

## 1. INTRODUCTION

This application note provides guidance for a smooth transition from W25Q80DV/DL to W25Q80RV/RL. The newly designed W25Q80RV ensures compatibility with its predecessors while delivering enhanced performance. The guide includes specific details highlighting differences in each section. For comprehensive information, please refer to the respective datasheets.

## 2. "WRITE STATUS REGISTER" COMMAND CHANGED

The new W25Q80RV/RL didn't support the "Write Status Register 1 & 2" command anymore, but with 2 new "Write Status Register-1" and "Write Status Register-2" commands.

**2.1** W25Q80RV/RL does not support the "Write Status Register (01h)" command to simultaneously write Status Register-1 and Status Register-2.

**2.2** Individual handling of Status Registers-1 and 2 is achieved through the "Write Status Register-1 (01h)" and "Write Status Register-2 (31h)" commands, as illustrated in the table 1.

Table 1. Status Register Write Command Comparison

Product	Command		State Register-1	State Register-2
W25Q80DL/DV	Write Status Register	01h	V	V
W25Q80RV/RL	Write Status Register-1	01h	V	-
	Write Status Register-2	31h	-	V

## 3. SPECIFICATION COMPARISON

Please refer to the comparison table of AC/DC parameters, major features.

Table 2. Features

Features	W25Q80DV/DL	W25Q80RV/RL
Technology	90nm	58nm
VCC	2.7 ~ 3.6V (DV) 2.3 ~ 3.6V (DL)	2.7 ~ 3.6V (RV) 2.3 ~ 3.6V (RL)
Temp.	-40°C to +85°C	<b>-40°C to +105°C</b>
Special Pins	/HOLD	<b>/HOLD or /RESET</b>
"Power Up" Address Mode	3-Byte	3-Byte
Page Program Size	256B	256B
Erase Granularity	Uniform 4/32/64KB	Uniform 4/32/64KB
UID / OTP	64-Bit Unique ID / 3x256Byte OTP	64-Bit Unique ID / 3x256Byte OTP

Table 3. AC parameters

AC PARAMETERS		W25Q80DV/DL	W25Q80RV/RL
		Typ. / Max	Typ. / Max
Fast Read Speed	FR (MHz)	104	133
Normal Read Speed	fR (MHz)	50	84
Page Program Time	tPP (ms)	0.8 / 3	0.25 / 2
4KB Sectors Erase Time	tSE (ms)	45 / 300	30 / 240
32KB Blocks Erase Time	tBE1 (ms)	120 / 800	80 / 800
64KB Blocks Erase Time	tBE2 (ms)	150 / 1000	120 / 1,200
Chip Erase Time	tCE (s)	2 / 6	2 / 10

Table 4. DC parameters

DC Parameters		W25Q80DV/DL	W25Q80RV/RL
		Typ. / Max	Typ. / Max
Standby Current	ICC1 (uA)	10 / 50	10 / 35
Power-down Current	ICC2 (uA)	1 / 5	0.1 / 5
Read Current	ICC3 (mA)	12 / 25 (104MHz)	11 / 20 (133MHz)
Page Program Current	ICC5 (mA)	20 / 25	8 / 15
Sector/Block Erase Current	ICC6 (mA)	20 / 25	8 / 15

Table 5. Features Comparison

Features Comparison	W25Q80DV/DL	W25Q80RV/RL
Features	Block protection	Block protection
	-	<b>Hardware Reset</b>
	Software Reset	Software Reset
	Program/Erase Suspend/Resume	Program/Erase Suspend/Resume
	-	<b>QPI</b>
	SFDP	SFDP
	Uniform 4/32/64KB	Uniform 4/32/64KB
	Deep Power Down	Deep Power Down
	Unique ID (64-Bit)	Unique ID (64-Bit)
	3x256-Byte OTP	3x256-Byte OTP
	-	<b>Burst Read with Wrap</b>

## 4. OPERATION GUIDE

### 4.1 Command Set Table Comparison

Table 6. Command Table

Command Table	W25Q80DV/DL	W25Q80RV/RL
Write Enable	06h	06h
Write Disable	04h	04h
Read JEDEC ID	9Fh	9Fh

Volatile SR Write Enable	50h	50h
Read Status Register-1	05h	05h
Write Status Register	01h	-
Write Status Register-1	-	01h
Read Status Register-2	35h	35h
Write Status Register-2	-	31h
Read Status Register-3	-	15h
Write Status Register-3	-	11h
Read Data	03h	03h
Fast Read	0Bh	0Bh
Burst Read with Wrap	-	0Ch
Fast Read Dual I/O	BBh	BBh
Fast Read Dual Output	3Bh	3Bh
Fast Read Quad I/O	EBh	EBh
Fast Read Quad Output	6Bh	6Bh
Enable QPI Mode	-	38h
Disable QPI Mode	-	FFh
Block (4KB) Erase	20h	20h
Block (32KB) Erase	52h	52h
Block (64KB) Erase	D8h	D8h
Chip Erase	60/C7h	60/C7h
Program/Erase Suspend	75h	75h
Program/Erase Resume	7Ah	7Ah
Page Program	02h	02h
Quad Page Program	32h	32h
Power Down	B9h	B9h
Release Power Down / Device ID	ABh	ABh
Read Manufacturer / Device ID	90h	90h
Read Manufacturer / Device ID Dual I/O	92h	92h
Read Manufacturer / Device ID Quad I/O	94h	94h
Erase Security Register	44h	44h
Program Security Register	42h	42h
Read Security Register	48h	48h
Read SFDP	5Ah	5Ah
Enable Reset	66h	66h
Reset	99h	99h
Set Read Parameters	-	C0h
Set Burst Length	77h	77h
Read Unique ID	4Bh	4Bh

Table 7. Manufacturer and Device Identification

Manufacturer and Device Identification	W25Q80DL/DV	W25Q80RV/RL
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Manufacturer ID Winbond Serial Flash (MF[7:0])	EFh	EFh
Device ID ABh, 90h, 92h, 94h (ID[7:0])	13h	13h
Device ID 9Fh (ID[15:0])	4014h	4014h (P/N -Q) 7014h (P/N -M)

#### 4.2 Part Number Comparison

Table 8. Package Type

Package Type	W25Q80DL	W25Q80RL
SOP8 150mil (SN) VSOP-8 150mil(SV)	W25Q80DLSNIG W25Q80DLSVIG	W25Q80RLSNJQ W25Q80RLSNJM
SOP8 208mil (SS)	W25Q80DLSSIG	W25Q80RLSSJQ W25Q80RLSSJQG W25Q80RLSSJM
WSO8 6x5mm (ZP)	W25Q80DLZPIG	W25Q80RLZPJQ W25Q80RLZPJM
USO8 2x3x0.6mm (UX) XSO8 2x3x0.4mm (XH)	W25Q80DLUXIE	W25Q80RLXHJQ W25Q80RLXHJQG W25Q80RLXHJM

Package Type	W25Q80DV	W25Q80RV
SOP8 150mil (SN) VSOP-8 150mil(SV)	W25Q80DVSNIQ W25Q80DVSNJG W25Q80DVSVIG	W25Q80RVSNJQ W25Q80RVSNJM
SOP8 208mil (SS)	W25Q80DVSSIG W25Q80DVSSJG W25Q80DVSSJGG	W25Q80RVSSJQ W25Q80RVSSJQG W25Q80RVSSJM
WSO8 6x5mm (ZP)	W25Q80DVZPIQ W25Q80DVZPIG W25Q80DVZPJG	W25Q80RVZPJQ W25Q80RVZPJM
USO8 2x3x0.6mm (UX) XSO8 2x3x0.4mm (XH)	W25Q80DVUXIE W25Q82DVUXIE W25Q80DVUXJE W25Q82DVUXIEG W25Q80DVUXIEG	W25Q80RVXHJQ W25Q80RVXHJQG W25Q80RVXHJM
PDIP-8 300mil(DA)	W25Q80DVDAIG	--

#### 4.3 Status Register Comparison

Table 9. Status Register Read\*

Status Register	W25Q80DL/DV-IG									W25Q80RL/RV-JQ								
	7	6	5	4	3	2	1	0	Default value	7	6	5	4	3	2	1	0	Default value
SR-1	SRP0	SEC	TB	BP2	BP1	BP0	WEL	BUSY	00h	SRP	SEC	TB	BP2	BP1	BP0	WEL	BUSY	00h

<b>SR-2</b>	SUS	CMP	LB3	LB2	LB1	-	QE	SRP1	00h	SUS	CMP	LB3	LB2	LB1	LB0	QE	SRL	06h
<b>SR-3</b>	-	-	-	-	-	-	-	-	-	-	DRV1	DRV0	-	-	-	-	-	40h

\* Refer the datasheet for Status Register definition

- 4.3.1** The notation of SRP0 is changed to SRP. The feature is no change.
- 4.3.2** The notation of SRP1 is changed to SRL. The feature is no change.
- 4.3.3** The W25Q80RL/RV introduces the LB0 bit in State Register-2, with a default value of 1 indicating that the SFDP Register is locked.
- 4.3.4** The W25Q80RL/RV introduces "Write Status Register-3" command to adjust the Driver Strength.
- 4.3.5** The W25Q80RL/RV-JQ fixes QE in State Register-2, with a default value of 1 indicating that the quad enable.
- 4.3.6** The default value of State Register-2 is 06h for the W25Q80RL/RV-JQ and 00h for the W25Q80DL/DV-IG.

Table 10. Status Register Write

Product	Write Status Register-1/2/3	Byte 1	Byte 2	Byte 3
		Command input	Data input	Data input
W25Q80DL/DV	Write Status Register	01h	(S7-S0)	(S15-S8)
W25Q80RL/RV	Write Status Register-1	01h	(S7-S0)	-
	Write Status Register-2	31h	(S15-S8)	-
	Write Status Register-3	11h	(S23-S16)	-

\*State Register-1: S7-0

\*State Register-2: S15-8

\*State Register-3: S23-16

- 4.3.7** Status Registers-1 and 2 require individual writing using the commands "01h" and "31h," respectively in W25Q80RL/RV.

## 5. REVISION HISTORY

Version	Date		Page	Description
1.0	12/18/2025			Initial release

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## Product / Process Change Notice

No.: Z200-PCN-DM202601-08-A

Date: January 21, 2026

**Change Title : W25Q80RL/RV "R-Series" (58nm) to replace W25Q80DL/DV "D-Series" (90nm) 8Mb 3.3V SpiFlash® Memories industrial products**

Change Classification:  Major  Minor with customer special request  Minor with customer notification  
Change item :  DataSheet  Design  Raw Material  Wafer FAB  Assembly  Testing  Packing  Manufacture site  Others

**Affected Product(s) :**

Please refer to Table 1 in details.

**Description of Change(s)**

The W25Q80RL/RV 8Mb SpiFlash® Memories use Winbond's 58nm Flash technology. It is function-compatible with W25Q80DL/DV 90nm devices offering improved performance, features and availability. (Please refer the attachment II)

**Reason for Change(s) :**

Improve features and Command backward compatible (same Superset Instruction Set). (Please refer the attachment II)

**Impact of Change(s) : ( positive & negative )**

Form : Change (Package size from USON8 2x3x0.6mm change to XSON8 2x3x0.4mm, VSOP8 150mil 4x5x1mm change to SOP8 150mil 4x5x1.75mm, others no change, please refer to attachment I)

Fit : Change (Package size from USON8 2x3x0.6mm change to XSON8 2x3x0.4mm, VSOP8 150mil 4x5x1mm change to SOP8 150mil 4x5x1.75mm, others no change, please refer to attachment I)

Function : No Concern (Please refer to attachment II)

Reliability : No Concern (Please refer to attachment III)

Hazardous Substances: No Change (Please refer to attachment IV)

**Qualification Plan/ Results :**

Based on Winbond Reliability report, the new product meets our criteria and no quality concern. (Please refer to attachment III)

**Implementation Plan :**

Please refer to attachment V for details.

Date Code: onward  Lot No: onward  Proposed first ship date: January 20, 2026

<b>Originator:</b> (QA)	<b>H.Y. Huang</b>	<b>Approval:</b> (QA Dept. Manager)	<b>C.C. HE0</b>	<b>Approval:</b> (QRA Director)	<b>T.M. Kuo</b>	<b>Approval:</b> (Quality Center Technology Executive)	<b>W.P. CHANG</b>
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**Customer Comments:**

*Note: Please sign this notice, and return to Winbond contact within 30 days. If no response is received within 30 days, this Change Request will be assumed to meet your approval.*

**Major change:**  Approval       Disapproval       Conditional Approval : \_\_\_\_\_.

**Minor with customer special request:**  Approval       Disapproval       Conditional Approval : \_\_\_\_\_.

**Minor with customer notification:**  Recognition

Comment:

Date: \_\_\_\_\_

Dept. name: \_\_\_\_\_

Person in charge: \_\_\_\_\_



**Table 1. The affected part no is listed below.**

W25Q80DLSNIG	W25Q80DLSSIG	W25Q80DLSVIG	W25Q80DLUXIE	W25Q80DLZPIG
W25Q80DVSNIQ	W25Q80DVSNIJG	W25Q80DVSSIG	W25Q80DVSSIGG	W25Q80DVSSJG
W25Q80DVSVIG	W25Q80DVUXIE	W25Q80DVUXIEG	W25Q80DVUXJE	W25Q80DVZPIG
W25Q80DVZPIQ	W25Q80DVZPJG	W25Q82DVUXIE	W25Q82DVUXIEG	