Serial EEPROM Selection Guide

Ver.2.0

ROHM's Serial EEPROMs represent the utmost in reliability.
The lineup is available in the three standard interfaces for compatibility with virtually any application.

Standard EEPROM

I²C SPI Microwire

Automotive Grade EEPROM

I²C SPI Microwire

WL-CSP EEPROM

ROHM Co., Ltd.

Standard EEPROM

I²C BUS EEPROM

I²C BUS EEPROM (2-Wire) BR24Gxxx-3 series (Clock Frequency=400kHz)

Part No.	Package and Suffix					Density (bit)	Bit Format (word×bit)	Supply Voltage (V)	Current Consumption (Max)		Write Cycle Time (Max) (ms)	Clock Frequency (Max) (Hz)	Operating Temperature (˚C)	Endurance (times)	Data Retention (years)
	SOP8	SOP-J8	TSSOP-B8	MSOP8	VSON008X2030				Operating (mA)	Standby (μA)					
BR24G01	F-3	FJ-3	FVT-3	FVM-3	NUX-3	1K	128×8	1.6 to 5.5	2	2	5	400k	−40 to +85	10^6	40
BR24G02	F-3	FJ-3	FVT-3	FVM-3	NUX-3	2K	256×8	1.6 to 5.5	2	2	5	400k			
BR24G04	F-3	FJ-3	FVT-3	FVM-3	NUX-3	4K	512×8	1.6 to 5.5	2	2	5	400k			
BR24G08	F-3	FJ-3	FVT-3	FVM-3	NUX-3	8K	1K×8	1.6 to 5.5	2	2	5	400k			
BR24G16	F-3	FJ-3	FVT-3	FVM-3	NUX-3	16K	2K×8	1.6 to 5.5	2	2	5	400k			
BR24G32	F-3	FJ-3	FVT-3	FVM-3	NUX-3	32K	4K×8	1.6 to 5.5	2	2	5	400k			
BR24G64	F-3	FJ-3	FVT-3	FVM-3	NUX-3	64K	8K×8	1.6 to 5.5	2	2	5	400k			
BR24G128	F-3	FJ-3	FVT-3	FVM-3	NUX-3	128K	16K×8	1.6 to 5.5	2.5	2	5	400k			
BR24G256	F-3	FJ-3	FVT-3	–	–	256K	32K×8	1.6 to 5.5	2.5	2	5	400k			

I²C BUS EEPROM (2-Wire) BR24Gxxx-3A series (Clock Frequency=1MHz)

BR24G01	F-3A	FJ-3A	FVT-3A	FVM-3A	NUX-3A	1K	128×8	1.7 to 5.5	2	2	5	1M	−40 to +85	10^6	40
BR24G02	F-3A	FJ-3A	FVT-3A	FVM-3A	NUX-3A	2K	256×8	1.7 to 5.5	2	2	5	1M			
BR24G04	F-3A	FJ-3A	FVT-3A	FVM-3A	NUX-3A	4K	512×8	1.7 to 5.5	2	2	5	1M			
BR24G08	F-3A	FJ-3A	FVT-3A	FVM-3A	NUX-3A	8K	1K×8	1.7 to 5.5	2	2	5	1M			
BR24G16	F-3A	FJ-3A	FVT-3A	FVM-3A	NUX-3A	16K	2K×8	1.7 to 5.5	2	2	5	1M			

I²C BUS EEPROM (2-Wire) BR24Gxxx-5x series (Clock Frequency=1MHz/Endurance=4million times)

BR24G32	F-5	FJ-5	FVT-5	FVM-5	NUX-5	32K	4K×8	1.6 to 5.5	2	2.5	5	1M	−40 to +85	4×10^6	200
BR24G64	F-5	FJ-5	FVT-5	FVM-5	NUX-5	64K	8K×8	1.6 to 5.5	2	2.5	5	1M			
BR24G128	F-5	FJ-5	FVT-5	FVM-5	NUX-5	128K	16K×8	1.6 to 5.5	2	2.5	5	1M			
BR24G256	F-5	FJ-5	FVT-5	FVM-5	NUX-5	256K	32K×8	1.6 to 5.5	2	2.5	5	1M			
New BR24G512	F-5A	FJ-5A	FVT-5A	FVM-5A	–	512K	64K×8	1.6 to 5.5	3	5	3.5	1M			
New BR24G1M	F-5A	FJ-5A	FVT-5A	–	–	1M	128K×8	1.7 to 5.5	3	5	3.5	1M			

SPI BUS EEPROM

SPI BUS EEPROM BR25Gxxx-3 series (Endurance=1million times)

Part No.	Package and Suffix					Density (bit)	Bit Format (word×bit)	Supply Voltage (V)	Current Consumption (Max)		Write Cycle Time (Max) (ms)	Clock Frequency (Max) (Hz)	Operating Temperature (˚C)	Endurance (times)	Data Retention (years)
	SOP8	SOP-J8	TSSOP-B8	MSOP8	VSON008X2030				Operating (mA)	Standby (μA)					
BR25G320	F-3	FJ-3	FVT-3	FVM-3	NUX-3	32K	4K×8	1.6 to 5.5	8	2	5	20M	−40 to +85	10^6	100
BR25G640	F-3	FJ-3	FVT-3	FVM-3	NUX-3	64K	8K×8	1.6 to 5.5	8	2	5	20M			

SPI BUS EEPROM BR25Gxxx-5A series (Endurance=4million times)

New BR25G128	–	FJ-5A	FVT-5A	FVM-5A	NUX-5A	128K	16K×8	1.6 to 5.5	8	2.5	3.5	20M	−40 to +85	4×10^6	200
New BR25G256	–	FJ-5A	FVT-5A	FVM-5A	NUX-5A	256K	32K×8	1.6 to 5.5	8	2.5	3.5	20M			
New BR25G512	–	FJ-5A	FVT-5A	FVM-5A	–	512K	64K×8	1.6 to 5.5	8	5	3.5	20M			
New BR25G1M	–	FJ-5A	FVT-5A	–	–	1M	128K×8	1.6 to 5.5	8	5	3.5	20M			

Microwire BUS EEPROM

Microwire BUS EEPROM(3-Wire) BR93Gxx-3*1/3A*2/3B*3 series

Part No.	Package and Suffix					Density (bit)	Bit Format (word×bit)	Supply Voltage (V)	Current Consumption (Max)		Write Cycle Time (Max) (ms)	Clock Frequency (Max) (Hz)	Operating Temperature (˚C)	Endurance (times)	Data Retention (years)
	SOP8	SOP-J8	TSSOP-B8	MSOP8	VSON008X2030				Operating (mA)	Standby (μA)					
BR93G46	F-3/ F-3A/ F-3B	FJ-3/ FJ-3A/ FJ-3B	FVT-3/ FVT-3A/ FVT-3B	FVM-3/ FVM-3A/ FVM-3B	NUX-3/ NUX-3A/ NUX-3B	1K	64×16 (128×8)	1.7 to 5.5	3	2	5	3M	−40 to +85	10^6	40
BR93G56	F-3/ F-3A/ F-3B	FJ-3/ FJ-3A/ FJ-3B	FVT-3/ FVT-3A/ FVT-3B	FVM-3/ FVM-3A/ FVM-3B	NUX-3/ NUX-3A/ NUX-3B	2K	128×16 (256×8)	1.7 to 5.5	3	2	5	3M			
BR93G66	F-3/ F-3A/ F-3B	FJ-3/ FJ-3A/ FJ-3B	FVT-3/ FVT-3A/ FVT-3B	FVM-3/ FVM-3A/ FVM-3B	NUX-3/ NUX-3A/ NUX-3B	4K	256×16 (512×8)	1.7 to 5.5	3	2	5	3M			
BR93G76	F-3/ F-3A/ F-3B	FJ-3/ FJ-3A/ FJ-3B	FVT-3/ FVT-3A/ FVT-3B	FVM-3/ FVM-3A/ FVM-3B	NUX-3/ NUX-3A/ NUX-3B	8K	512×16 (1K×8)	1.7 to 5.5	3	2	5	3M			
BR93G86	F-3/ F-3A/ F-3B	FJ-3/ FJ-3A/ FJ-3B	FVT-3/ FVT-3A/ FVT-3B	FVM-3/ FVM-3A/ FVM-3B	NUX-3/ NUX-3A/ NUX-3B	16K	1K×16 (2K×8)	1.7 to 5.5	3	2	5	3M			

Microwire BUS EEPROM (3-Wire) BR93Gxx-3/3A/3B series: *1 They are dual organization (by 16bit or 8bit) and it is selected the input of ORG PIN. *2 1PIN: CS PIN *3 3PIN: CS PIN

Automotive Grade EEPROM (AEC-Q100 Qualified)

I²C BUS EEPROM

125°C Operation I²C BUS EEPROM (2-Wire) BR24Hxxx-5AC series (Endurance=4million times)

Part No.	Package and Suffix						Density (bit)	Bit Format (word×bit)	Supply Voltage (V)	Current Consumption (Max)		Write Cycle Time (Max) (ms)	Clock Frequency (Max) (Hz)	Operating Temperature (°C)	Endurance (times)	Data Retention (years)	ComfySIL™ Functional Safety*1
	SOP8	SOP-J8	TSSOP-B8	MSOP8	VSON008X2030	VSON08AX2030				Operating (mA)	Standby (μA)						
New BR24H01	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	–	ANUX-5AC	1K	128×8	1.7 to 5.5	1.7	10	3.5	1M	−40 to +125	4×10⁶	100	FSs
New BR24H02	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	–	ANUX-5AC	2K	256×8	1.7 to 5.5	1.7	10	3.5	1M				FSs
New BR24H04	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	–	ANUX-5AC	4K	512×8	1.7 to 5.5	1.7	10	3.5	1M				FSs
New BR24H08	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	–	ANUX-5AC	8K	1K×8	1.7 to 5.5	1.7	10	3.5	1M				FSs
New BR24H16	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	–	ANUX-5AC	16K	2K×8	1.7 to 5.5	1.7	10	3.5	1M				FSs
New BR24H32	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	–	ANUX-5AC	32K	4K×8	1.7 to 5.5	1.7	10	3.5	1M				FSs
New BR24H64	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	NUX-5AC	–	64K	8K×8	1.7 to 5.5	1.7	10	3.5	1M				FSs
New BR24H128	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	NUX-5AC	–	128K	16K×8	1.7 to 5.5	1.7	10	3.5	1M				FSs
New BR24H256	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	NUX-5AC	–	256K	32K×8	1.7 to 5.5	1.7	10	3.5	1M				FSs
New BR24H512	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	–	–	512K	64K×8	1.7 to 5.5	3	20	3.5	1M				FSs
New BR24H1M	F-5AC	FJ-5AC	FVT-5AC	–	–	–	1M	128K×8	2.5 to 5.5	3	20	3.5	1M				FSs

SPI BUS EEPROM

125°C Operation Built-in ECC Function SPI BUS EEPROM BR25Hxxx-5AC series (Endurance=4million times)

Part No.	Package and Suffix						Density (bit)	Bit Format (word×bit)	Supply Voltage (V)	Current Consumption (Max)		Write Cycle Time (Max) (ms)	Clock Frequency (Max) (Hz)	Operating Temperature (°C)	Endurance (times)	Data Retention (years)	ComfySIL™ Functional Safety*1
	SOP8	SOP-J8	TSSOP-B8	MSOP8	VSON008X2030	VSON08AX2030				Operating (mA)	Standby (μA)						
New BR25H010	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	–	ANUX-5AC	1K	128×8	1.7 to 5.5	8	10	3.5	20M	−40 to +125	4×10⁶	100	FSs
New BR25H020	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	–	ANUX-5AC	2K	256×8	1.7 to 5.5	8	10	3.5	20M				FSs
New BR25H040	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	–	ANUX-5AC	4K	512×8	1.7 to 5.5	8	10	3.5	20M				FSs
New BR25H080	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	–	ANUX-5AC	8K	1K×8	1.7 to 5.5	8	10	3.5	20M				FSs
New BR25H160	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	–	ANUX-5AC	16K	2K×8	1.7 to 5.5	8	10	3.5	20M				FSs
New BR25H320	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	NUX-5AC	–	32K	4K×8	1.7 to 5.5	8	10	3.5	20M				FSs
New BR25H640	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	NUX-5AC	–	64K	8K×8	1.7 to 5.5	8	10	3.5	20M				FSs
New BR25H128	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	NUX-5AC	–	128K	16K×8	1.7 to 5.5	8	10	3.5	20M				FSs
New BR25H256	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	NUX-5AC	–	256K	32K×8	1.7 to 5.5	8	10	3.5	20M				FSs
New BR25H512	F-5AC	FJ-5AC	FVT-5AC	FVM-5AC	–	–	512K	64K×8	1.7 to 5.5	8	20	3.5	20M				FSs
New BR25H1M	F-5AC	FJ-5AC	FVT-5AC	–	–	–	1M	128K×8	1.7 to 5.5	8	20	3.5	20M				FSs

Microwire BUS EEPROM

125°C Operation Microwire BUS EEPROM (3-Wire) BR93Hxx-2C series

Part No.	Package and Suffix				Density (bit)	Bit Format (word×bit)	Supply Voltage (V)	Current Consumption (Max)		Write Cycle Time (Max) (ms)	Clock Frequency (Max) (Hz)	Operating Temperature (°C)	Endurance (times)	Data Retention (years)	ComfySIL™ Functional Safety*1
	SOP8	SOP-J8	TSSOP-B8	MSOP8				Operating (mA)	Standby (μA)						
BR93H46	RF-2C	RFJ-2C	RFVT-2C	RFVM-2C	1K	64×16	2.5 to 5.5	3	10	4	2M	−40 to +125	10⁶	100	FSs
BR93H56	RF-2C	RFJ-2C	RFVT-2C	RFVM-2C	2K	128×16	2.5 to 5.5	3	10	4	2M				FSs
BR93H66	RF-2C	RFJ-2C	RFVT-2C	RFVM-2C	4K	256×16	2.5 to 5.5	3	10	4	2M				FSs
BR93H76	RF-2C	RFJ-2C	RFVT-2C	RFVM-2C	8K	512×16	2.5 to 5.5	3	10	4	2M				FSs
BR93H86	RF-2C	RFJ-2C	RFVT-2C	RFVM-2C	16K	1K×16	2.5 to 5.5	3	10	4	2M				FSs
105°C Operation Microwire BUS EEPROM (3-Wire) BR93Axx-WM series															
BR93A46	RF-WM	RFJ-WM	RFVT-WM	RFVM-WM	1K	64×16	2.5 to 5.5	3	2	5	2M	−40 to +105	10⁶	40	FSs
BR93A56	RF-WM	RFJ-WM	RFVT-WM	RFVM-WM	2K	128×16	2.5 to 5.5	3	2	5	2M				FSs
BR93A66	RF-WM	RFJ-WM	RFVT-WM	RFVM-WM	4K	256×16	2.5 to 5.5	3	2	5	2M				FSs
BR93A76	RF-WM	RFJ-WM	RFVT-WM	RFVM-WM	8K	512×16	2.5 to 5.5	3	2	5	2M				FSs
BR93A86	RF-WM	RFJ-WM	RFVT-WM	RFVM-WM	16K	1K×16	2.5 to 5.5	3	2	5	2M				FSs

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*1 For details of "ComfySIL™ Functional Safety", please refer to the bottom of this page.

ComfySIL™ is given to products that conform to the ComfySIL™ concept for functional safety.

ComfySIL Functional Safety

■ **ComfySIL™ Compatible Products**

The abbreviations of FSp, FSm, and FSs are shown in the Functional Safety Category column for ComfySIL™Compatible Models.

ComfySIL™ Functional Safety Category Abbreviations	
	FSp: FS process compliant
	FSm: FS mechanism implemented
	FSs: FS supportive

For more information on ComfySIL™, please visit ROHM's website.

ROHM's Website: https://www.rohm.com/functional-safety

WL-CSP EEPROM

WL-CSP EEPROM

Part No.	I/F	Density (bit)	Package					Pull-up Resister	Bit Format (word×bit)	Supply Voltage (V)	Current Consumption (Max)		Write Cycle Time (Max) (ms)	Operating Temperature (°C)	Data Retention (years)
			Package Name	Size (mm)	Thickness (mm) (Max)	Ball Pitch (mm)	RESIN COATING				Operating (mA)	Standby (μA)			
BU9833GUL-W	I²C	2K	VCSP50L1	x: 1.27 y: 1.50	0.55	0.5	✓	–	256×8	1.7 to 5.5	2	2	5	–40 to +85	40
BU9847GUL-W		4K	VCSP50L1	x: 1.95 y: 1.06	0.55	0.5	✓	–	512×8	1.7 to 5.5	2	2	5	–40 to +85	40
BU9889GUL-W		8K	VCSP50L1	x: 1.60 y: 1.00	0.55	0.5	✓	–	1K×8	1.7 to 5.5	2	2	5	–40 to +85	40
BRCB008GWZ-3		8K	UCSP30L1	x: 0.94 y: 0.94	0.33	0.4	–	–	1K×8	1.7 to 3.6	2	2	5	–40 to +85	40
BRCB016GWL-3U		16K	UCSP50L1	x: 1.10 y: 1.15	0.55	0.4	✓	–	2K×8	1.7 to 3.6	2	2	5	–40 to +85	40
BRCD016GWZ-3		16K	UCSP35L1	x: 1.30 y: 0.77	0.40	0.4	✓	–	2K×8	1.7 to 3.6	2	2	5	–40 to +85	40
BRCG016GWZ-3		16K	UCSP30L1A	x: 0.82 y: 0.82	0.33	0.4	✓	–	2K×8	1.7 to 5.5	2	2	5	–40 to +85	40
BRCF016GWZ-3		16K	UCSP30L1	x: 0.86 y: 0.84	0.35	0.4	–	–	2K×8	1.7 to 5.5	2	2	5	–40 to +85	40
BRCA016GWZ-W		16K	UCSP30L1	x: 1.30 y: 0.77	0.35	0.4	–	–	2K×8	1.7 to 3.6	2	2	5	–40 to +85	40
BRCB032GWZ-3		32K	UCSP30L1	x: 1.45 y: 0.77	0.33	0.4	–	–	4K×8	1.6 to 5.5	2	2	5	–40 to +85	40
BRCH064GWZ-3		64K	UCSP30L1A	x: 1.50 y: 1.00	0.33	0.4	✓	–	8K×8	1.6 to 5.5	2	2	5	–40 to +85	40
BRCB064GWZ-3		64K	UCSP30L1	x: 1.50 y: 1.00	0.35	0.4	–	WP	8K×8	1.6 to 5.5	3.9	2	5	–40 to +85	40
BRCE064GWZ-3		64K	UCSP25L1	x: 1.50 y: 1.00	0.30	0.4	–	–	8K×8	1.6 to 5.5	2	2	5	–40 to +85	40
BU9897GUL-W		128K	VCSP50L2	x: 2.44 y: 1.99	0.55	0.5	✓	–	16K×8	1.7 to 5.5	2.5	2	5	–40 to +85	40
BU9832GUL-W	SPI	8K	VCSP50L2	x: 2.09 y: 1.85	0.55	0.5	✓	–	1K×8	1.8 to 5.5	3	2	5	–40 to +85	40
BU9829GUL-W		16K	VCSP50L1	x: 1.74 y: 1.65	0.55	0.5	✓	–	2K×8	1.6 to 3.6	2	1	5	–30 to +85	10
BR25S128GUZ-W		128K	VCSP35L2	x: 2.00 y: 2.63	0.40	0.5	✓	–	16K×8	1.7 to 5.5	2*	2	5	–40 to +85	40
BU9891GUL-W	MW	4K	VCSP50L1	x: 1.60 y: 1.00	0.55	0.5	✓	–	256×16	1.7 to 5.5	3	2	5	–40 to +85	40

WL-CSP EEPROM: *V_{CC}=2.5V

Standard & Automotive Grade Package Lineup

Package Suffix	Package
F	**SOP8** 5.00mm (Typ) ×6.20mm (Typ) ×1.7mm (Max)
FJ	**SOP-J8** 4.90mm (Typ) ×6.00mm (Typ) ×1.65mm (Max)
FVT	**TSSOP-B8** 3.00mm (Typ) ×6.40mm (Typ) ×1.20mm (Max)

Package Suffix	Package
FVM	**MSOP8** 2.90mm (Typ) ×4.00mm (Typ) ×0.90mm (Max)
NUX	**VSON008X2030** **VSON08AX2030** 2.00mm (Typ) ×3.00mm (Typ) ×0.60mm (Max)

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