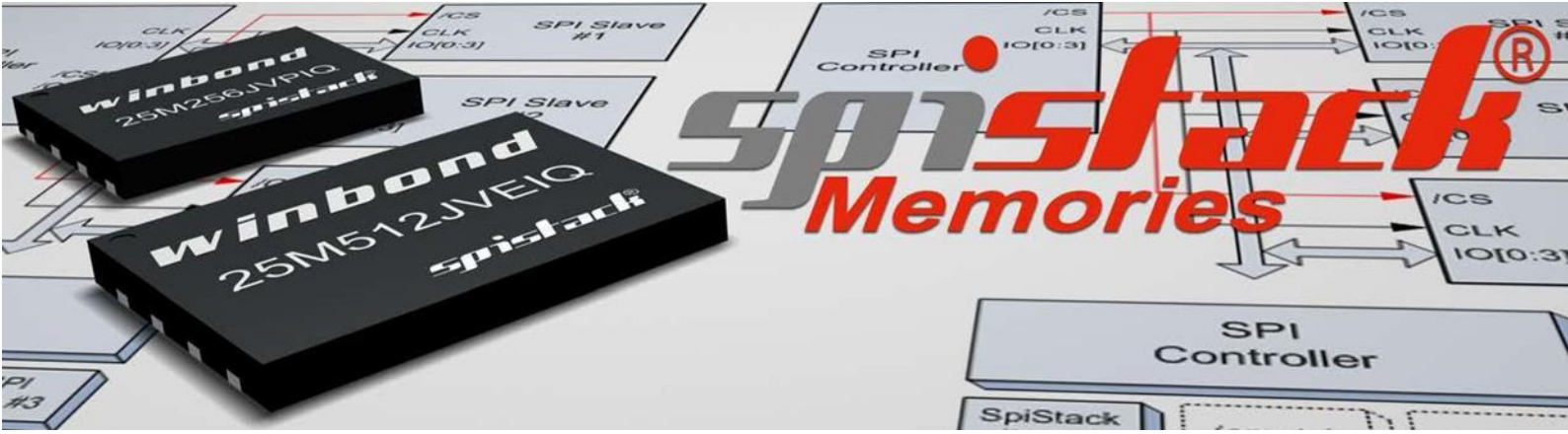


SpiStack® Memories

Winbond's W25M Series SpiStack®

The SpiStack® is an innovative solution that is specifically designed for code storage applications. It is a versatile solution that combines multiple dies within a single IC package with each die being able to operate independently from one another and being individually addressable.

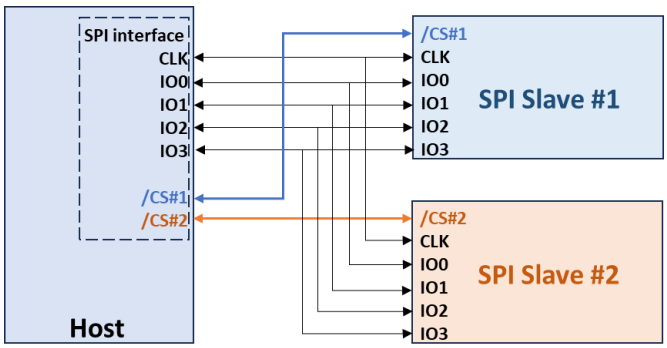
This solution allows the system to read from one die while erasing or programming another or multiple dies can be programmed or erased at the same time. These concurrent operations mean the SpiStack® can support read operations for Execute-in-Place (XIP) while it is also being erased. During initial programming or code updates, all dies can be erased and programmed at the same time, greatly improving manufacturing throughput.

The SpiStack® is an ideal product for Firmware Over-The-Air (FOTA) updates. With a range of NOR and NAND density combinations and assembled in popular SPI packages, SpiStack® can be adopted in diverse application scenarios and use cases while achieving a high level of system level performance.

For more information or technical support, please contact Winbond.

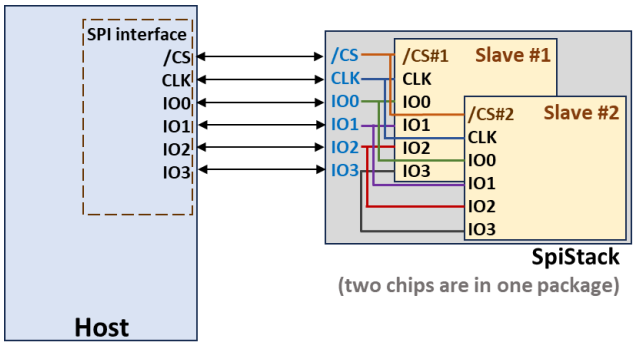
General Solution of connection:

Each /CS pin needs one isolated connection.



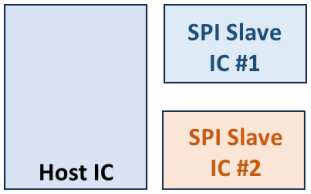
Winbond SpiStack Solution:

Select slave IC#1/#2 using the C2h command



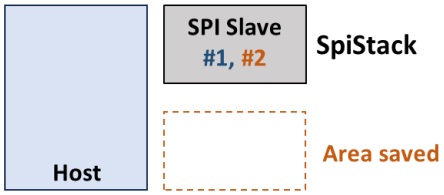
General Solution on PCB:

Need to reserve two packages' area on PCB.



Winbond SpiStack Solution on PCB:

Only one package area is required on the PCB; user controls the selected IC using the C2h command.



Concurrent Operation

- Read operation on one die while Programming / Erasing another die
- Code execution (XIP) is not interrupted while Programming /Erasing
- Multiple dies can be programmed and erased at the same time

Homogeneous stacking – with two or more dies of the same flash technology

- NOR dies for random access and high reliability
- NAND dies for large density and faster Program/Erase

Heterogeneous stacking – with two or more dies of different flash technology

- NOR and NAND dies stacked together combining the familiarity and ease -of-use of NOR with the storage capacity of NAND

W25M SpiStack® Family

- Stack flash dies to form a higher density based on requirement
- Selectable based on specific density requirement
- Serial Peripheral Interface (SPI)
- Backward compatible with existing SpiFlash®

Wide Range of Applications

- Smart Home, Musical instruments, Game, HMI
- Server, 5G, WiFi, Surveillance Camera, Switch
- FPGA, ADAS, V2X, Gateway, Infotainment, Cluster

Winbond SpiStack® Memory Selection Guide

S-NAND Density	S-NOR Density	Winbond Part # [2]	Voltage	Package
2Gb (2x1Gb)	-	W25M02GVxxAG	3V	xx= (ZE, TB, SF)[3,4]
		W25M02GVxxAT		
1Gb	32Mb	W25M321AVxIT	3V	x=(E)[3,4]
1Gb	32Mb	W25M321AWxIT	1.8V	x=(E)[3,4]
-	512Mb (2x256Mb)	W25M512JVxIQ	3V	x=(E, B, F)[3,4]
		W25M512JWxIQ	1.8V	x=(E, B, F)[3,4]
-	1Gb (2x512Mb)	W25Q01JVxxIQ/M	3V	xx= ZE, TB, SF
		W25Q01NWxxIQ/M	1.8V	xx= ZE, TB, SF
-	2Gb (4x512Mb)	W25Q02JVTBIM	3V	B[3,4]
		W25Q02NWTBIM	1.8V	B[3,4]

1. See data sheet for further technical information. This is subject to change without notice. 2. At the end of the part number, letter "T" represents Continuous Read mode as default (BUF=0); letter "G" represents Buffer Read mode as default (BUF=1); letter "Q" represents Quad Enabled as shipping default; the 11th letter "I" represents Industrial Temperature (-40°C to +85°C) and letter "A" represents Automotive 2 Temperature (-40°C to +105°C). 3 ZP or P=WSON8 6x5mm, ZE or E=WSON8 8x6mm, TB or B=TFBGA24 8X6mm (5X5 Matrix), SF or F=SO16 300mil. 4. Special Order.

winbond

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