SOIC,TSSOP,WSON,VVSOP	Prod	IBIS
4M	IS25WD020	Multi I/O Dual SPI	1.65-1.95V	30M/80Mhz	-40 to 105°C	SOIC,WSON,VVSOP	Prod	IBIS
	IS25LD040	Multi I/O Dual SPI	2.3-3.6V	33M/100Mhz	-40 to 105°C	SOIC,WSON,VVSOP	Prod	IBIS
	IS25WD040	Multi I/O Dual SPI	1.65-1.95V	30M/80Mhz	-40 to 105°C	SOIC,WSON,VVSOP	Prod	IBIS
8M	IS25LQ040	Multi I/O Quad SPI	2.3-3.6V	33M/104Mhz	-40 to 125°C	SOIC,WSON,VVSOP	S=Q4/14	IBIS
	IS25WQ040	Multi I/O Quad SPI	1.65-1.95V	33M/104Mhz	-40 to 125°C	SOIC,WSON,VVSOP	S=Q1/15	IBIS
	IS25LQ080	Multi I/O Quad SPI	2.3-3.6V	33M/104Mhz	-40 to 125°C	SOIC,WSON,VVSOP	Prod	IBIS
16M	IS25LQ080B	Multi I/O Quad SPI	2.3-3.6V	33M/104Mhz	-40 to 125°C	SOIC,WSON,VSOP	S=Q3/14	IBIS
	IS25WQ080	Multi I/O Quad SPI	1.65-1.95V	33M/104Mhz	-40 to 125°C	SOIC,WSON,VVSOP	S=Q4/14	IBIS
	IS25LQ016B	Multi I/O Quad SPI	2.3-3.6V	33M/104Mhz	-40 to 125°C	SOIC,WSON,VSOP	Prod	IBIS
32M	IS25CQ032	Multi I/O Quad SPI	2.7-3.6V	33M/104Mhz	-40 to 125°C	SOIC,WSON,VSOP	Prod	IBIS
	IS25LP032	Quad DTR, Multi I/O SPI	2.3-3.6V	50M/133Mhz	-40 to 125°C	SOIC,WSON,VSOP	S=Q2/14	
	IS25LQ032B	Multi I/O Quad SPI	2.3-3.6V	33M/104Mhz	-40 to 125°C	SOIC,WSON,VSOP	Prod	IBIS
64M	IS25LP064	Quad DTR, Multi I/O SPI	2.3-3.6V	50M/133Mhz	-40 to 125°C	SOIC,WSON,VSOP	S=Q2/14	
128M	IS25LP128	Quad DTR, Multi I/O SPI	2.3-3.6V	50M/133Mhz	-40 to 125°C	SOIC,WSON,VSOP	S=NOW	
256M	IS25LP256	Quad DTR, Multi I/O SPI	2.3-3.6V	50M/133Mhz	-40 to 125°C	SOIC,WSON,TFBGA	S=Q1/15	IBIS

2.5/3V, IS25xD Family - Multi I/O Dual SPI

Den	Part Number	Vcc	Freq. [MHz]	Package Type	Temp. Range	Status
256K	IS25CD025	2.70V-3.60V	33/100	SOP [8] 150mil, TSSOP [8]	-40° to 105°C	Prod
512K	IS25CD512	2.70V-3.60V	33/100	SOP [8] 150mil, TSSOP [8], USON 2x3mm, WSON 6x5mm	-40° to 105°C	Prod
1M	IS25CD010	2.70V-3.60V	33/100	SOP [8] 150mil, TSSOP [8], WSON 6x5mm	-40° to 105°C	Prod
2M	IS25LD020	2.30V-3.60V	33/100	SOP [8] 150mil, TSSOP [8], VVSOP [8] 150mil, WSON 6x5mm	-40° to 105°C	Prod
4M	IS25LD040	2.30V-3.60V	33/100	SOP [8] 150mil, SOP [8] 208mil, VVSOP [8] 150mil, WSON 6x5mm	-40° to 105°C	Prod

2.5/3V, IS25xQ Family - Multi I/O Quad SPI

Den	Part Number	Vcc	Freq. [MHz]	Package Type	Temp. Range	Status
512K	IS25LQ512A	2.30V-3.60V	33/80	SOP [8] 150mil, TSSOP [8]	-40° to 105°C	Prod
1M	IS25LQ010A	2.30V-3.60V	33/80	SOP [8] 150mil, TSSOP [8]	-40° to 105°C	Prod
2M	IS25LQ020A	2.30V-3.60V	33/80	SOP [8] 150mil, TSSOP [8], VVSOP [8] 150mil	-40° to 105°C	Prod
4M	IS25LQ040C	2.30V-3.60V	33/80	SOP [8] 150mil, SOP [8] 208mil, VVSOP [8] 150mil, USON 2x3mm	-40° to 105°C	Call Factory
8M	IS25LQ080	2.30V-3.60V	33/104	SOP [8] 150mil, SOP [8] 208mil, VVSOP [8] 150mil, WSON 6x5mm	-40° to 125°C	Prod
16M	IS25LQ016	2.30V-3.60V	33/104	SOP [8] 150mil, SOP [8] 208mil, VVSOP [8] 150mil, WSON 6x5mm, WSON 8x6mm	-40° to 125°C	Prod
32M	IS25CQ032	2.70V-3.60V	33/104	SOP [8] 208mil, SOP [16] 300mil, VSOP [8] 208mil, WSON 6x5mm, WSON 8x6mm, BGA [24]	-40° to 125°C	Prod
64M	IS25CQ064	2.70V-3.60V	50/104	SOP [8] 208mil, SOP [16] 300mil, WSON 6x5mm, WSON 8x6mm, BGA [24]	-40° to 125°C	Call Factory
128M	IS25LP128*	2.30V-3.60V	50/133	SOP [8] 208mil, SOP [16] 300mil, VSOP [8] 208mil, WSON 6x5mm	-40° to 125°C	Call Factory
256M	IS25LP256*	2.30V-3.60V	50/133	SOP [8] 208mil, SOP [16] 300mil, VSOP [8] 208mil, WSON 8x6mm	-40° to 125°C	Call Factory

*Note : IS25LP Family includes QPI + DTR functionality

1.8V, IS25xD Family - Multi I/O Dual SPI

Den	Part Number	Vcc	Freq. [MHz]	Package Type	Temp. Range	Status
2M	IS25WD020	1.65V-1.95V	30/80	SOP [8] 150mil, SOP [8] 208mil, VVSOP [8] 150mil, WSON 6x5mm	-40° to 105°C	Prod
4M	IS25WD040	1.65V-1.95V	30/80	SOP [8] 150mil, SOP [8] 208mil, VVSOP [8] 150mil, WSON 6x5mm	-40° to 105°C	Prod

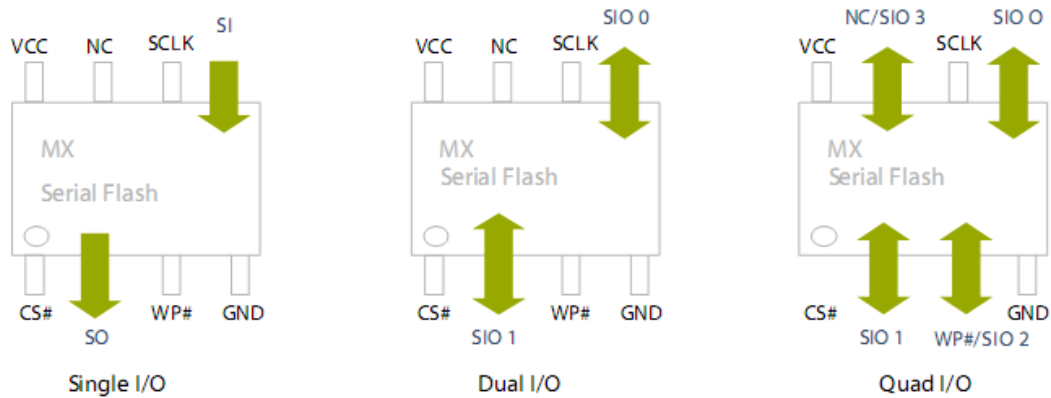
1.8V, IS25xQ Family - Multi I/O Quad SPI

Den	Part Number	Vcc	Freq. [MHz]	Package Type	Temp. Range	Status
8M	IS25WQ080	1.65V-1.95V	33/104	SOP8 150mil, SOP8 208mil, VVSOP 150mil, WSON 6x5mm	-40° to 125°C	Call Factory

MXIC- Specification of Macronix SPI Flash Memory

Pin Assignments

Serial Flash Pin Assignment (8-Pin Package)



The Macronix Multi-I/O Serial Flash doubles or even quadruples the data rate by changing the conventional Serial Input pin and Serial Output pin from single unidirectional data flow into multiple bi-directional data flows. The dual I/O version uses SI and SO pins for both serial input and output, while the Quad I/O version uses SI and SO pins along with Write Protect pin and NC pin for both data input and output Functions. This doubling or quadrupling of data rate allows Serial Flash to compete with Parallel Flash for data read performance.

Secure 3V Flash

Part number	Density	Organization	Clock Speed (MHz)	I/O Bus	Package
MX25L1655D	16Mb	16M x 1/ 8M x 2/ 4M x 4	104/150/300	Single / Dual / Quad	8-SOP, 24 BGA(6x8mm)
MX25L3255D	32Mb	32M x 1/ 16M x 2/ 8M x 4	104/150/300	Single / Dual / Quad	8-SOP, 24 BGA(6x8mm)
MX25L6455E	64Mb	64M x 1/ 32M x 2	104/140/280/400	Single / Dual / Quad / DTR	16-SOP, 24 BGA(6x8mm)
MX25L12855E	128Mb	128M x 1/ 64M x 2 32M x 4	104/140/280/400	Single / Dual / Quad / DTR	16-SOP, 24 BGA(10x13mm)

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Single I/O 3V Family:

Part number	Density	Voltage	Clock Speed (MHz)	I/O bus	Package
MX25L512C	512kb	2.7~3.6V	85	Single	8-SOP, 8-USON(2x3mm)
MX25L1005C	1Mb	2.7~3.6V	85	Single	8-SOP, 8-USON(2x3mm)
MX25L2005C	2Mb	2.7~3.6V	85	Single	8-SOP, 8-WSON(6x5mm)
MX25L4005C	4Mb	2.7~3.6V	85	Single	8-SOP, 8-USON(4x4mm) 8-WSON(6x5mm)
MX25L8005	8Mb	2.7~3.6V	86	Single	8-SOP, 8-PDIP, 8-WSON(6x5mm), 8-USON(4x4mm)
MX25L1605D	16Mb	2.7~3.6V	86	Single	8-SOP, 8-PDIP, 16-SOP 8-WSON(6x5mm), 8-USON(4x4mm)
MX25L3205D	32Mb	2.7~3.6V	86	Single	8-SOP, 8-PDIP, 16-SOP, 8-WSON(6x5mm) 8-USON(4x4mm)
MX25L6405D	64Mb	2.7~3.6V	86	Single	16-SOP, 8-WSON(6x8mm)
MX25L12805D	128Mb	2.7~3.6V	50	Single	16-SOP

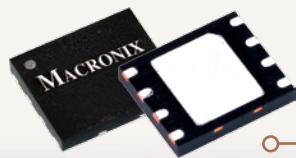
Dual I/O 3V Family:

Part number	Density	Voltage	Clock Speed (MHz)	I/O bus	Package
MX25L1605D	16Mb	2.7~3.6V	86 / 100	Single / Dual	8-SOP, 8-PDIP, 16-SOP 8-WSON(6x5mm), 8-USON(4x4mm)
MX25L3205D	32Mb	2.7~3.6V	86 / 100	Single / Dual	8-SOP, 8-PDIP, 16-SOP, 8-WSON(6x5mm) 8-USON(4x4mm)
MX25L6405D	64Mb	2.7~3.6V	86 / 100	Single / Dual	16-SOP, 8-WSON(6x8mm)

Quad I/O 3V Family:

Part number	Density	Voltage	Clock Speed (MHz)	I/O bus	Package
MX25L1635D	16Mb	2.7~3.6V	104/150/300	Single / Dual / Quad	8-SOP, 16-SOP, 8-WSON(6x5mm)
MX25L3235D	32Mb	2.7~3.6V	104/150/300	Single / Dual / Quad	8-SOP, 16-SOP, 8-WSON(6x5mm)
MX25L6445E	64Mb	2.7~3.6V	104/140/280/400	Single / Dual / Quad / DTR	8-SOP, 16-SOP, 8-WSON(6x8mm)
MX25L12845E	128Mb	2.7~3.6V	104/140/280/400	Single / Dual / Quad / DTR	16-SOP

Serial NOR Flash



Macronix offers industry standard Serial Flash products from 512Kb to 1Gb densities, and also provides backward compatible high performance Serial Flash, MXSMIO® (Multi-I/O) family, and MXSMIO® Duplex (DTR) family, as below:

MX25xxx06 - Standard Serial Interface Series

The MX25xxx06 series provides Standard Serial Interface x1 or x2 I/O [Single I/O or Dual I/O] at a single 3V or 2.5V power-supply voltage. These products are offered with 4KB sectors and 64KB blocks.

MX25xxx08 - Unique ID Series

The MX25xxx08 series provides a 512-bit secured area, independent from the main array, to store unique ID data for the system identifier.

MX25xxx26 - Default Lock Protection Series

The default lock protection series is optimized for Parameter Protection applications. These products utilize the BP volatile protection bits to protect selected boot areas of memory against misuse of programs, and to erase instructions in the protected area.

MX25xxx33/35/36/45 - MXSMIO® (Multi-I/O) & MXSMIO® Duplex (DTR) Series

Macronix Serial Multi-I/O [MXSMIO®] Flash provides two kinds of Multi-I/O interfaces: the MX25xxx35 series, which offers a Multi-in / Multi-out interface, and the MX25xxx36 series, which offers a Single-in / Multi-out interface. Both series are available on Quad I/O operation, which quadruples the read performance of systems for high-end consumer applications.

Furthermore, the MXSMIO® Duplex family, the MX25xxx45 series, offers a Quad I/O interface with DTR [Double Transfer Rate] mode operation providing a fast data transfer rate of up to 640 MHz, which makes it the fastest Serial Flash in the industry. The MXSMIO® Duplex family is offered in densities from 64Mb to 1Gb with independent block lock protection on the boot sector.

MX25xxx73 - MXSMIO® Series (Quad I/O Permanent Enable)

The MX25xxx73 series provide Multi-I/O default enable solution. The Multi-I/O interface is available without any setting in Flash side, and it provides user more convenient way to experience the Multi-I/O performance.



Serial Flash Function List

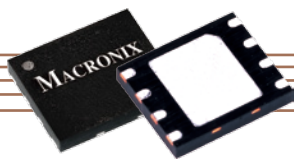
Function	3V											1.8V			
	xx06E	xx08E	xx26E	xx33E	8035E/1635E	3235E/6435E	xx35F	8036E/1636E	xx73E/F	xx45E	xx45G	xx55F	3255E/6456E	U2033E/4033E/8033E	U1635F
H/W Reset Pin								●			●	●			●
H/W Hold# Pin	●	●	●			●							●		
1I/O (1-1-1)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1I/2O (1-1-2)	●	●	●			●	●	●	●		●	●	●		
2I/O (1-2-2)**				●	●	●	●	●	●	●	●	●	●	●	●
1I/4O (1-1-4)**						●	●	●	●	●	●	●	●		
4I/O (1-4-4)**				●	●	●	●	●	●	●	●	●	●	●	●
QPI (4-4-4)**							●	●*			●				●
DTR function									●	●					
BPx Bits (NVM)	●	●		●	●	●	●	●	●	●	●	●	●	●	●
BPx Bits (SRAM)			●												
WPSEL Mode (BPx mode individual WP mode)						●	●		●	●	●	●	●	●	●
Security Function (BPG, read lock)											●	●			
Security OTP & Register	●	●		●	●	●	●	●	●	●	●	●	●	●	●
Unique ID		●													
CP mode						●			●				●		
Note															
* 128Mb Only															
** I/O Nomenclature defined in Command, Address (Input), Data (Output) Configuration															
For eg: 1-1-1 denotes 1-Command, 1-Address (Input), 1-Data (Output)															

Serial Flash Portfolio

	512Kb	1Mb	2Mb	4Mb	8Mb	16Mb	32Mb	64Mb	128Mb	256Mb	512Mb	1Gb
3V												
MX25Lxx05/06 Standard Serial Interface	●	●	●	●	●	●	●	●				
MX25Lxx08 Unique ID series					●	●	●	●				
MX25Lxx25/26 Default Lock Protection series		●	●	●								
MX25L/66Lxx33/35/36/45 MXSMIO®					●	●	●	●	●	●	●	
MX25L/66Lxx45 MXSMIO® Duplex series								●	●	●	●	●
MX25L/66Lxx55 MXSMIO® Secure series						●	●	●	●	●	●	●
MX25Lxx73 MXSMIO® series (Quad I/O Permanent Enable)					●	●	●	●	●			
2.5V												
MX25Vxx05/06 Standard Serial Interface	●	●	●	●	●							
MX25Vxx35 MXSMIO® series				●	●							
1.8V												
MX25Uxx35/33 MX66Uxx35 MXSMIO® series			●	●	●	●	●	●	●	●	●	

3V Serial Flash Family

Part number	Density	Organization	I/O Bus	Frequency (MHz)	Package	Voltage	Automotive Grade
Standard Serial Interface Series:							
MX25L512E	512Kb	4KB / 64KB	Single / Dual	104(x1), 80(x2)	150mil 8-SOP, 8-TSSOP, 8-USON(2x3mm)	2.7~3.6V	
MX25L5121E	512Kb	4KB / 64KB	Single	45	150mil 8-SOP, 173mil 8-TSSOP, 8-USON(2x3mm)	2.7~3.6V	
MX25L1006E	1Mb	4KB / 64KB	Single / Dual	104(x1), 80(x2)	150mil 8-SOP, 8-USON(2x3mm), WLCSP	2.7~3.6V	-40°C to 105°C
MX25L1021E	1Mb	4KB / 64KB	Single	45	150mil 8-SOP	2.7~3.6V	
MX25L2006E	2Mb	4KB / 64KB	Single / Dual	86(x1), 80(x2)	150mil 8-SOP, 8-USON(2x3mm), 8-WSON(6x5mm)	2.7~3.6V	-40°C to 125°C
MX25L4006E	4Mb	4KB / 64KB	Single / Dual	86(x1), 80(x2)	150mil 8-SOP, 200mil 8-SOP, 300mil 8-PDIP, 8-USON(2x3mm), 8-WSON(6x5mm)	2.7~3.6V	-40°C to 125°C
MX25L8006E	8Mb	4KB / 64KB	Single / Dual	86(x1), 80(x2)	150mil 8-SOP, 200mil 8-SOP, 300mil 8-PDIP, 8-WSON(6x5mm), 8-USON(4x4mm)	2.7~3.6V	-40°C to 125°C
MX25L1606E	16Mb	4KB / 64KB	Single / Dual	86(x1), 80(x2)	150mil 8-SOP, 200mil 8-SOP, 300mil 16-SOP, 300mil 8-PDIP, 8-WSON(6x5mm), 8-USON(4x4mm), 24-TFBGA(6x8mm)	2.7~3.6V	-40°C to 125°C
MX25L3206E	32Mb	4KB / 64KB	Single / Dual	86(x1), 80(x2)	200mil 8-SOP, 300mil 16-SOP, 300mil 8-PDIP, 8-WSON(6x5mm), 8-USON(4x4mm), 24-TFBGA(6x8mm)	2.7~3.6V	-40°C to 105°C
MX25L6406E	64Mb	4KB / 64KB	Single / Dual	86(x1), 80(x2)	200mil 8-SOP, 300mil 16-SOP, 8-WSON(6x5mm), 8-WSON(8x6mm), 200mil 8-VSOP, 24-TFBGA(6x8mm)	2.7~3.6V	
Default Lock Protection Series							
MX25L1026E	1Mb	4KB / 64KB	Single / Dual	104(x1), 80(x2)	150mil 8-SOP	2.7~3.6V	
MX25L2026E	2Mb	4KB / 64KB	Single / Dual	86(x1), 80(x2)	150mil 8-SOP	2.7~3.6V	
MX25L4026E	4Mb	4KB / 64KB	Single / Dual	86(x1), 80(x2)	150mil 8-SOP	2.7~3.6V	



3V Serial Flash Family: MXSMIO® (Multi-I/O) & MXSMIO® Duplex (DTR) Series

Part number	Density	Organization	I/O Bus	Frequency(MHz)	Package	Voltage	Features	Automotive Grade
MX25L8035E	8Mb	4KB / 64KB	Single / Dual / Quad	108(x1, x4), 80(x2)	200mil 8-SOP	2.7~3.6V		
MX25L8036E	8Mb	4KB / 64KB	Single / Dual / Quad	133(x1, x2, x4)	200mil 8-SOP	2.7~3.6V		
MX25L8073E	8Mb	4KB / 64KB	Single / Dual / Quad	108(x1, x4), 80(x2)	200mil 8-SOP	2.7~3.6V		
MX25L1633E	16Mb	4KB / 64KB	Single / Dual / Quad	104(x1), 85(x2, x4)	200mil 8-SOP, 8-WSON(6x5mm), 8-USON(4x4mm)	2.7~3.6V		-40°C to 125°C
MX25L1635E	16Mb	4KB / 64KB	Single / Dual / Quad	108(x1, x4), 80(x2)	200mil 8-SOP	2.7~3.6V		
MX25L1636E	16Mb	4KB / 64KB	Single / Dual / Quad	133(x1, x2, x4)	200mil 8-SOP	2.7~3.6V		
MX25L1673E	16Mb	4KB / 64KB	Single / Dual / Quad	104(x1), 85(x2, x4)	200mil 8-SOP, 8-WSON(6x5mm), 8-USON(4x4mm)*	2.7~3.6V		
MX25L3235E	32Mb	4KB / 32KB / 64KB	Single / Dual / Quad	104(x1, x4), 86(x2)	200mil 8-SOP, 300mil 16-SOP, 8-WSON(6x5mm)	2.7~3.6V		-40°C to 105°C
MX25L3273E	32Mb	4KB / 32KB / 64KB	Single / Dual / Quad	104(x1, x4), 86(x2)	200mil 8-SOP, 200mil 8-VSOP, 300mil 16-SOP*, 8-WSON(6x5mm)*	2.7~3.6V		
MX25L3233F	32Mb	4KB / 32KB / 64KB	Single / Dual / Quad	120(x1, x2, x4)	150mil 8-SOP, 8-WSON(6x5mm), 8-USON(4x3mm)	2.65~3.6V		
MX25L6435E	64Mb	4KB / 32KB / 64KB	Single / Dual / Quad	104(x1, x4), 86(x2)	200mil 8-SOP, 300mil 16-SOP, 8-WSON(6x5mm), 8-WSON(8x6mm), 24-TFBGA(6x8mm), WLCSP	2.7~3.6V		-40°C to 105°C
MX25L6473E	64Mb	4KB / 32KB / 64KB	Single / Dual / Quad	104(x1, x4), 86(x2)	200mil 8-SOP, 200mil 8-VSOP, 300mil 16-SOP*, 8-WSON(6x5mm), WLCSP	2.7~3.6V		
MX25L6433F	64Mb	4KB / 32KB / 64KB	Single / Dual / Quad	120(x1, x2, x4)	200mil 8-SOP, 300mil 16-SOP, 8-WSON(8x6mm), 8-USON(4x4mm)	2.65~3.6V		
MX25L12835F	128Mb	4KB / 32KB / 64KB	Single / Dual / Quad	133(x1, x2, x4)	200mil 8-SOP, 300mil 16-SOP, 8-WSON(6x5mm), 8-WSON(8x6mm)	2.7~3.6V	QPI	-40°C to 105°C
MX25L12873F	128Mb	4KB / 32KB / 64KB	Single / Dual / Quad	133(x1, x2, x4)	200mil 8-SOP, 300mil 16-SOP, 8-WSON(6x5mm)	2.7~3.6V	QPI	
MX25L25635F	256Mb	4KB / 32KB / 64KB	Single / Dual / Quad	133(x1, x2, x4)	300mil 16-SOP, 8-WSON(8x6mm)	2.7~3.6V	QPI	-40°C to 105°C
MX25L25735F	256Mb	4KB / 32KB / 64KB	Single / Dual / Quad	133(x1, x2, x4)	300mil 16-SOP, 8-WSON(8x6mm)	2.7~3.6V	QPI	
MX25L51245G	512Mb	4KB / 32KB / 64KB	Single / Dual / Quad	166 (x1, x2), 133 (x4)	300mil 16-SOP, 8-WSON(8x6mm), 24-TFBGA(6x8mm)	2.7~3.6V	QPI	DTR
MX66L51235F	512Mb	4KB / 32KB / 64KB	Single / Dual / Quad	133(x1, x2, x4)	300mil 16-SOP, 8-WSON(8x6mm), 24-TFBGA(6x8mm)	2.7~3.6V	QPI	-40°C to 125°C
MX66L1G45G	1Gb	4KB / 32KB / 64KB	Single / Dual / Quad	166 (x1, x2), 133 (x4)	300mil 16-SOP, 24-TFBGA(6x8mm)	2.7~3.6V	QPI	DTR

* Advance Information

2.5V Serial Flash Family: Standard Serial Interface Series

Part Number	Density	Organization	I/O Bus	Frequency (MHz)	Package
MX25V512E	512Kb	4KB / 64KB	Single / Dual	75(x1), 70(x2)	150mil 8-SOP, 173mil 8-TSSOP, 8-USON(2x3mm)
MX25V1006E	1Mb	4KB / 64KB	Single / Dual	75(x1), 70(x2)	150mil 8-SOP, 173mil 8-TSSOP, 8-USON(2x3mm)
MX25V2006E	2Mb	4KB / 64KB	Single / Dual	75(x1), 70(x2)	150mil 8-SOP, 8-WSON(6x5mm)
MX25V4006E	4Mb	4KB / 64KB	Single / Dual	75(x1), 70(x2)	150mil 8-SOP, 8-WSON(6x5mm), 8-USON (2x3mm)
MX25V8006E	8Mb	4KB / 64KB	Single / Dual	75(x1), 70(x2)	150mil 8-SOP, 8-WSON(6x5mm)

2.5V Serial Flash Family: MXSMIO® (Multi-I/O) Series

Part Number	Density	Organization	I/O Bus	Frequency (MHz)	Package
MX25V4035	4Mb	4KB / 32KB / 64KB	Single / Dual / Quad	66(x1), 50(x2, x4)	150mil 8-SOP, 8-WSON(6x5mm)
MX25V8035	8Mb	4KB / 32KB / 64KB	Single / Dual / Quad	66(x1), 50(x2, x4)	150mil 8-SOP, 8-WSON(6x5mm)

1.8V MXSMIO® Family

Part Number	Density	Organization	I/O Bus	Frequency (MHz)	Package	Feature
MX25U2033E	2Mb	4KB / 32KB / 64KB	Single / Dual / Quad	80(x1, x2), 70(x4)	150mil 8-SOP, 8-WSON(6x5mm), 8-USON(4x4mm), WLCSP	
MX25U4033E	4Mb	4KB / 32KB / 64KB	Single / Dual / Quad	80(x1, x2), 70(x4)	150mil 8-SOP, 8-WSON(6x5mm), 8-USON(4x4mm), WLCSP	
MX25U8033E	8Mb	4KB / 32KB / 64KB	Single / Dual / Quad	80(x1, x2), 70(x4)	150mil 8-SOP, 200mil 8-SOP, 8-WSON(6x5mm), 8-USON(4x4mm), WLCSP	
MX25U8035E	8Mb	4KB / 32KB / 64KB	Single / Dual / Quad	104(x1, x4), 84(x2)	150mil 8-SOP, 200mil 8-SOP, 8-WSON(6x5mm), 8-USON(4x4mm)	QPI
MX25U1635E	16Mb	4KB / 32KB / 64KB	Single / Dual / Quad	104(x1, x4), 84(x2)	150mil 8-SOP, 200mil 8-SOP, 8-WSON(6x5mm), 8-USON(4x4mm)	QPI
MX25U1635F	16Mb	4KB / 32KB / 64KB	Single / Dual / Quad	104(x1, x4), 84(x2)	200mil 8-SOP, 8-USON(4x3mm), WLCSP	QPI
MX25U3235F	32Mb	4KB / 32KB / 64KB	Single / Dual / Quad	104(x1, x4), 84(x2)	200mil 8-SOP, 8-WSON(6x5mm), WLCSP	QPI
MX25U6435F	64Mb	4KB / 32KB / 64KB	Single / Dual / Quad	104(x1, x4), 84(x2)	200mil 8-SOP, 8-WSON(6x5mm), WLCSP	QPI
MX25U12835F	128Mb	4KB / 32KB / 64KB	Single / Dual / Quad	104(x1, x4), 84(x2)	300mil 16-SOP, 8-WSON(6x5mm), 8-WSON(8x6mm)	QPI
MX25U25635F	256Mb	4KB / 32KB / 64KB	Single / Dual / Quad	133(x1, x2, x4)	300mil 16-SOP, 8-WSON(8x6mm), 8-WSON(8x6mm) 3.4X4.3EP	QPI
MX66U51235F	512 Mb	4KB / 32KB / 64KB	Single / Dual / Quad	108(x1, x2, x4)	300mil 16-SOP, 8-WSON(8x6mm) 3.4X4.3EP, 24-TFBGA(6x8mm)	QPI

Applications

Segment	Application	512Kb	1Mb	2Mb	4Mb	8Mb	16Mb	32Mb	64Mb	128Mb	256Mb	512Mb	1Gb
Computer	Mobile PC				●	●	●	●	●				
	Desktop PC					●	●	●	●				
	Server						●	●	●	●	●	●	
	Printer						●	●	●	●	●	●	
	Graphics	●	●	●									
	HDD		●	●	●	●							
	ODD			●	●	●	●	●					
Communication	DSL					●	●	●	●				
	Cable Modem						●	●	●	●			
	IAD/ Home Gateway								●	●	●	●	●
	LTE							●	●	●	●	●	●
	IP Phone							●	●	●			
	AP Router				●	●	●	●	●				
Consumer	Digital TV					●	●	●	●				
	Digital Audio/ DAM		●	●	●								
	DVD Player					●	●	●					
	Set Top Box					●	●	●	●	●	●	●	●
Automotive	After Market/ In Cabin	●	●	●	●	●	●	●	●	●	●	●	

Serial Flash Example

MX 25L 256 35 F M I - 10 G

DEVICE :

25L/66L: 3V, Serial Flash
 25U/66U: 1.8V, Serial Flash
 25V: 2.5V, Serial Flash

DENSITY :

512 : 512Kb
 10 : 1Mb
 20 : 2Mb
 40 : 4Mb
 80 : 8Mb
 16 : 16Mb
 32 : 32Mb
 64 : 64Mb
 128 : 128Mb
 256/257 : 256Mb
 512 : 512Mb
 1G : 1Gb

MODE :

06: Single-in, Dual-out
 26: Default lock protection
 33/35: MXSMIO® - Multi-in, Multi-out
 36: MXSMIO® - Single-in, Multi-out
 45: MXSMIO® - Multi-in, Multi-out Duplex
 50: MXSMIO® - Security RPMC type
 55: MXSMIO® - Security type
 73: MXSMIO® Duplex- Multi I/O, Quad I/O Permanent Enable

OPTION :

G : RoHS Compliant

SPEED :

08 : 133MHz
 10 : 104MHz/108MHz
 12 : 80MHz/86MHz
 13 : 75MHz
 15 : 66MHz
 20 : 45MHz

TEMPERATURE RANGE :

I : Industrial (-40°C to 85°C)
 S : Automotive Grade 3 (-40°C to 85°C)
 R : Automotive Grade 2 (-40°C to 105°C)
 Q : Automotive Grade 1 (-40°C to 125°C)

PACKAGE TYPE :

P : PDIP
 ZN : 8-WSON
 Z2 : 8-WSON (8x6mm)
 Z3 : 8-WSON (6x5mm)
 Z4 : 8-WSON (8x6mm) 3,4X4.3EP
 ZU : 8-USON
 ZB : 8-USON (4x3mm)
 M : SOP
 MB : 200mil 8-VSOP
 O : 173mil 8-TSSOP
 X : BGA
 BA/BB/BC : WLCSP

GENERATION

BA/BB/BC : WLCSP



Collection of LCD/LED TV Repair Tips V4.0- BONUS

Micron Technology Inc- Micron SPI Flash Memory

Serial (SPI)		
M25P	M25PX	N25Q
<p>Low pin count, cost savings</p> <p>N25Q (SPI Multi I/O):</p> <ul style="list-style-type: none"> x1–x4 (quad I/O) 1.8V or 3V 4KB subsector erase 16Mb–1Gb 108 MHz sync reads (54 MB/s) <p>M25P (SPI Single I/O):</p> <ul style="list-style-type: none"> 3V 512Kb–16Mb 50 MHz or 75 MHz sync reads (6 MB/s or 9 MB/s) <p>M25PX (SPI Single I/O):</p> <ul style="list-style-type: none"> 3V 8Mb–16Mb 75 MHz sync reads (19 MB/s) <p>Mx5PE (SPI Single I/O):</p> <ul style="list-style-type: none"> 3V 1Mb–16Mb 75 MHz sync reads (19 MB/s) 		

Application Requirements	512Kb	1Mb	2Mb	4Mb	8Mb	16Mb	32Mb	64Mb	128Mb	256Mb	512Mb	1Gb
Standard SPI	M25P	M25P	M25P	M25P	M25P	M25P	N25Q	N25Q	N25Q	N25Q	N25Q	N25Q
Small-parameter EEPROM replacement	M25PE	M25PE	M25PE	M25PE	M25PE							
Alternative hardware configuration	M45PE	M45PE	M45PE	M45PE	M45PE							
Dual-I/O usage					M25PX	M25PX	N25Q	N25Q	N25Q	N25Q	N25Q	N25Q
High-performance SPI, quad I/O, XIP							N25Q	N25Q	N25Q	N25Q	N25Q	N25Q
1.8V (low-power consumption)							N25Q	N25Q	N25Q	N25Q	N25Q	N25Q



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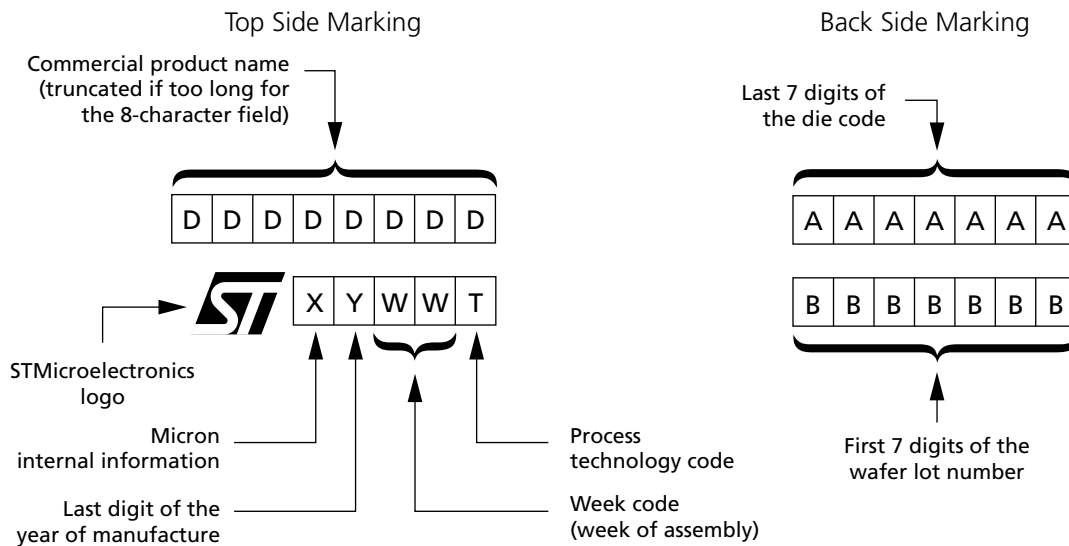
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Part Marks for M25P/PE/PX and M45PE Product Families

The following product marks are for the M25P, M25PE, M25PX, and M45PE product families' packages.

Figure 1: SO8N Component Marks, Package Option: MN



The SO8N (SOP2-8/150 mil) package is an 8-pin, narrow SOIC. The part number option code is MN.

Table 1: SO8N (MN) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (8-Digit)	Technology Code	Technology	Temperature Grade	Type
M25P	512K	M25P05-AVMN6P or TP	25P05VP	Y	150nm	-40 to 85°C	STD
M25P	1Mb	M25P10-AVMN6P or TP	25P10VP	Y	150nm	-40 to 85°C	STD
M25P	1Mb	M25P10-AVMN3TP/Y	25P10VPA	Y	150nm	-40 to 125°C	Auto
M25P	1Mb	M25P10-AVMN6TPYA	25P10VPA	Y	150nm	-40 to 85°C	Auto
M25PE	1Mb	M25PE10-VMN6P or TP	25PE10VP	4	110nm	-40 to 85°C	STD
M25PE	1Mb	M25PE10-VMN3PB or TP	25PE10VP	A	110nm	-40 to 125°C	Auto
M25PE	1Mb	M25PE10-VMN6PBA or TPBA	25PE10VP	A	110nm	-40 to 85°C	Auto
M45PE	1Mb	M45PE10-VMN6P or TP	45PE10VP	4	110nm	-40 to 85°C	STD
M25P	2Mb	M25P20-VMN6PB or TP	25P20VP	4	110nm	-40 to 85°C	STD
M25P	2Mb	M25P20-VMN3PB or TP	25P20VPA	4	110nm	-40 to 125°C	Auto
M25P	2Mb	M25P20-VMN6TPBA	25P20VPA	4	110nm	-40 to 85°C	Auto
M25PE	2Mb	M25PE20-VMN6P or TP	25PE20VP	4	110nm	-40 to 85°C	STD
M25PE	2Mb	M25PE20-VMN6TPBA	25PE20VP	A	110nm	-40 to 85°C	Auto
M45PE	2Mb	M45PE20-VMN6P or TP	45PE20VP	4	110nm	-40 to 85°C	STD
M25P	4Mb	M25P40-VMN6PB or TP	25P40VP	4	110nm	-40 to 85°C	STD

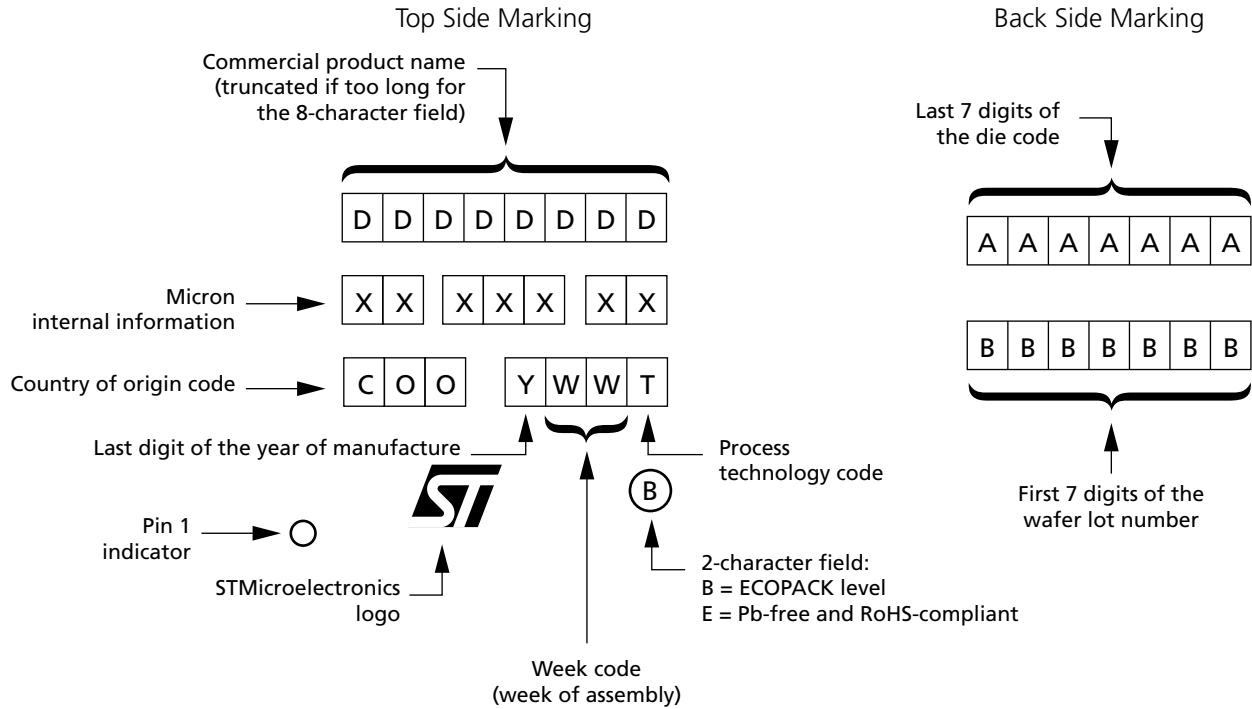


TN-12-24: Serial Flash Product Marks Part Marks for M25P/PE/PX and M45PE Product Families

Table 1: SO8N (MN) Marketing Part Numbers (Continued)

Family	Density	Marketing Part Number	Marking (8-Digit)	Technology Code	Technology	Temperature Grade	Type
M25P	4Mb	M25P40-VMN3PB or TP	25P40VPA	4	110nm	-40 to 125°C	Auto
M25P	4Mb	M25P40-VMN6PBA or TP	25P40VPA	4	110nm	-40 to 85°C	Auto
M25PE	4Mb	M25PE40-VMN6P or TP	25PE40VP	4	110nm	-40 to 85°C	STD
M25PE	4Mb	M25PE40-VMN6TPBA	25PE40VP	A	110nm	-40 to 125°C	Auto
M45PE	4Mb	M45PE40-VMN6P or TP	45PE40VP	4	110nm	-40 to 85°C	STD
M25P	8Mb	M25P80-VMN6P or TP	25P80VP	4	110nm	-40 to 85°C	STD
M25P	8Mb	M25P80-VMN3PB or TP	25P80VPA	4	110nm	-40 to 125°C	Auto
M25P	8Mb	M25P80-VMN6PBA or TP	25P80VPA	4	110nm	-40 to 85°C	Auto
M25PE	8Mb	M25PE80-VMN6P or TP	25PE80VP	4	110nm	-40 to 85°C	STD
M25PE	8Mb	M25PE80-VMN6TPBA	25PE80VP	A	110nm	-40 to 125°C	Auto
M45PE	8Mb	M45PE80-VMN6P or TP	45PE80VP	4	110nm	-40 to 85°C	STD
M25PX	8Mb	M25PX80-VMN6P or TP	25PX80VP	4	110nm	-40 to 85°C	STD
M25PX	8Mb	M25PX80-VMN6TPBA	25PX80VA	4	110nm	-40 to 85°C	Auto
M25P	16Mb	M25P16-VMN6P or TP	25P16VP	4	110nm	-40 to 85°C	STD
M25P	16Mb	M25P16-VMN3PB or TP or YP	25P16VPA	4	110nm	-40 to 125°C	Auto
M25P	16Mb	M25P16-VMN6PBA or TP or YP	25P16VPA	4	110nm	-40 to 85°C	Auto
M25PX	16Mb	M25PX16-VMN6P or TP	25PX16VP	4	110nm	-40 to 85°C	STD
M25PX	16Mb	M25PX16-VMN6TPBA	25PX16VP	4	110nm	-40 to 85°C	Auto

Figure 2: SO8W Component Marks, Package Option: MW



The SO8W (SOP2-8/208 mil) package is an 8-pin, wide SOIC. The part number option code is MW.

Table 2: SO8W (MW) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (8-Digit)	Technology Code	Technology	Temperature Grade	Type
M25PE	4Mb	M25PE40-VMW6G or TG	25PE40VG	4	110nm	-40 to 85°C	STD
M45PE	4Mb	M45PE40-VMW6G or TG	45PE40VG	4	110nm	-40 to 85°C	STD
M25P	8Mb	M25P80-VMW6G or TG	25P80VG	4	110nm	-40 to 85°C	STD
M25P	8Mb	M25P80-VMW6TG6A	25P80VAG	4	110nm	-40 to 85°C	AUTO
M25PE	8Mb	M25PE80-VMW6G or TG	25PE80VG	4	110nm	-40 to 85°C	STD
M45PE	8Mb	M45PE80-VMW6G or TG	45PE80VG	4	110nm	-40 to 85°C	STD
M25PX	8Mb	M25PX80-VMW6G or TG	25PX80VG	4	110nm	-40 to 85°C	STD
M25P	16Mb	M25P16-VMW6G or TG	25P16VG	4	110nm	-40 to 85°C	STD
M25PE	16Mb	M25PE16-VMW6G or TG	25PE16VG	4	110nm	-40 to 85°C	STD
M45PE	16Mb	M45PE16-VMW6G or TG	45PE16VG	4	110nm	-40 to 85°C	STD
M25PX	16Mb	M25PX16-VMW6G or TG	25PX16VG	4	110nm	-40 to 85°C	STD
M25P	32Mb	M25P32-VMW6G or TG	25P32V6G	4	110nm	-40 to 85°C	STD
M25P	32Mb	M25P32-VMW3TGB	25P32VAG	4	110nm	-40 to 125°C	Auto
M25P	32Mb	M25P32-VMW6TG6A	25P32VAG	4	110nm	-40 to 85°C	Auto

Table 2: SO8W (MW) Marketing Part Numbers (Continued)

Family	Density	Marketing Part Number	Marking (8-Digit)	Technology Code	Technology	Temperature Grade	Type
M25PX	32Mb	M25PX32-VMW6E or F	25PX32VE	4	110nm	-40 to 85°C	STD

Figure 3: SO16W Component Marks, Package Option: MF

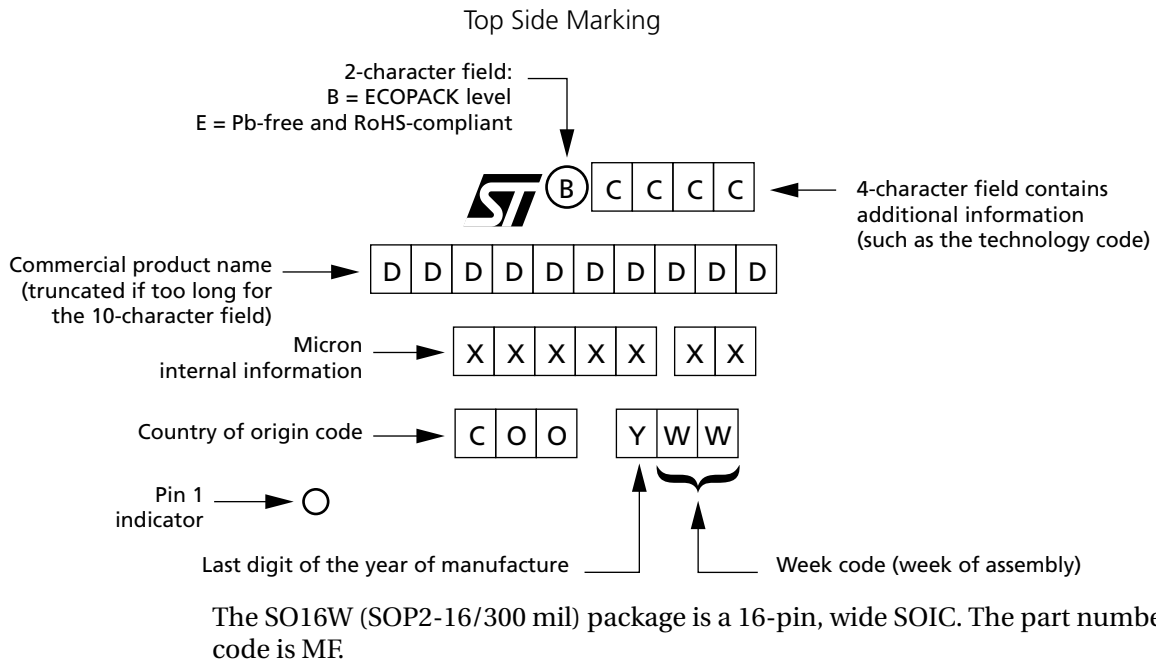
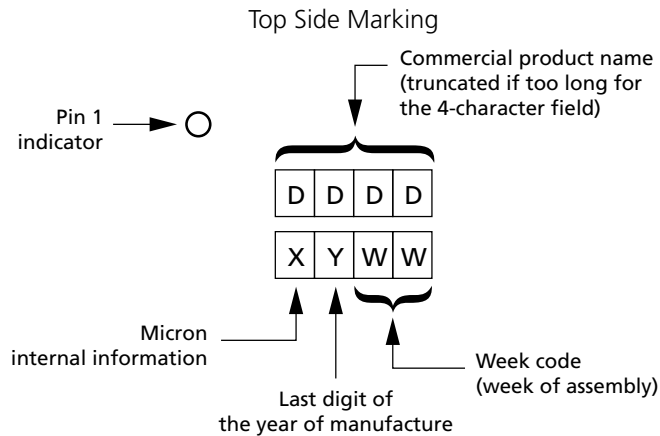


Table 3: SO16W (MF) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (10-Digit)	Technology Code	Technology	Temperature Grade	Type
M25P	16Mb	M25P16-VMF3PB or TP	25P16V6PA	4	110nm	-40 to 125°C	Auto
M25P	16Mb	M25P16-VMF6P or TP	25P16V6P	4	110nm	-40 to 85°C	STD
M25P	16Mb	M25P16-VMF6PBA	25P16V6PA	4	110nm	-40 to 85°C	Auto
M25P	32Mb	M25P32-VMF3TPB	25P32V6PA	4	110nm	-40 to 125°C	Auto
M25P	32Mb	M25P32-VMF6P or TP	25P32V6P	4	110nm	-40 to 85°C	STD
M25P	64Mb	M25P64-VMF6P or TP	25P64V6P	4	110nm	-40 to 85°C	STD
M25P	64Mb	M25P64-VMF3TPB	25P64V3PA	4	110nm	-40 to 125°C	Auto
M25P	64Mb	M25P64-VMF6TPBA	25P64V6PA	4	110nm	-40 to 125°C	Auto
M25PX	64Mb	M25PX64-VMF6P or TP	25PX64VP	4	110nm	-40 to 85°C	STD
M25P	128Mb ¹	M25P128-VMF6PB or TP	25P28V6P	A	65nm	-40 to 85°C	STD

Note: 1. The part marks for the 128Mb package do not include the ST logo shown above.

Figure 4: DFN/3x2 Component Marks, Package Option: MB

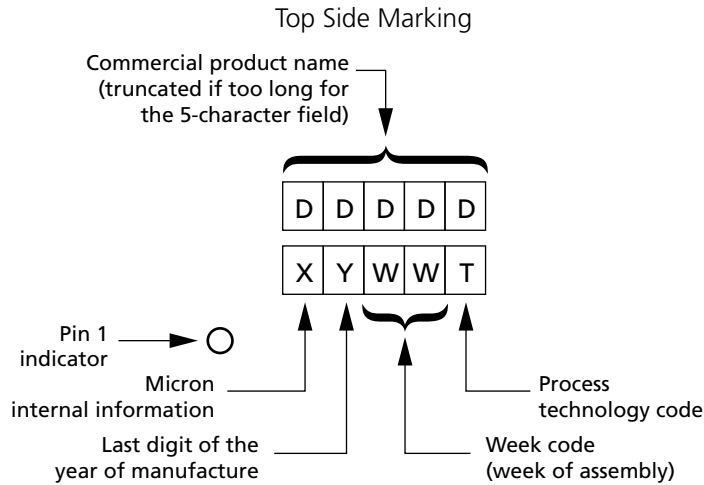


The DFN/3x2 (U-PDFN-8/3x2) package is a 3mm x 2mm, ultra thin plastic SOIC with eight terminal pads. The part number option code is MB.

Table 4: DFN/3x2 (MB) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (4-Digit)	Technology Code	Technology	Temperature Grade	Type
M25P	1Mb	M25P10-AVMB6TG	P10V	Y	150nm	-40 to 85°C	STD
M25P	1Mb	M25P10-AVMB3TP/Y	P10A	Y	150nm	-40 to 125°C	Auto
M25P	4Mb	M25P40-VMB6TPB	P40V	4	110nm	-40 to 85°C	STD
M25P	4Mb	M25P40-VMB3TPB	P40A	4	110nm	-40 to 125°C	Auto

Figure 5: DFN/3x4 Component Marks, Package Option: MC

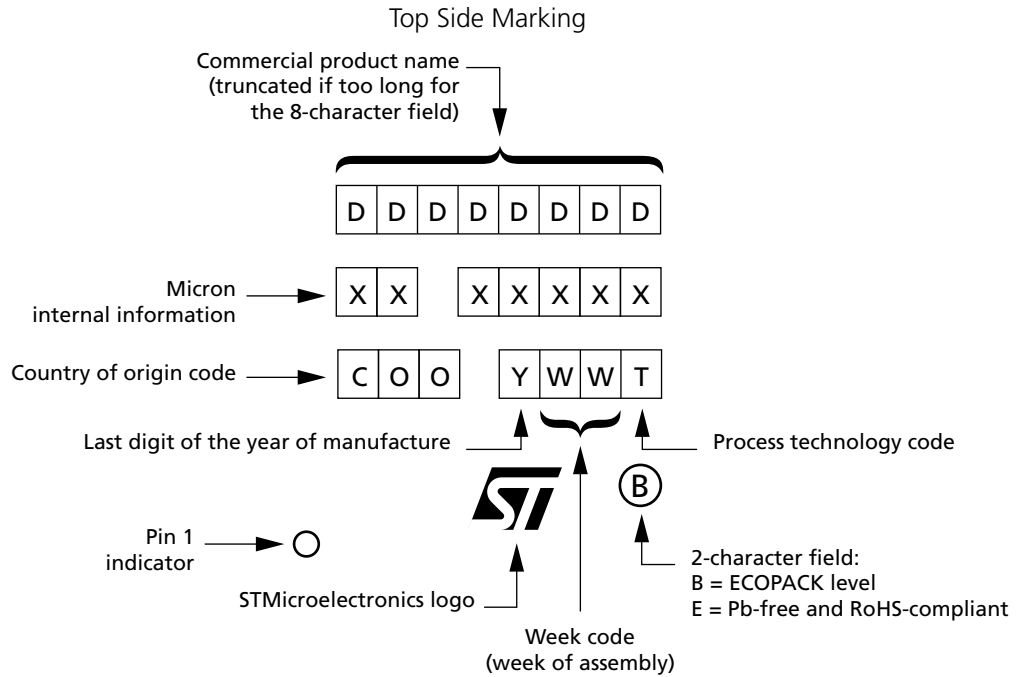


The DFN/3x4 (U-PDFN-8/3x4) package is a 3mm x 4mm, ultra thin plastic SOIC with eight terminal pads. The part number option code is MC.

Table 5: DFN/3x4 (MC) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (5-Digit)	Technology Code	Technology	Temperature Grade	Type
M25P	4Mb	M25P40-VMC6GB or TG	25P10	4	110nm	-40 to 85°C	STD
M25PE	4Mb	M25PE40-VMC6G or TG	25PE40	4	110nm	-40 to 85°C	STD
M25P	8Mb	M25P80-VMC6G or TG	25P80	4	110nm	-40 to 85°C	STD
M25P	16Mb	M25P16-VMC6G or TG	25P16	4	110nm	-40 to 85°C	STD

Figure 6: DFN/6x5 Component Marks, Package Option: MP



The DFN/6x5 (V-PDFN-8/6x5) package is a 6mm x 5mm, ultra thin plastic SOIC with eight terminal pads. The part number option code is MP.

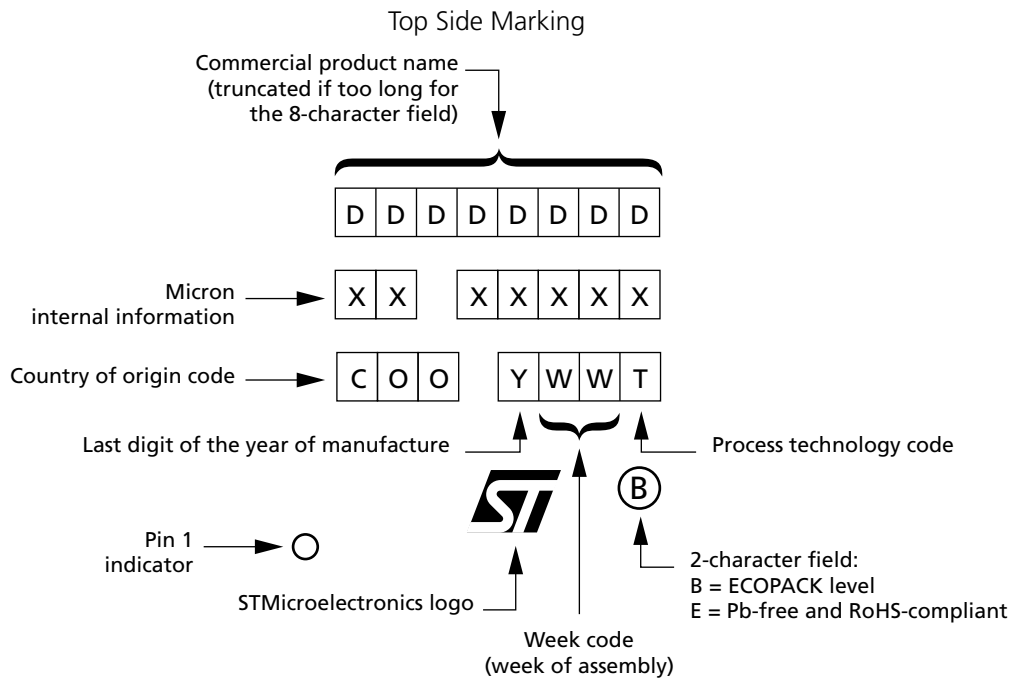
Table 6: DFN/6x5 (MP) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (8-Digit)	Technology Code	Technology	Temperature Grade	Type
M25P	512K	M25P05-AVMP6G or TG	25P05VG	Y	150nm	-40 to 85°C	STD
M25P	1Mb	M25P10-AVMP6G or TG	25P10VG	Y	150nm	-40 to 85°C	STD
M25PE	1Mb	M25PE10-VMP6G or TG	25PE10VG	4	110nm	-40 to 85°C	STD
M45PE	1Mb	M45PE10-VMP6G or TG	45PE10VG	4	110nm	-40 to 85°C	STD
M25P	2Mb	M25P20-VMP6G or TG	25P20VG	4	110nm	-40 to 85°C	STD
M25PE	2Mb	M25PE20-VMP6G or TG	25PE20VG	4	110nm	-40 to 85°C	STD
M45PE	2Mb	M45PE20-VMP6G or TG	45PE20VG	4	110nm	-40 to 85°C	STD
M25P	4Mb	M25P40-VMP6G or TG	25P40VG	4	110nm	-40 to 85°C	STD
M25PE	4Mb	M25PE40-VMP6G or TG	25PE40VG	4	110nm	-40 to 85°C	STD
M45PE	4Mb	M45PE40-VMP6G or TG	45PE40VG	4	110nm	-40 to 85°C	STD
M25P	8Mb	M25P80-VMP6G or TG	25P80V6G	4	110nm	-40 to 85°C	STD
M25PE	8Mb	M25PE80-VMP6G or TG	25PE80VG	4	110nm	-40 to 85°C	STD
M45PE	8Mb	M45PE80-VMP6G or TG	45PE80VG	4	110nm	-40 to 85°C	STD
M25PX	8Mb	M25PX80-VMP6G or TG	25PX80VG	4	110nm	-40 to 85°C	STD
M25P	16Mb	M25P16-VMP6G or TG	25P16V6G	4	110nm	-40 to 85°C	STD
M25PE	16Mb	M25PE16-VMP6G or TG	25PE16VG	4	110nm	-40 to 85°C	STD
M45PE	16Mb	M45PE16-VMP6G or TG	45PE16VG	4	110nm	-40 to 85°C	STD

Table 6: DFN/6x5 (MP) Marketing Part Numbers (Continued)

Family	Density	Marketing Part Number	Marking (8-Digit)	Technology Code	Technology	Temperature Grade	Type
M25PX	16Mb	M25PX16-VMN6G or TG	25PX16VG	4	110nm	-40 to 85°C	STD
M25P	32Mb	M25P32-VMP6G or TG	25P32V6G	4	110nm	-40 to 85°C	STD
M25PX	32Mb	M25PX32-VMP6E or F	25PX32VE	4	110nm	-40 to 85°C	STD
M25PX	32Mb	M25PX32-VMP6FBA	25PX32VA	4	110nm	-40 to 85°C	Auto

Figure 7: DFN/8x6 Component Marks, Package Option: ME



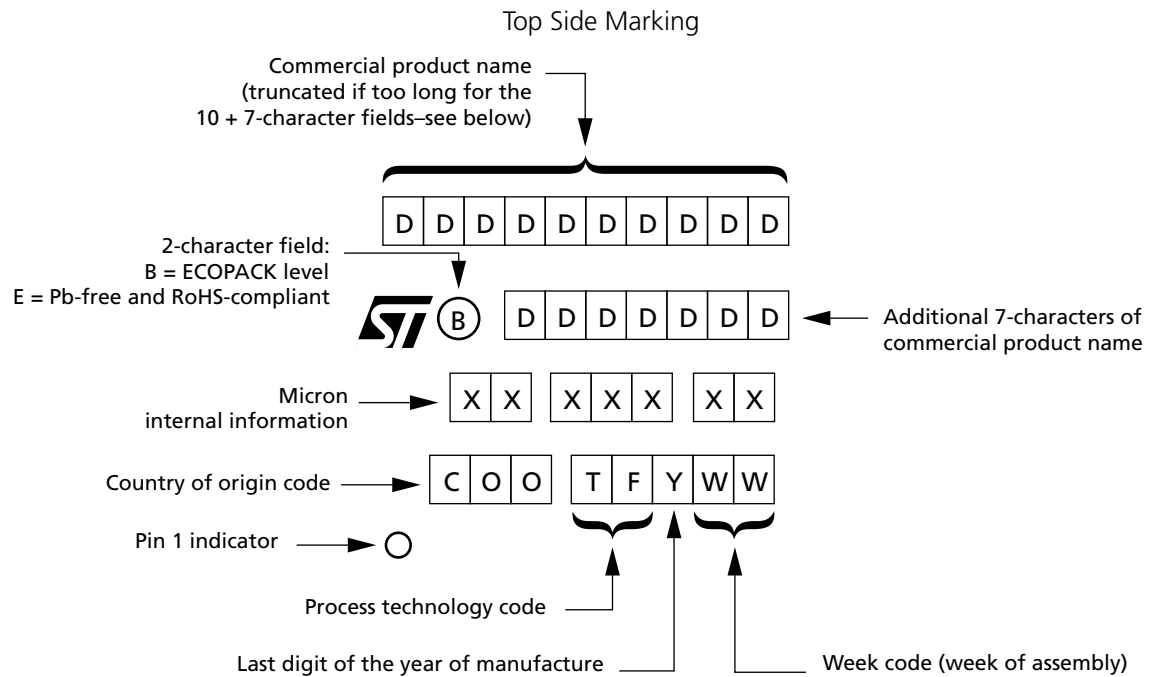
The DFN/8x6 (V-PDFN-8/8x6) package is a 8mm x 6mm, ultra thin plastic SOIC with eight terminal pads. The part number option code is ME.

Table 7: DFN/8x6 (ME) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (8-Digit)	Technology Code	Technology	Temperature Grade	Type
M25P	16Mb	M25P16-VME6G or TG	25P16V6G	4	110nm	-40 to 85°C	STD
M25P	32Mb	M25P32-VME6G or TG	25P32V6G	4	110nm	-40 to 85°C	STD
M25P	64Mb	M25P64-VME6G or TG	25P64V6G	4	110nm	-40 to 85°C	STD
M25PX	64Mb	M25PX64-VME6G or TG	25PX64VG	4	110nm	-40 to 85°C	STD
M25P	128Mb ¹	M25P128-VME6G or TG	25P28V6G	A	65nm	-40 to 85°C	STD

Note: 1. The part marks for the 128Mb package do not include the ST logo shown above.

Figure 8: TBGA 24 Component Marks, Package Option: ZM



The TBGA 24 (T-PBGA-24b05/6x8) package is a 6mm x 8mm, 24-ball, thin plastic ball grid array. The part number option code is ZM.

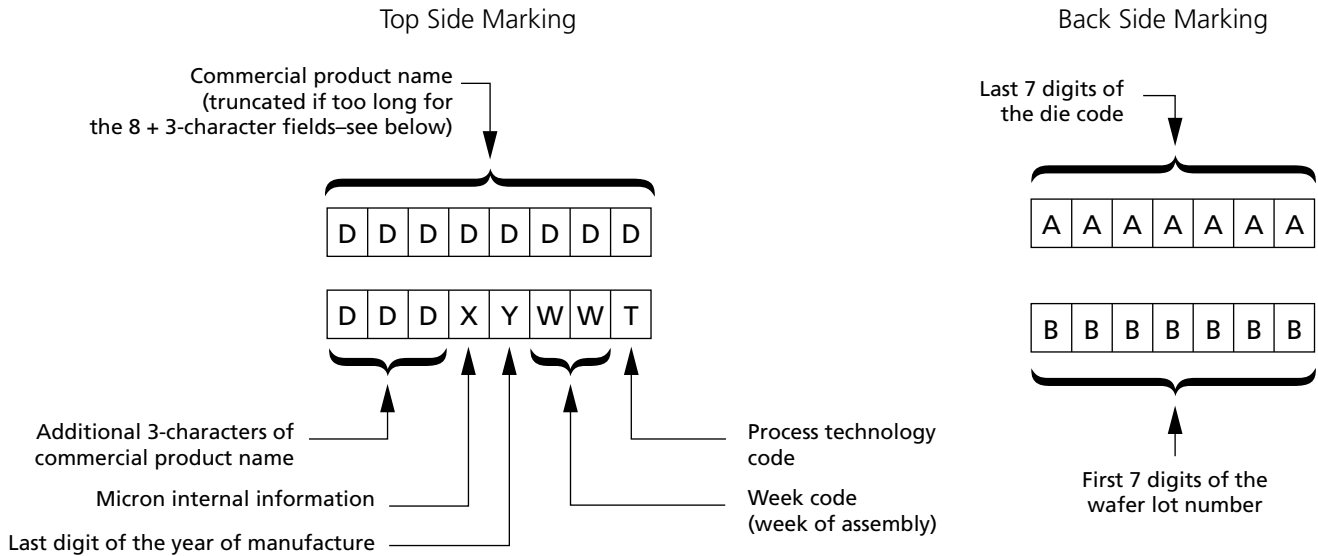
Table 8: TBGA 24 (ZM) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (10 + 7-Digit)	Technology Code	Technology	Temperature Grade	Type
M25PX	16Mb	M25PX16SOVZM6TP	25PX16SO VZM6P	4	110nm	-40 to 85°C	STD
M25PX	16Mb	M25PX16STVZM6TP	25PX16ST VZM6P	4	110nm	-40 to 85°C	STD
M25PX	16Mb	M25PX16-VZM6P or TP	25PX16 VZM6P	4	110nm	-40 to 85°C	STD
M25PX	32Mb	M25PX32SOVZM6E	25PX32SO VZM6E	4	110nm	-40 to 85°C	STD
M25PX	32Mb	M25PX32-VZM6E or F	25PX32 VZM6E	4	110nm	-40 to 85°C	STD
M25PX	32Mb	M25PX32-VZM6FBA	25PX32 VZM6BA	4	110nm	-40 to 85°C	Auto
M25PX	64Mb	M25PX64-VZM6P or TP	25PX64 VZM6P	4	110nm	-40 to 85°C	STD

Part Marks for N25Q Product Family

The following product marks are for the N25Q product family's packages.

Figure 9: SO8N Component Marks, Package Option: SC

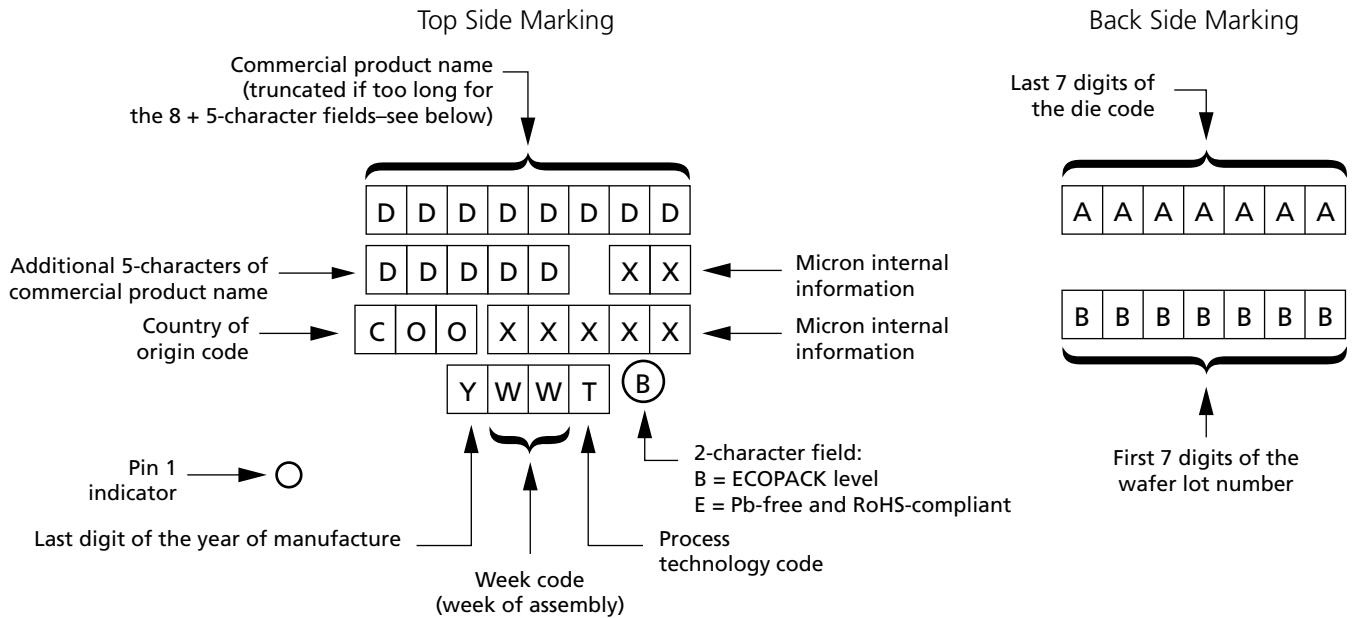


The SO8N (SOP2-8/150 mil) package is an 8-pin, narrow SOIC. The part number option code is SC.

Table 9: SO8N (SC) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (8 + 3-Digit)	Technology Code	Technology	Temperature Grade	Type
N25Q	16Mb	N25Q016A11ESC40F or G	25Q01611 E40	A	65nm	-40 to 85°C	STD
N25Q	32Mb	N25Q032A13ESC40F or G	25Q03213 E40	A	65nm	-40 to 85°C	STD
N25Q	32Mb	N25Q032A13ESCA0F	25Q03213 EA0	A	65nm	-40 to 125°C	Auto

Figure 10: SO8W V1 Component Marks, Package Option: SE

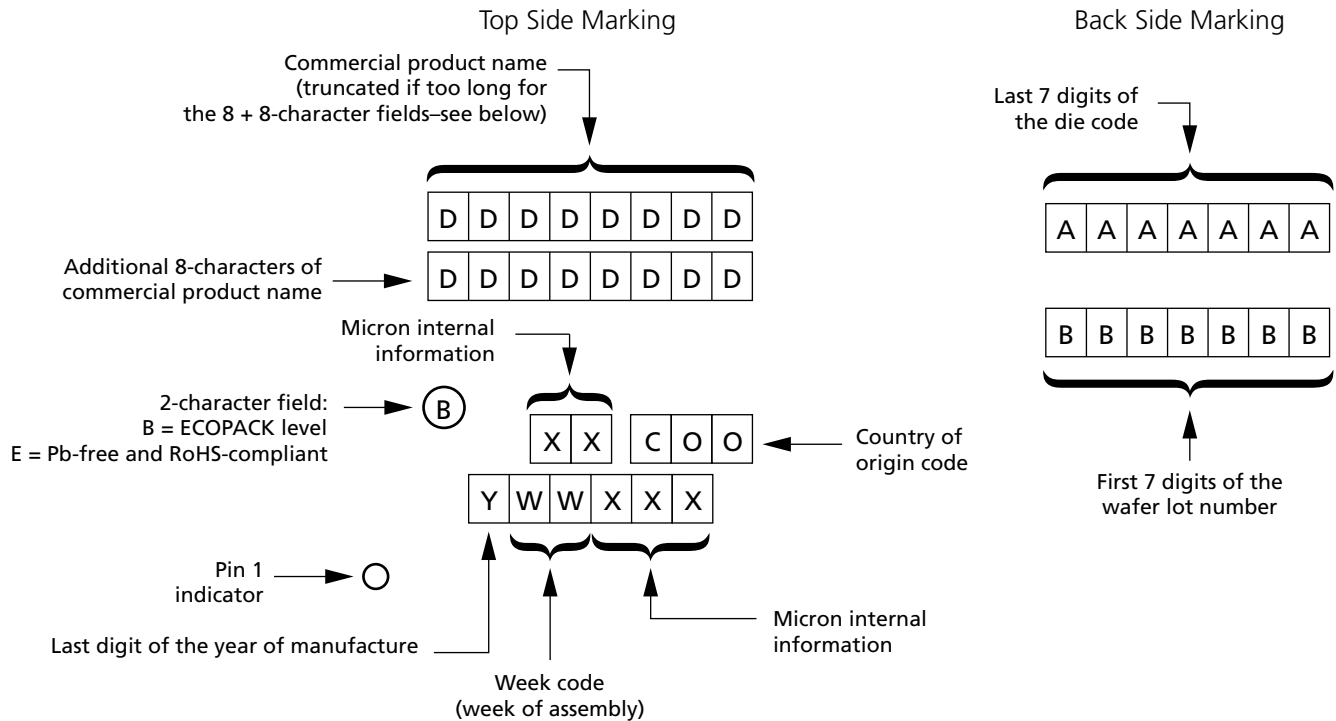


The SO8W (SOP2-8/208 mil) V1 package is an 8-pin, wide SOIC. The part number option code is SE.

Table 10: SO8W V1 (SE) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (8 + 5-Digit)	Technology Code	Technology	Temperature Grade	Type
N25Q	32Mb	N25Q032A11ESE40F or G	25Q03211 E40	A	65nm	-40 to 85°C	STD
N25Q	32Mb	N25Q032A13ESE40F or G	25Q03213 E40	A	65nm	-40 to 85°C	STD
N25Q	32Mb	N25Q032A11ESEA0F	25Q03213 EA0	A	65nm	-40 to 125°C	Auto

Figure 11: SO8W V2 Component Marks, Package Option: SE

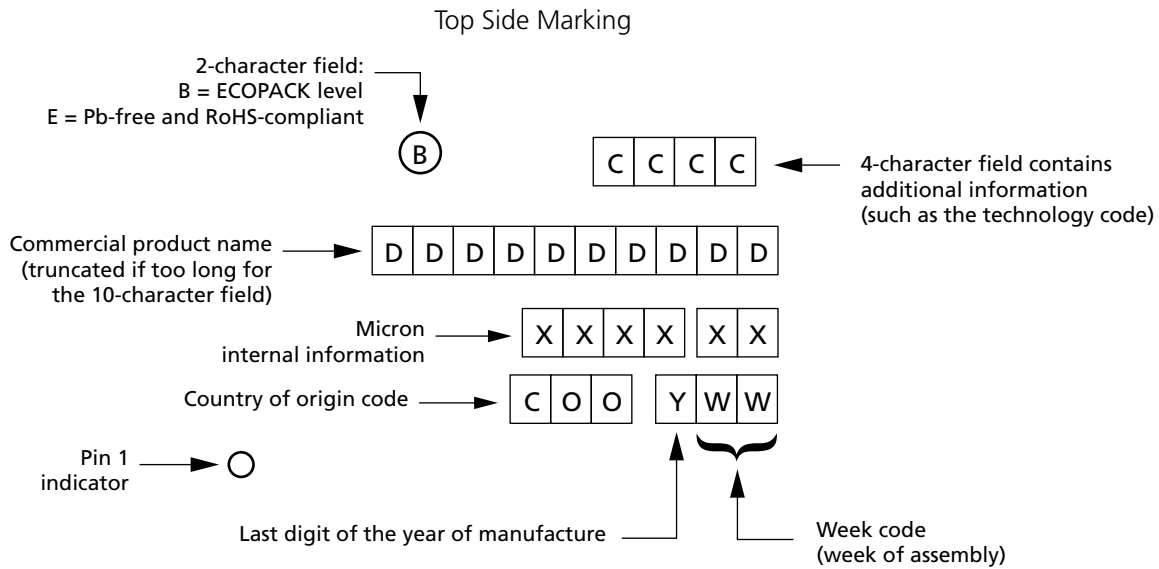


The SO8W (SOP2-8/208 mil) V2 package is an 8-pin, wide (208-mil) SOIC. The part number option code is SE.

Table 11: SO8W V2 (SE) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (8 + 8-Digit)	Technology	Temperature Grade	Type
N25Q	64Mb	N25Q064A11ESE40F or G	25Q064A 11E40	65nm	-40 to 85°C	STD
N25Q	64Mb	N25Q064A11ESEA0F	25Q064A 11EA0	65nm	-40 to 125°C	Auto
N25Q	64Mb	N25Q064A13ESE40E or F or G	25Q064A 13E40	65nm	-40 to 85°C	STD
N25Q	64Mb	N25Q064A13ESEH0F	25Q064A 13EA0	65nm	-40 to 85°C	Auto
N25Q	64Mb	N25Q064A13ESE4ME or F or G	25Q064A 13E4M	65nm	-40 to 85°C	STD
N25Q	128Mb	N25Q128A11ESE40F or G	25Q128A 11E40	65nm	-40 to 85°C	STD
N25Q	128Mb	N25Q128A13ESE40E or F or G	25Q128A 13E40	65nm	-40 to 85°C	STD

Figure 12: SO16W V1 Component Marks, Package Option: SF

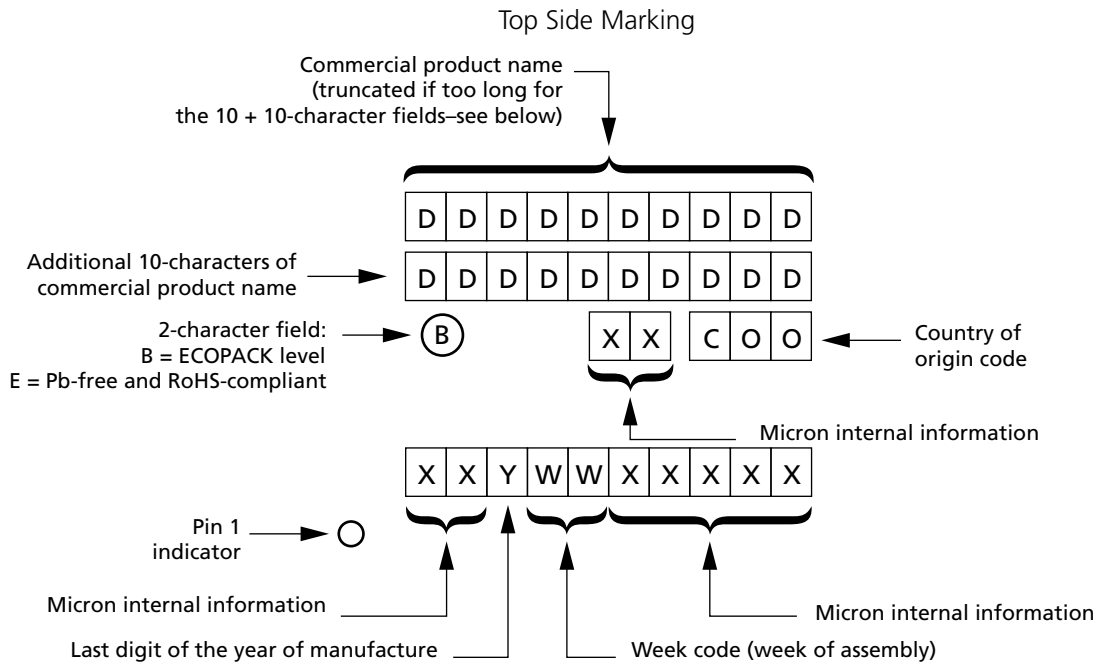


The SO16W (SOP2-16/300 mil) V1 package is a 16-pin, wide (300-mil) SOIC. The part number option code is SF.

Table 12: SO16W V1 (SF) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (10-Digit)	Technology Code (4-Digit)	Technology	Temperature Grade	Type
N25Q	32Mb	N25Q032A11ESF40F or G	25Q03211	E40A	65nm	-40 to 85°C	STD
N25Q	32Mb	N25Q032A13ESF40F or G	25Q03213	E40A	65nm	-40 to 85°C	STD
N25Q	32Mb	N25Q032A13ESFA0F	25Q03213	EA0A	65nm	-40 to 125°C	Auto
N25Q	32Mb	N25Q032A13ESFH0F	25Q03213	EA0A	65nm	-40 to 85°C	Auto
N25Q	128Mb	N25Q128A13BSFH0F	25Q2813BH0	A	65nm	-40 to 85°C	Auto

Figure 13: SO16W V2 Component Marks, Package Option: SF



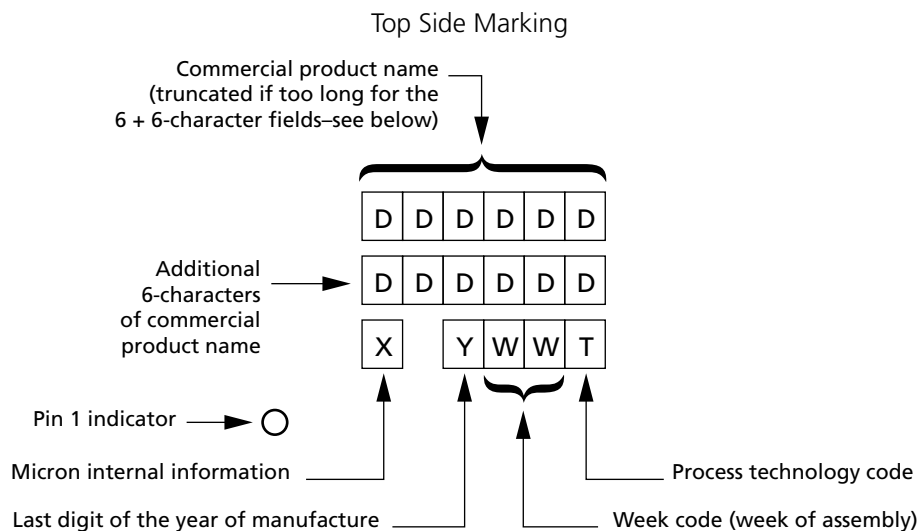
The SO16W (SOP2-16/300 mil) V2 package is a 16-pin, wide (300-mil) SOIC. The part number option code is SF.

Table 13: SO16W V2 (SF) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (10 + 10-Digit)	Technology	Temperature Grade	Type
N25Q	64Mb	N25Q064A13ESF40E or F or G	25Q064A 13E40	65nm	-40 to 85°C	STD
N25Q	64Mb	N25Q064A13ESFA0F	25Q064A 13EA0	65nm	-40 to 125°C	Auto
N25Q	64Mb	N25Q064A13ESFH0E or F	25Q064A 13EA0	65nm	-40 to 85°C	Auto
N25Q	128Mb	N25Q128A11ESF40F or G	25Q128A 11E40	65nm	-40 to 85°C	STD
N25Q	128Mb	N25Q128A13ESF40E or F or G	25Q128A 13E40	65nm	-40 to 85°C	STD
N25Q	128Mb	N25Q128A13ESFA0F	25Q128A 13EA0	65nm	-40 to 125°C	Auto
N25Q	128Mb	N25Q128A13ESFH0E or F	25Q128A 13EA0	65nm	-40 to 85°C	Auto
N25Q	256Mb	N25Q256A11ESF40F or G	25Q256A 11E40	65nm	-40 to 85°C	STD
N25Q	256Mb	N25Q256A81ESF40F or G	25Q256A 81E40	65nm	-40 to 85°C	STD
N25Q	256Mb	N25Q256A13ESF40F or G	25Q256A 13E40	65nm	-40 to 85°C	STD
N25Q	256Mb	N25Q256A13ESFA0F	25Q256A 13EA0	65nm	-40 to 125°C	Auto
N25Q	256Mb	N25Q256A13ESFH0F	25Q256A 13EA0	65nm	-40 to 85°C	Auto
N25Q	256Mb	N25Q256A73ESF40F or G	25Q256A 73E40	65nm	-40 to 85°C	STD
N25Q	256Mb	N25Q256A83ESF40F or G	25Q256A 83E40	65nm	-40 to 85°C	STD
N25Q	256Mb	N25Q256A83ESFA0F	25Q256A 83EA0	65nm	-40 to 125°C	Auto

Table 13: SO16W V2 (SF) Marketing Part Numbers (Continued)

Family	Density	Marketing Part Number	Marking (10 + 10-Digit)	Technology	Temperature Grade	Type
N25Q	512Mb	N25Q512A11GSF40F or G	25Q512A 11G40	65nm	-40 to 85°C	STD
N25Q	512Mb	N25Q512A81GSF40F or G	25Q512A 81G40	65nm	-40 to 85°C	STD
N25Q	512Mb	N25Q512A13GSF40F or G	25Q512A 13G40	65nm	-40 to 85°C	STD
N25Q	512Mb	N25Q512A13GSFA0F	25Q512A 13GA0	65nm	-40 to 125°C	Auto
N25Q	512Mb	N25Q512A83GSF40F or G	25Q512A 83G40	65nm	-40 to 85°C	STD
N25Q	512Mb	N25Q512A83GSFA0F	25Q512A 83GA0	65nm	-40 to 125°C	Auto
N25Q	1Gb	N25Q00AA11GSF40F or G	25Q00AA 11G40	65nm	-40 to 85°C	STD
N25Q	1Gb	N25Q00AA13GSF40F or G	25Q00AA 13G40	65nm	-40 to 85°C	STD

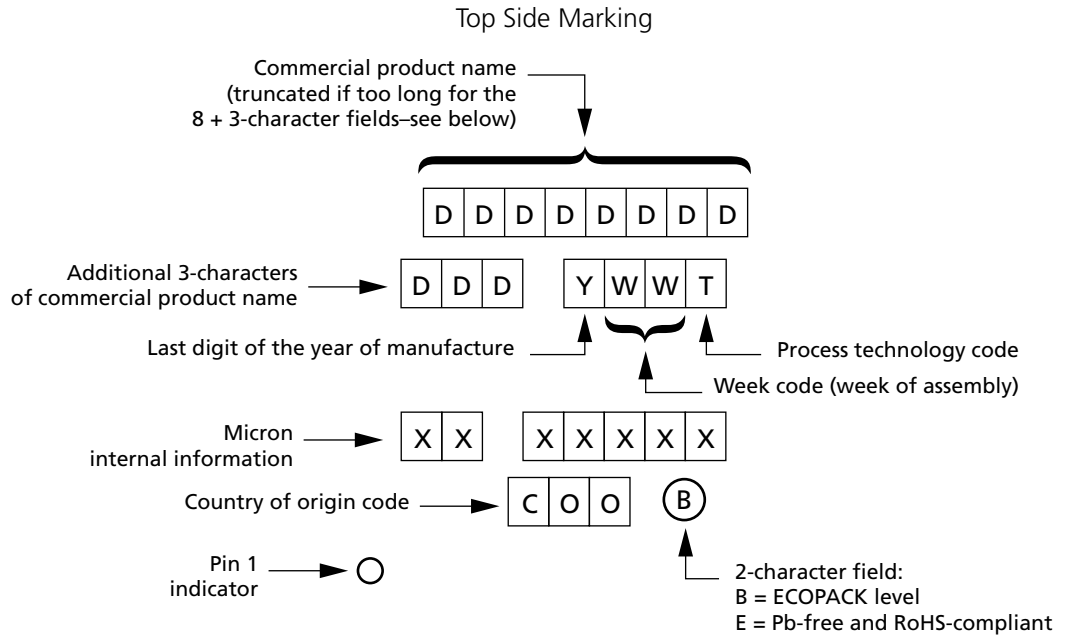
Figure 14: DFN/3x4 V1 Component Marks, Package Option: F4


The DFN/3x4 (U-PDFN-8/3x4) package is a 3mm x 4mm, ultra thin plastic SOIC with eight terminal pads. The part number option code is F4.

Table 14: DFN/3x4 V1 (F4) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (6 + 6-Digit)	Technology Code	Technology	Temperature Grade	Type
N25Q	32Mb	N25Q032A13EF440E or F	25Q032 13E40	A	65nm	-40 to 85°C	STD

Figure 15: DFN/6x5 V1 Component Marks, Package Option: F6

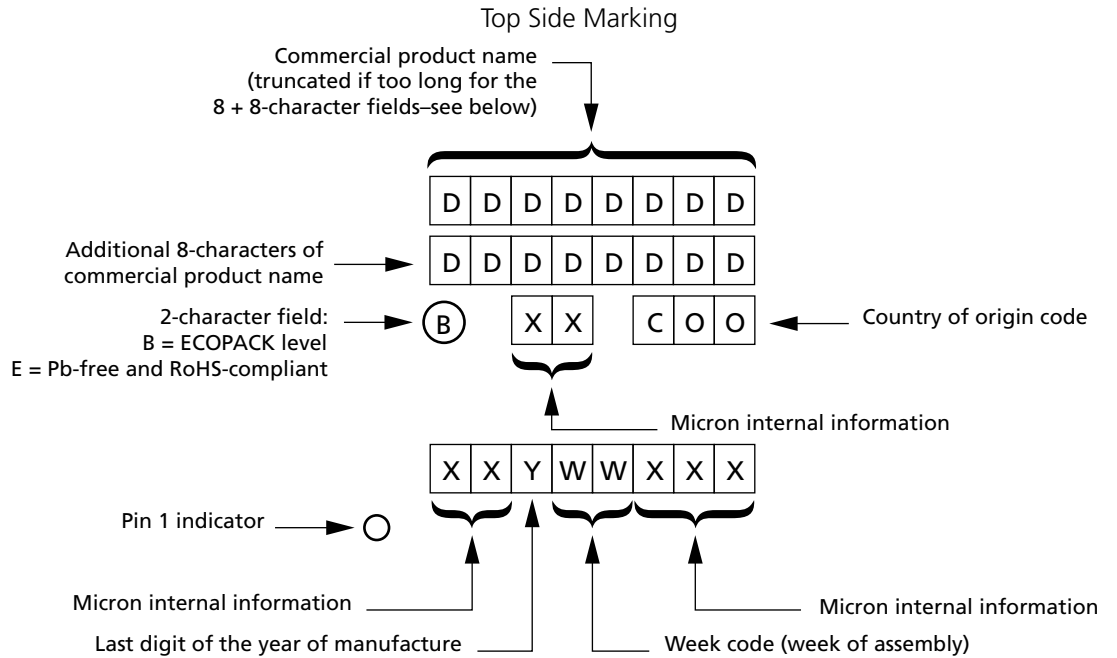


The DFN/6x5 (V-PDFN-8/6x5) package is a 6mm x 5mm, very thin plastic SOIC with eight terminal pads. The part number option code is F6.

Table 15: DFN/6x5 V1 (F6) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (8 + 3-Digit)	Technology Code	Technology	Temperature Grade	Type
N25Q	16Mb	N25Q016A11EF640F or F	25Q01611 E40	A	65nm	-40 to 85°C	STD
N25Q	32Mb	N25Q032A11EF640E or F	25Q03211 E40	A	65nm	-40 to 85°C	STD
N25Q	32Mb	N25Q032A13EF640E or F	25Q03213 E40	A	65nm	-40 to 85°C	STD

Figure 16: DFN/6x5 V2 Component Marks, Package Option: F6

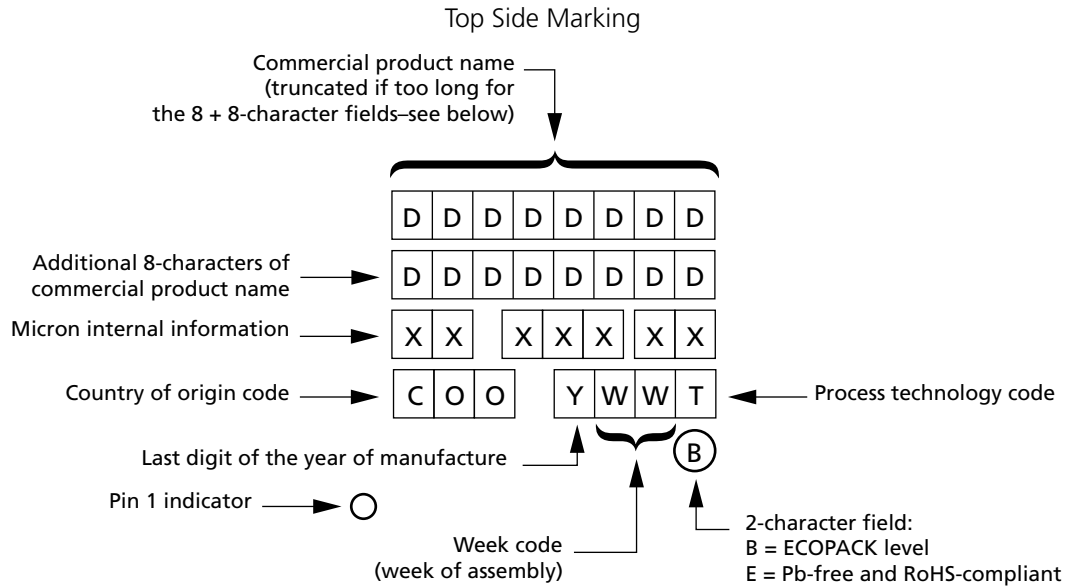


The DFN/6x5 (V-PDFN-8/6x5) package is a 6mm x 5mm, very thin plastic SOIC with eight terminal pads. The part number option code is F6.

Table 16: DFN/6x5 V2 (F6) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (8 + 8-Digit)	Technology	Temperature Grade	Type
N25Q	64Mb	N25Q064A11EF640E or F	25Q064A 11E40	65nm	-40 to 85°C	STD
N25Q	64Mb	N25Q064A13EF640E or F	25Q064A 13E40	65nm	-40 to 85°C	STD
N25Q	64Mb	N25Q064A13EF64ME or F	25Q064A 13E4M	65nm	-40 to 85°C	STD

Figure 17: DFN/8x6 V1 Component Marks, Package Option: F8

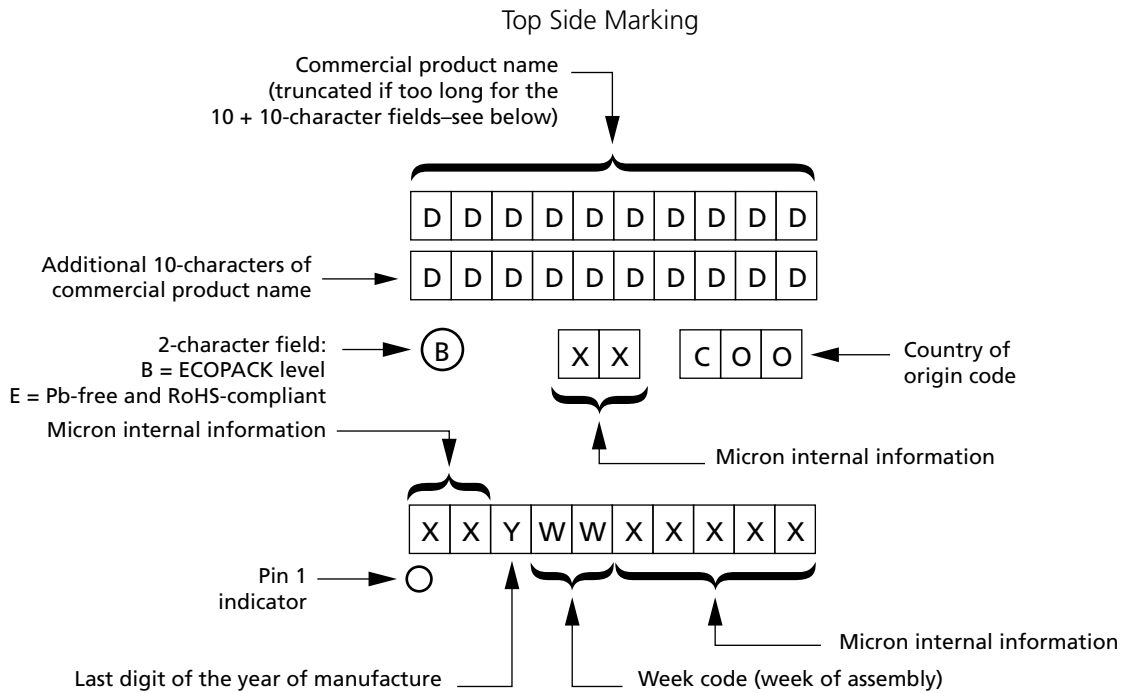


The DFN/8x6 (V-PDFN-8/8x6) V1 package is a 8mm x 6mm, ultra thin plastic SOIC with eight terminal pads. The part number option code is F8.

Table 17: DFN/8x6 V1 (F8) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (8+ 8-Digit)	Technology Code	Technology	Temperature Grade	Type
N25Q	32Mb	N25Q032A13EF840E or F	25Q032 13E40	A	65nm	-40 to 85°C	STD

Figure 18: DFN/8x6 V2 Component Marks, Package Option: F8

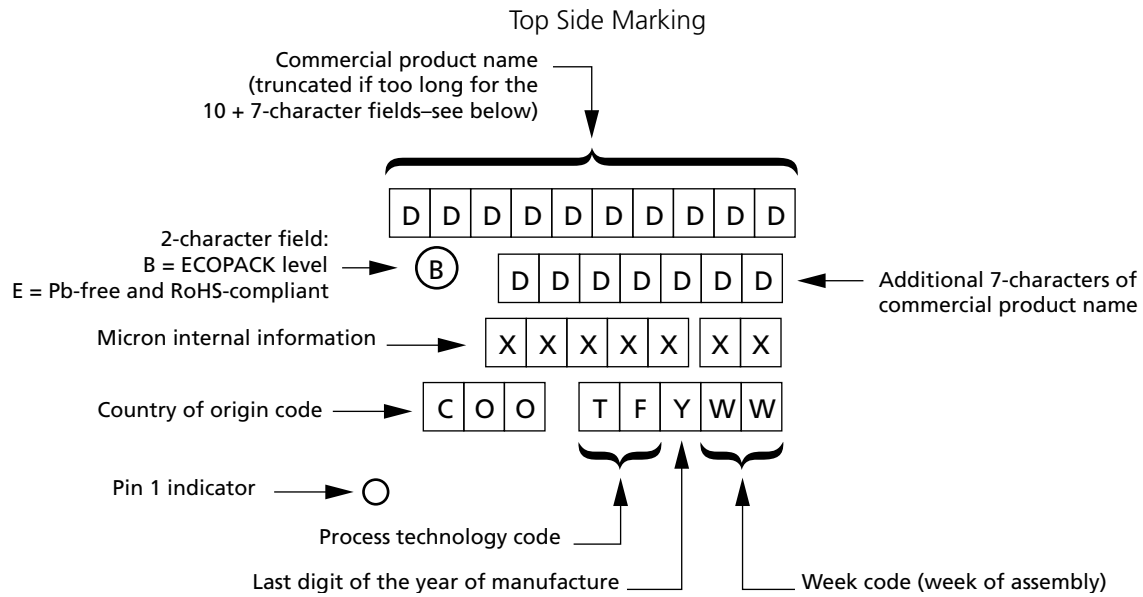


The DFN/8x6 (U-PDFN-8/8x6) V2 package is a 8mm x 6mm, ultra thin plastic SOIC with eight terminal pads. The part number option code is F8.

Table 18: DFN/8x6 V2 (F8) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (10 + 10-Digit)	Technology	Temperature Grade	Type
N25Q	64Mb	N25Q064A13EF840E or F	25Q064A 13E40	65nm	-40 to 85°C	STD
N25Q	64Mb	N25Q064A13EF8A0F	25Q064A 13EA0	65nm	-40 to 125°C	Auto
N25Q	64Mb	N25Q064A13EF8H0E or F	25Q064A 13EA0	65nm	-40 to 85°C	Auto
N25Q	128Mb	N25Q128A11EF840E or F	25Q128A 11E40	65nm	-40 to 85°C	STD
N25Q	128Mb	N25Q128A13EF840E or F	25Q128A 13E40	65nm	-40 to 85°C	STD
N25Q	128Mb	N25Q128A13EF8A0F	25Q128A 13EA0	65nm	-40 to 125°C	Auto
N25Q	256Mb	N25Q256A11EF840E or F	25Q256A 11E40	65nm	-40 to 85°C	STD
N25Q	256Mb	N25Q256A13EF840E or F	25Q256A 13E40	65nm	-40 to 85°C	STD
N25Q	256Mb	N25Q256A33EF840F or F	25Q256A 33E40	65nm	-40 to 85°C	STD
N25Q	256Mb	N25Q256A13EF84A0F	25Q256A 13EA0	65nm	-40 to 125°C	Auto
N25Q	512Mb	N25Q512A13EF840E or F	256Q512A 13G40	65nm	-40 to 85°C	STD

Figure 19: TBGA 24 V1 Component Marks, Package Option: 12

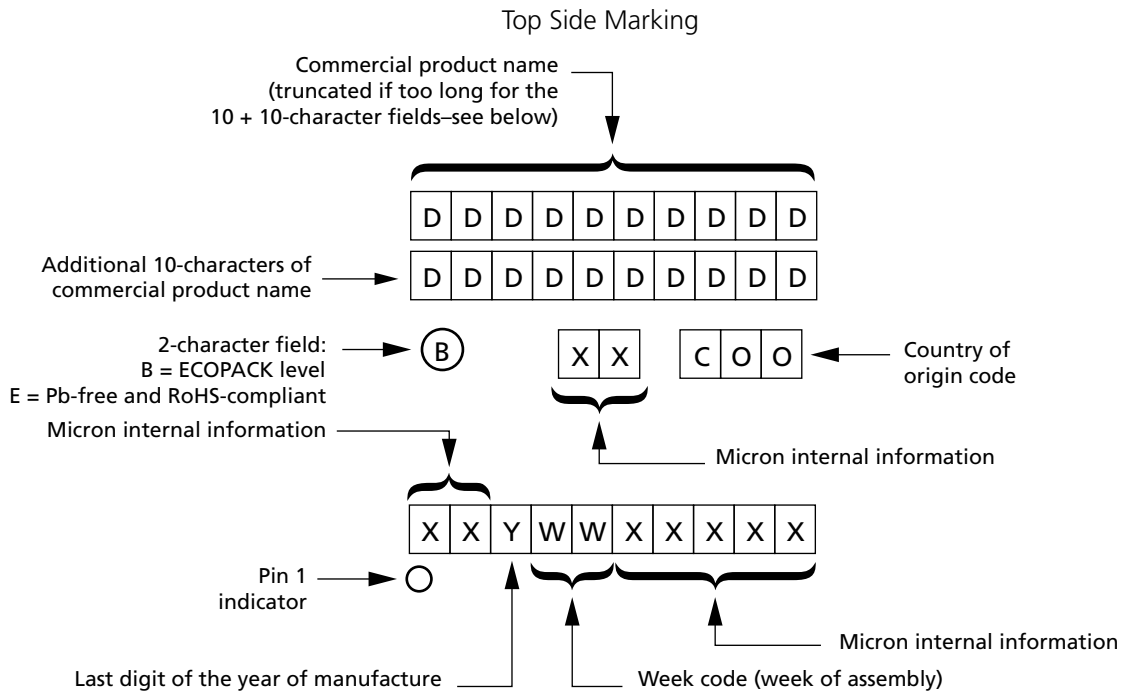


The TBGA 24 (T-PBGA-24b05/6x8) V1 package is a 6mm x 8mm, 24-ball, thin plastic ball grid array. The part number option code is 12.

Table 19: TBGA 24 V1 (12) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (10 + 7-Digit)	Technology Code	Technology	Temperature Grade	Type
N25Q	32Mb	N25Q032A13E1240E or F	25Q032 13E40	A	65nm	-40 to 85°C	STD

Figure 20: TBGA 24 V2 Component Marks, Package Option: 12



The TBGA 24 (T-PBGA-24b05/6x8) V2 package is a 6mm x 8mm, 24-ball, thin plastic ball grid array. The part number option code is 12.

Table 20: TBGA 24 V2 (12) Marketing Part Numbers

Family	Density	Marketing Part Number	Marking (10 + 10-Digit)	Technology	Temperature Grade	Type
N25Q	64Mb	N25Q064A13E1240E or F	25Q064A 13E40	65nm	-40 to 85°C	STD
N25Q	64Mb	N25Q064A13E12H0F	25Q064A 13EA0	65nm	-40 to 85°C	Auto
N25Q	128Mb	N25Q128A11E1240E or F	25Q128A 11E40	65nm	-40 to 85°C	STD
N25Q	128Mb	N25Q128A13E1240E or F	25Q128A 13E40	65nm	-40 to 85°C	STD
N25Q	128Mb	N25Q128A13E12A0F	25Q128A 13EA0	65nm	-40 to 125°C	Auto
N25Q	256Mb	N25Q256A11E1240E or F	25Q256A 11E40	65nm	-40 to 85°C	STD
N25Q	256Mb	N25Q256A13E1240E or F	25Q256A 13E40	65nm	-40 to 85°C	STD
N25Q	256Mb	N25Q256A83E1240E or F	25Q256A 83E40	65nm	-40 to 85°C	STD
N25Q	256Mb	N25Q256A13E12A0F	25Q256A 13EA0	65nm	-40 to 125°C	Auto
N25Q	512Mb	N25Q512A11G1240E or F	25Q512A 11G40	65nm	-40 to 85°C	STD
N25Q	512Mb	N25Q512A13G1240E or F	25Q512A 13G40	65nm	-40 to 85°C	STD
N25Q	512Mb	N25Q512A83G1240E or F	25Q512A 83G40	65nm	-40 to 85°C	STD
N25Q	1Gb	N25Q00AA11G1240E or F	25Q00AA 11G40	65nm	-40 to 85°C	STD
N25Q	1Gb	N25Q00AA13G1240E or F	25Q00AA 13G40	65nm	-40 to 85°C	STD

3.0V SPI Flash Memory

SPANSION- SPI Flash

DENSITY	PAGE MODE	SIMUL-OP	BURST MODE	PART NUMBER	ACCESS TIMES (NS)/CLOCK FREQUENCY	PACKAGES	TEMP	V _{cc} (V)	V _{I/O} (V)	ORG	SECTOR	FEATURES
1 Gb				S70FL01GS	133MHz (Single I/O), 104MHz (Multi I/O), 80MHz (DDR) ¹	16-Pin SO	-40° to +85°C, -40° to +105°C	2.7-3.6		x1, x2, x4	U	Dual Die stack; Sectors: uniform 256KB; H/W & S/W write protect; OTP sector
512 Mb				S25FL512S	133MHz (Single I/O), 104MHz (Multi I/O), 80MHz (DDR) ¹	16-Pin SO, 24-ball BGA (6x8 mm)	-40° to +85°C, -40° to +105°C	2.7-3.6	1.65-3.6	x1, x2, x4	U	Sectors: uniform 256KB; H/W & S/W write protect; OTP sector
256 Mb				S25FS256S	133MHz (Single I/O, Multi I/O), 80MHz (DDR)	16-pin SO, 8-contact WSON (6x8mm), 24-ball BGA (6x8mm)	-40° to +85°C, -40° to +105°C	1.7-2.0		x1, x2, x4	U	Sectors: uniform 256KB or uniform 64KB with eight 4KB sub-sectors and one 32KB sub-sector top/bottom, all remaining sectors 64KB ; H/W & S/W write protect; OTP sector
256 Mb				S25FL256S	133MHz (Single I/O), 104MHz (Multi I/O), 80MHz (DDR) ¹	16-Pin SO, 8-contact WSON (6x8 mm), 24-ball BGA (6x8 mm)	-40° to +85°C, -40° to +105°C	2.7-3.6	1.65-3.6	x1, x2, x4	U	Sectors: uniform 256KB or uniform 64KB with 32 top/bottom 4KB sub-sectors; H/W & S/W write protect; OTP sector
256 Mb				S70FL256P	104MHz (Single I/O), 80MHz (Multi I/O)	16-Pin SO, 24-ball BGA (6x8 mm)	-40° to +85°C	2.7-3.6		x1, x2, x4	U	Sectors: uniform 256KB or uniform 64KB with 32 top/bottom 4KB sub-sectors; H/W & S/W write protect; OTP sector; ACC pin
128 Mb				S25FS128S	133MHz (Single I/O, Multi I/O), 80MHz (DDR)	8-pin SO 208mil, 8-contact WSON (6x5mm), 24-ball BGA (6x8mm)	-40° to +85°C, -40° to +105°C	1.7-2.0		x1, x2, x4	U	Sectors: uniform 256KB or uniform 64KB with eight 4KB sub-sectors and one 32KB sub-sector top/bottom, all remaining sectors 64KB ; H/W & S/W write protect; OTP sector
128 Mb				S25FL127S	108MHz (Single I/O, Multi I/O)	16-Pin SO 8-pin SO 208mil 8-contact WSON (6x5mm) 24-ball BGA (6x8mm)	-40° to +85°C, -40° to +105°C	2.7-3.6 (for Vcc)		x1, x2, x4 (for ORG)	U (for sector)	Sectors: uniform 256KB or uniform 64KB with 16 top/bottom 4KB sub-sectors, all remaining sectors 64KB; H/W & S/W write protect; OTP sectors
128 Mb				S25FL128S	133MHz (Single I/O), 104MHz (Multi I/O), 80MHz (DDR) ¹	16-Pin SO, 8-contact WSON (6x8 mm), 24-ball BGA (6x8 mm)	-40° to +85°C, -40° to +105°C	2.7-3.6	1.65-3.6	x1, x2, x4	U	Sectors: uniform 256KB or uniform 64KB with 32 top/bottom 4KB sub-sectors; H/W & S/W write protect; OTP sector
128 Mb				S25FL129P	104MHz (Single I/O), 80MHz (Multi I/O)	16-Pin SO, 8-contact WSON (6x8 mm), 24-ball BGA (6x8 mm)	-40° to +85°C, -40° to +105°C	2.7-3.6		x1, x2, x4	U	Sectors: uniform 256KB or uniform 64KB with 32 top/bottom 4KB sub-sectors; H/W & S/W write protect; OTP sector; ACC pin
128 Mb				S25FL128P	104MHz (Single I/O)	16-Pin SO, 8-contact WSON (6x8 mm)	-40° to +85°C	2.7-3.6		x1	U	Sectors: uniform 256KB or uniform 64KB; H/W & S/W write protect; x8 Parallel Program Mode; ACC pin
64 Mb				S25FL064P	104MHz (Single I/O), 80MHz (Multi I/O)	16-Pin SO, 8-contact WSON (6x8 mm), 24-ball BGA (6x8 mm), KGW	-40° to +85°C, -40° to +105°C	2.7-3.6		x1, x2, x4	U	Sectors: uniform 64KB with 32 top/bottom 4KB sub-sectors, H/W & S/W write protect; OTP sector; ACC pin
64 Mb				S25FL164K	108MHz (Multi I/O)	8-Pin SO 208mil, 16-Pin SO, 8-contact WSON (5x6 mm), 24-ball BGA (6x8 mm), KGW	-40° to +85°C, -40° to +105°C	2.7-3.6		x1, x2, x4	U	Sectors: uniform 4KB with 64KB block erase; H/W & S/W write protect; OTP sector; Program/erase suspend/resume
64 Mb				S25FL064K*	80MHz (Single I/O), 80MHz (Multi I/O)	8-Pin SO 208mil, 16-Pin SO	-40° to +85°C	2.7-3.6		x1, x2, x4	U	Sectors: uniform 4KB with 64KB block erase; H/W & S/W write protect; OTP sector; Program/erase suspend/resume.
32 Mb				S25FL032P	104MHz (Single I/O), 80MHz (Multi I/O)	8-Pin SO 208mil, 16-Pin SO, 8-contact USON (5x6 mm), 8-contact WSON (6x8 mm), 24-ball BGA (6x8 mm), KGW	-40° to +85°C, -40° to +105°C	2.7-3.6		x1, x2, x4	U	Sectors: uniform 64KB with 32 top/bottom 4KB sub-sectors, H/W & S/W write protect; OTP sector; ACC pin
32 Mb				S25FL132K	108MHz (Multi I/O)	8-Pin SO 208mil, 8-Pin SO 150mil, 8-contact WSON (5x6 mm), 24-ball BGA (6x8 mm), KGW	-40° to +85°C, -40° to +105°C	2.7-3.6		x1, x2, x4	U	Sectors: uniform 4KB with 64KB block erase; H/W & S/W write protect; OTP sector; Program/erase suspend/resume
16 Mb				S25FL116K	108MHz (Multi I/O)	8-Pin SO 208mil, 8-Pin SO 150mil, 8-contact WSON (5x6 mm), 24-ball BGA (6x8 mm), KGW	-40° to +85°C, -40° to +105°C	2.7-3.6		x1, x2, x4	U	Sectors: uniform 4KB with 64KB block erase; H/W & S/W write protect; OTP sector; Program/erase suspend/resume
16 Mb				S25FL216K	65MHz (Single I/O, Dual Output)	8-Pin SO 208mil, 8-Pin SO 150mil	-40° to +85°C	2.7-3.6		x1, x2	U	Sectors: uniform 4KB with 64KB block erase; H/W & S/W write protect
8 Mb				S25FL208K	76MHz (Single I/O, Dual Output)	8-Pin SO 208mil, 8-Pin SO 150mil	-40° to +85°C	2.7-3.6		x1, x2	U	Sectors: uniform 4KB with 64KB block erase; H/W & S/W write protect
4 Mb				S25FL204K	85MHz (Single I/O, Dual Output)	8-Pin SO 208mil, 8-Pin SO 150mil	-40° to +85°C	2.7-3.6		x1, x2	U	Sectors: uniform 4KB with 64KB block erase; H/W & S/W write protect

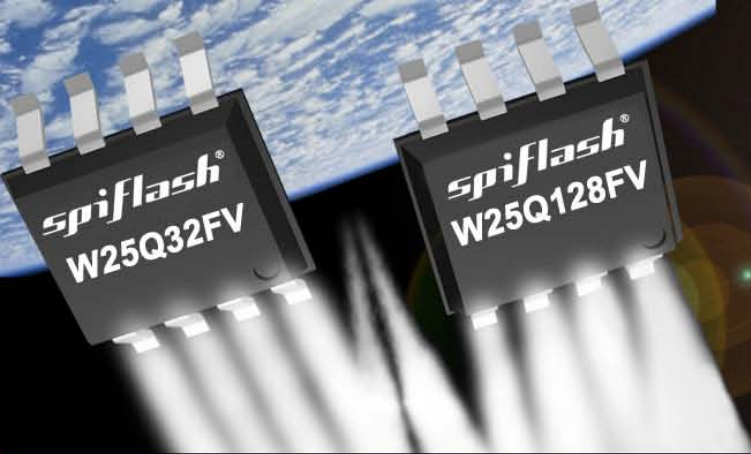
Sector: T: Top Boot, B: Bottom Boot, D: Dual Boot, U: Uniform Sectors, H: High-Protect, L: Low-Protect
 1) 3.0-3.6V. *Not recommended for new designs.

Collection of LCD/LED TV Repair Tips V4.0- BONUS

SST – Specification of Silicon Storage Technology Serial Flash Memory

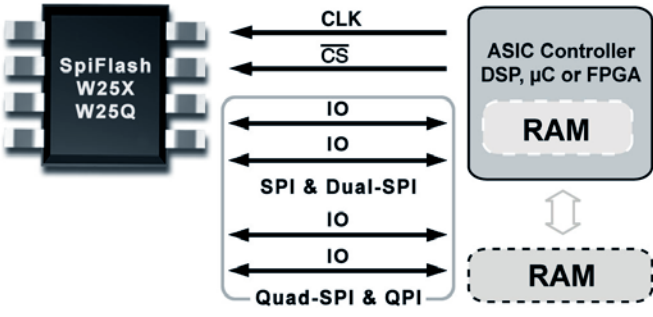
Device	Density	Voltage	Clock Speed	Packages
Serial Flash				
SST25VF512	512 Kb (64K x8)	2.7-3.6V	20 MHz	SOIC-8 (150mil), WSON-8
SST25VF010	1 Mb (128K x8)	2.7-3.6V	20 MHz	SOIC-8 (150mil), WSON-8
SST25VF020	2 Mb (256K x8)	2.7-3.6V	20 MHz	SOIC-8 (150mil), WSON-8
SST25LF020A	2 Mb (256K x 8)	3.0-3.6V	33 MHz	SOIC-8 (150mil), WSON-8
SST25VF040	4 Mb (512K x8)	2.7-3.6V	20 MHz	WSON-8
SST25LF040A	4 Mb (512K x8)	3.0-3.6V	33 MHz	SOIC-8 (200mil), WSON-8
SST25VF080	8 Mb (1Mb x8)	2.7-3.6V	20 MHz	SOIC-8 (200mil)
SST25LF080A	8 Mb (1Mb x8)	3.0-3.6V	33 MHz	SOIC-8 (200mil)
SST25VF016B	16 Mb (2Mb x8)	2.7-3.6V	33 MHz	SOIC-8 (200mil)
SST45LF010	1 Mb (128K x8)	3.0-3.6V	10 MHz	SOIC-8 (150mil), WSON-8

Product	Voltage	Density	Max. Cloc	Packages
SST25LF020A	3 - 3.6	2 Mbit	33 MHz	8/SOIC 150mil 8/TDFN-S
SST25PF020B	2.3 - 3.6	2 Mbit	80 MHz	8/SOIC 150mil 8/TDFN-S 8/USON
SST25VF010A	2.7 - 3.6	1 Mbit	33 MHz	8/CSP 8/SOIC 150mil 8/TDFN-S
SST25VF016B	2.7 - 3.6	16 Mbit	80 MHz	8/SOIJ 8/TDFN-S
SST25VF020	2.7 - 3.6	2 Mbit	20 MHz	8/SOIC 150mil 8/TDFN-S
SST25VF020B	2.7 - 3.6	2 Mbit	80 MHz	8/SOIC 150mil 8/TDFN-S 8/USON
SST25VF032B	2.7 - 3.6	32 Mbit	80 MHz	8/SOIJ 8/TDFN-S
SST25VF040B	2.7 - 3.6	4 Mbit	50 MHz	8/CSP 8/SOIC 8/SOIC 150mil 8/SOIJ 8/TDFN-S
SST25VF064C	2.7 - 3.6	64 Mbit	80 MHz	8/SOIJ-S 8/TDFN 16/SOIC 300mil
SST25VF080B	2.7 - 3.6	8 Mbit	50 MHz	8/PDIP 8/SOIC 150mil 8/SOIJ 8/TDFN-S 16/CSP
SST25VF512	2.7 - 3.6	512 Kbit	20 MHz	8/SOIC 150mil
SST25VF512A	2.7 - 3.6	512 Kbit	33 MHz	8/CSP 8/SOIC 150mil 8/TDFN-S
SST25WF020A	1.65 - 1.95	2 Mbit	40 MHz	8/SOIC 150mil 8/TDFN-S 8/USON
SST25WF040B	1.65 - 1.95	4 Mbit	40 MHz	8/SOIC 150mil 8/USON
SST25WF080B	1.65 - 1.95	8 Mbit	40 MHz	8/SOIC 150mil 8/USON
SST26VF016	2.7 - 3.6	16 Mbit	80 MHz	8/SOIJ 8/TDFN-S
SST26VF016B	2.7 - 3.6	16 Mbit	104 MHz	Please call for package information
SST26VF032	2.7 - 3.6	32 Mbit	80 MHz	8/SOIJ 8/TDFN-S
SST26VF032B	2.7 - 3.6	32 Mbit	104 MHz	Please call for package information
SST26VF064B	2.7 - 3.6	64 Mbit	104 MHz	Please call for package information
SST26WF016B	1.65 - 1.95	16 Mbit	104 MHz	Please call for package information
SST49LF008A	3 - 3.6	8 Mbit	33 MHz	32/PLCC 32/TSOP 40/TSOP
SST49LF016C	3 - 3.6	16 Mbit	33 MHz	32/PLCC 32/TSOP 40/TSOP
SST49LF080A	3 - 3.6	8 Mbit	33 MHz	32/PLCC 32/TSOP
SST49LF160C	3 - 3.6	16 Mbit	33 MHz	32/PLCC



SpiFlash® Memories with SPI, Dual-SPI, Quad-SPI and QPI

Winbond's W25X and W25Q SpiFlash® Multi-I/O Memories feature the popular Serial Peripheral Interface (SPI), densities from 512K-bit to 256M-bit, small erasable sectors and the industry's highest performance. The W25X family supports Dual-SPI effectively doubling standard SPI clock rates. The W25Q family is a "superset" of the 25X family with Dual-I/O and Quad-I/O SPI for even higher performance. Clock rates up to 104MHz achieve an equivalent of 416MHz (50M-Byte/S transfer rate) when using Quad-SPI. This even surpasses asynchronous Parallel Flash memories while using fewer pins and less space. Faster transfer rates mean controllers can execute code (XIP) directly from the SPI interface or further improve boot time when shadowing code to RAM. Some SpiFlash devices offer the new Quad Peripheral Interface (QPI) supporting true Quad Commands for improved XIP performance and simpler controller circuitry. Additionally, new ultra-small form-factor packages are ideal for space constrained mobile and handheld applications.



W25X SpiFlash Family

- 512K-bit to 4M-bit
- Serial Peripheral Interface (SPI), Dual Output SPI
- Uniform 4KB, 32KB & 64KB erase

W25Q SpiFlash Family

- 2M-bit to 256M-bit, superset compatible with 25X
- SPI, Dual-SPI, Quad-SPI and QPI (for many devices)
- Uniform 4KB, 32KB & 64KB erase
- Erase and Program Suspend/Resume
- Quad Page Program
- Security: Lock-down, ID#, OTP Registers
- Serial Flash Discoverable Parameters (SFDP)

High Performance

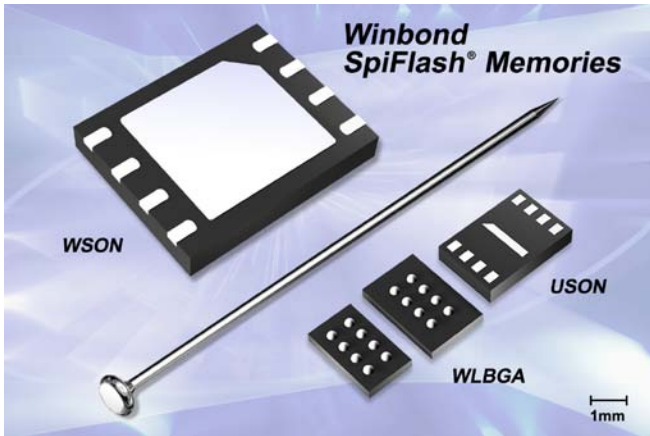
- 104MHz Clock, 416MHz Quad-SPI (50MB/S)
- Fast-boot or execute code (XIP) from SPI

Voltage & Package Options

- 3V (2.7~3.6V), 2.5V (2.3~3.6V) and 1.8V (1.65~1.95V)
- Space saving packages: 8-pin SOIC, WSON, VSOP, USON, WLBGA (CSP), 16-pin SOIC, 24-ball TFBGA
- Known Good Die (KGD) Wafers

Wide Range of Applications

- PCs, DVD, BluRay, WLAN, DSL/Cable Modem, Printers,
- Hard Drives, Set Top Box, LCD-TV, Mobile Phones,
- Bluetooth, GPS, MP3, Meters, DSP, FPGAs and more





Winbond Industrial SpiFlash Memory Selection Guide ¹

Density	Winbond Part # ²	Quad SPI	Clock MHz	Features ³	Voltage	Package ⁴	Sample Availability
512M-bit	W25M512JVxIG/Q	•	104	QPI, Enhanced, DTR	3V	x=(F,E,C ⁶ ,B ⁶)	Q4-2014
256M-bit	W25Q256FVxIG/Q/F	•	80/104	QPI, Enhanced	3V	x=(F,E,C ⁶ ,B ⁶)	Now
	W25Q257FVxIG/Q ⁵	•	80/104	QPI, Enhanced	3V	x=(F,E)	Q1-2014
128M-bit	W25Q256JVxIG/Q	•	80/104	QPI, Enhanced, DTR	3V	x=(F,E,C ⁶ ,B ⁶)	Q4-2014
	W25Q128FVxIG/Q/F	•	104	QPI, Enhanced	3V	x=(S,T ⁶ ,F,P,E,C ⁶ ,B ⁶)	Now
	W25R128FVxIQ	•	104	RPMC, Enhanced	3V	x=(S,T ⁶ ,F ⁶ ,P ⁶)	Now
	W25Q128JVxIG/Q	•	104	QPI, Enhanced, DTR	3V	x=(S,T ⁶ ,F,P,E,C ⁶ ,B ⁶)	Q4-2014
64M-bit	W25Q128FWxIG	•	104	QPI, Enhanced	1.8V	x=(S,T ⁶ ,F ⁶ ,P)	Now
	W25Q64FVxxIG/Q/F	•	104	QPI, Enhanced	3V	xx=(SS,ST ⁶ ,SF,ZP,ZE,TC,TB ⁶)	Now
	W25R64FVxxIQ	•	104	RPMC, Enhanced	3V	xx=(SS,ST ⁶ ,SF ⁶ ,ZP ⁶)	Now
	W25Q64JVxxIG/Q	•	104	QPI, Enhanced, DTR	3V	xx=(SS,ST ⁶ ,SF,ZP,ZE,TC,TB ⁶)	Q3-2014
32M-bit	W25Q64FWxxIG	•	104	QPI, Enhanced	1.8V	xx=(SS,ST ⁶ ,SF ⁶ ,ZP,BY)	Now
	W25Q32FVxxIG/Q/F	•	104	QPI, Enhanced	3V	xx=(SS,ST ⁶ ,SF,ZP,ZE,TC ⁶ ,TB ⁶)	Now
	W25Q32JVxxIG/Q	•	104	QPI, Enhanced, DTR	3V	xx=(SS,ST ⁶ ,SF,ZP,ZE,TC ⁶ ,TB ⁶)	Q3-2014
	W25Q32DWxxIG	•	104	QPI, Enhanced	1.8V	xx=(SS,ST ⁶ ,SF ⁶ ,ZP,ZE ⁶)	Now
16M-bit	W25Q32FWxxIG	•	104	QPI, Enhanced	1.8V	xx=(SS,ST ⁶ ,SF ⁶ ,ZP,ZE ⁶ ,XG)	Q1-2014
	W25Q16DVxxIG/Q	•	80/104	Enhanced	3V	xx=(SN,SV ⁶ ,SS,ST ⁶ ,ZP,TC ⁶ ,TB ⁶)	Now
	W25Q16CLxxIG	•	50/80	Enhanced	2.5V/3V	xx=(SN,SV ⁶ ,SS,ZP)	Now
	W25Q16DWxxIG	•	104	QPI, Enhanced	1.8V	xx=(SN,SV ⁶ ,SS,ST ⁶ ,SF ⁶ ,ZP,TC ⁶ ,TB ⁶ ,UU,BY ⁶)	Now
8M-bit	W25Q16FWxxIG	•	104	QPI, Enhanced	1.8V	xx=(SN,SV ⁶ ,SS,ST ⁶ ,SF ⁶ ,ZP,TC ⁶ ,TB ⁶ ,UU,BY ⁶)	Q3-2014
	W25Q80BVxxIG	•	80/104	Fast Write, Enhanced	3V	xx=(SN,SS,ZP,UX)	Use W25Q80DV
	W25Q80DVxxIG	•	80/104	Fast Write, Enhanced	3V	xx=(SN,SV,SS,ZP,UX)	Now
	W25Q80BLxxIG	•	50/80	Fast Write, Enhanced	2.5V	xx=(SN,SV,SS,ZP,UX)	Now
	W25Q80DLxxIG	•	80/104	Fast Write, Enhanced	2.5V	xx=(SN,SV,SS,ZP,UX)	Q2-2014
	W25Q80BWxxIG ⁷	•	80	Fast Write, Enhanced	1.8V	xx=(SN,SV,SS,ZP,UU ⁶ ,BY ⁶)	Now
4M-bit	W25Q80EWxxIG	•	80	Fast Write, Enhanced	1.8V	xx=(SN,SV,SS,ZP,UU ⁶ ,BY ⁶)	Q4-2014
	W25X40CLxxIG	•	80/104	Fast Write	2.5V/3V	xx=(SN,SV,SS,ZP,UX)	Now
	W25Q40CLxxIG	•	104	Fast Write, Enhanced	2.5V/3V	xx=(SN,SS,UX ⁶)	Now
	W25Q40BWxxIG	•	80	Fast Write, Enhanced	1.8V	xx=(SN,SV,SS ⁶ ,ZP,UX,UU ⁶)	Now
2M-bit	W25Q40EWxxIG	•	80	Fast Write, Enhanced	1.8V	xx=(SN,SV,SS ⁶ ,ZP,UX,UU ⁶)	Q4-2014
	W25X20CLxxIG	•	80/104	Fast Write	2.5V/3V	xx=(SN,SV,ZP,UX)	Now
	W25Q20CLxxIG	•	80/104	Fast Write	2.5V/3V	xx=(SN,SV,ZP,UX)	Now
	W25Q20BWxxIG	•	80	Fast Write, Enhanced	1.8V	xx=(SN,SV,ZP,UX ⁶)	Now
1M-bit	W25Q20EWxxIG	•	80	Fast Write, Enhanced	1.8V	xx=(SN,SV,ZP,UX ⁶)	Q2-2014
	W25X10CLxxIG	•	80/104	Fast Write	2.5V/3V	xx=(SN,SV ⁶ ,ZP ⁶ ,UX)	Now
512K-bit	W25Q10EWxxIG	•	80/104	Fast Write, Enhanced	1.8V	xx=(SN,SV ⁶ ,ZP ⁶ ,UX)	Q2-2014
512K-bit	W25X05CLxxIG	•	80/104	Fast Write	2.5V/3V	xx=(SN,SD ⁶ ,UX)	Now

¹. See data sheet for further technical information. This is subject to change without notice. ². At the end of the part number, letter "G" represents "Green", Halogen Free and RoHS compliant packaging; letter "Q" represents Green packaging and Quad Enabled as shipping default & fast sector erase time (tSE); letter "F" represents Fast Sector Erase time (tSE); letter "I" represents Industrial Temperature (-40°C to +85°C). ³. Enhanced=SFDP¹, Security Registers, Program/Erase Suspend/Resume, Burst Read with Wrap, Non-Volatile & Volatile Status Registers, Complement Array Protection. ⁴. SN=SO8 150mil, SV=VSOP8 150mil, SS or S=SO8 208mil, ST or T=VSOP8 208mil, SF or F=SO16 300mil, SD=TSSOP8 173mil, ZP or P=WSON8 6x5mm, ZE or E=WSON8 8x6mm, TC or C=TFBGA24 8x6mm (4x6 Matrix), TB or B=TFBGA24 8x6mm (5X5 Matrix), UX=USON8 2x3mm, UU=USON8 4x3mm, XG=XSON8 4x4m, BY=WLPGA. KGD Wafer available. ⁵. Default 4-byte addressing for W25W257FV. ⁶. Special Order. ⁷. Contact Winbond for Suspend/Resume feature support on W25Q80BW.



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