

MACRONIX WLCSP Solutions

SERIAL NOR FLASH PRODUCT LIST WITH WLCSP

I-Grade (-40°C to +85°C)

Density	Voltage Range (Vcc)	Part Number	Organization			Read Speed per "cmd-addr-data" Bus Width (MHz)					SFDP Mode	HOLD Pin	RESET Pin	WLCSP Package Information					
			4 (KB)	32 (KB)	64 (KB)	FREAD 1-1-1	DREAD 1-1-2	2READ 1-2-2	QREAD 1-1-4	4READ 1-4-4				QPI 4-4-4	Active Ball	Dummy Ball	Ball Size (mm)	Ball Pitch (mm)	Package Height (mm)
512Kb	1.65V-3.6V	MX25R512FBFI	•	•	•	104	104	104	104	104	•	•	•	8	0	0.21		0.33	
1Mb	1.65V-3.6V	MX25R1035FBFI	•	•	•	104	104	104	104	104	•	•	•	8	0	0.21		0.33	
	2.7V-3.6V	MX25L1006EBAI	•	•	•	104	80				•	•	•	8	0	0.25	0.5	0.45	
2Mb	1.65V-3.6V	MX25R2035FBFI	•	•	•	104	104	104	104	104	•	•	•	8	0	0.21		0.52	
	1.65V-2.0V	MX25U2033EBAI	•	•	•	80		80		70	•	•	•	8	0	0.25	0.5	0.45	
4Mb	1.65V-3.6V	MX25R4035FBFI	•	•	•	104	104	104	104	104	•	•	•	8	0	0.21		0.52	
	1.65V-2.0V	MX25U4033EBAI	•	•	•	80		80		70	•	•	•	8	0	0.25	0.5	0.45	
8Mb	1.65V-3.6V	MX25R8035FBFI	•	•	•	104	104	104	104	104	•	•	•	8	0	0.21		0.52	
	1.65V-2.0V	MX25U8033EBAI	•	•	•	80	80	80		70	•	•	•	8	0	0.25	0.5	0.45	
		MX25U8033EBFI	•	•	•	80	80	80		70	•	•	•	8	0	0.22	0.5	0.33	
16Mb	1.65V-3.6V	MX25R1635FBFI	•	•	•	80	80	80	80	80	•	•	•	8	4	0.21		0.52	
	1.65V-2.0V	MX25U1635FBFI	•	•	•	104	104	84	104	104	104	•	•	•	8	4	0.25	0.5	0.48
32Mb	1.65V-3.6V	MX25R3235FBFI	•	•	•	80	80	80	80	80	•	•	•	8	4	0.21		0.52	
	1.65V-2.0V	MX25U3235FBFI	•	•	•	104	104	84	104	104	104	•	•	•	8	4	0.25	0.5	0.48
64Mb	2.7V-3.6V	MX25L6435EBFI	•	•	•	104	86	86	86	104	•	•	•	8	4	0.3	0.5	0.52	
		MX25L6473EBFI	•	•	•	104	86	86	86	104	•	•	•	8	4	0.3	0.5	0.52	
	1.65V-3.6V	MX25R6435FBFI	•	•	•	80	80	80	80	80	•	•	•	8	14	0.21		0.52	
	1.65V-2.0V	MX25U6435FBFI	•	•	•	104	104	84	104	104	104	•	•	•	8	4	0.3	0.5	0.52
128Mb	1.65V-2.0V	MX25U12835FBFI	•	•	•	104	104	84	104	104	104	•	•	•	8	15	0.3	0.5	0.52
256Mb	1.65V-2.0V	MX25U25635FBFI	•	•	•	108	108	108	108	108	108	•	•	•	8	23	0.3	0.5	0.52

Note: Please contact local Macronix sales representatives for detailed information.

1. While RESET# and HOLD# are both marked, the ordering part number depends on Options 2 as shown in MX25R Series Serial NOR Flash Example below.

Product family extension is based on market demand.

MACRONIX INTERNATIONAL CO., LTD. reserves the right to change product and specifications without notice.

Serial NOR Flash Example

DEVICE : **MX 25L 256 35 F BB I - 10 G**

25L : 3V, Serial NOR Flash
25U : 1.8V, Serial NOR Flash
25V : 2.5V, Serial NOR Flash

DENSITY : 512 : 512Kb
10 : 1Mb
20 : 2Mb
40 : 4Mb
80 : 8Mb
16 : 16Mb
32 : 32Mb
64 : 64Mb
128 : 128Mb
256 : 256Mb
512 : 512Mb

MODE : 06 : Single-in, Dual-out
08 : Unique ID
26 : Default lock protection
33/35/39 : MXSMIO®-Multi-in, Multi-out
36 : MXSMIO®-Single-in, Multi-out
45 : MXSMIO® Duplex(DTR)-Multi-in, Multi-out
50 : MXSMIO®-Security RPMC type
55 : MXSMIO®-Security type
73 : MXSMIO® Multi I/O, Quad I/O Permanent Enable

GENERATION

PACKAGE TYPE : BA/BB/BC/BD : WLCSP

TEMPERATURE RANGE : E : Industrial (-55°C to 125°C)
I : Industrial (-40°C to 85°C)
J : Industrial (-40°C to 105°C)
K : Industrial (-40°C to 125°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)

OPTION : G : RoHS Compliant

SPEED : 05 : 200MHz
08 : 133MHz
10 : 104MHz/108MHz
12 : 80MHz/86MHz
13 : 75MHz
15 : 66MHz
20 : 45MHz

PACKAGE TYPE

PACKAGE TYPE	Ball Size (mm)	Ball Pitch (mm)	Package Height (mm)
BA	0.25	0.5	0.45 / 0.48
BB	0.3	0.5	0.52
BC	0.22	0.5	0.33
BD	0.21		0.52

MX25R Series Serial NOR Flash Example

DEVICE : **MX 25R 64 35 F BD I L 0**

25R: 1.65V-3.6V, Serial NOR Flash
(Ultra Low Power/Wide Range Vcc)

DENSITY : 512 : 512Kb
10 : 1Mb
20 : 2Mb
40 : 4Mb
80 : 8Mb
16 : 16Mb
32 : 32Mb
64 : 64Mb

MODE : 35 : MXSMIO®-Multi-in, Multi-out

GENERATION

PACKAGE TYPE : BD/BF : WLCSP

TEMPERATURE RANGE : I : Industrial (-40°C to 85°C)

OPTION 1 : L : Ultra Low Power Mode (Default)
H : High Performance Mode (Default)

OPTION 2 : 0 : RESET#
1 : HOLD#

PACKAGE TYPE

PACKAGE TYPE	Ball Size (mm)	Package Height (mm)
BD	0.21	0.52
BF	0.21	0.33