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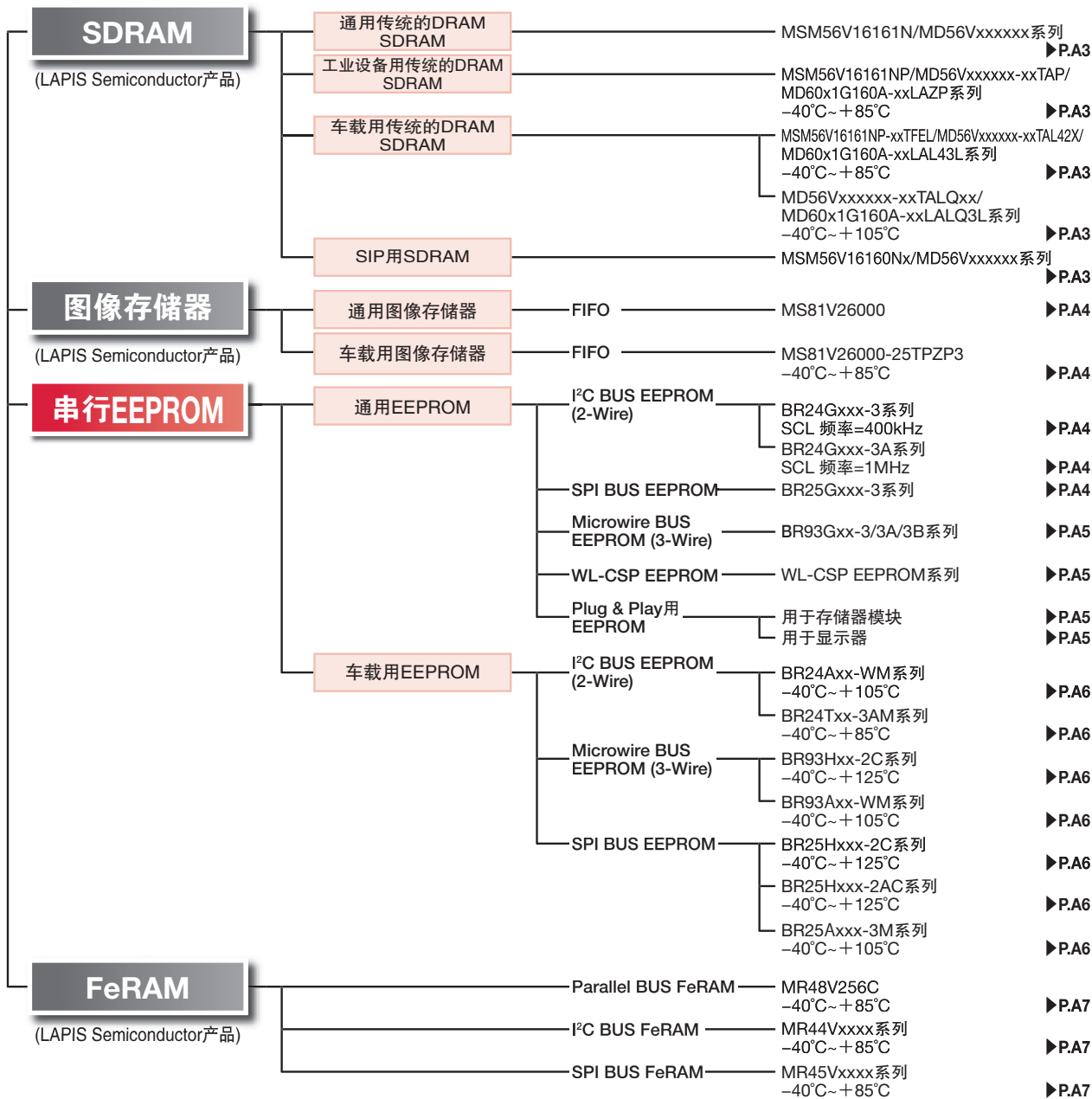
存储器

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存储器系列

存储器系列



SDRAM

通用传统的DRAM SDRAM

(LAPIS Semiconductor产品)

标准												
Part No.	Data Rate Type	Supply Voltage (V)	Density (bit)	Number of Data bits	Configuration (bank × word × bit)	Max. Operating Frequency (MHz)	Refresh Cycle (cycles/ms)	Cycle Time (ns)	Features	Operating Temperature Ta(C)	Package	Halogen Free Support ^{*1}
MSM56V16161N	SDR	3.3±0.3	16M	×16	2×512K×16	143	4096/64	7/7.5/10	Drivability Control	0 to +70	TSOP(II)50	✓
MD56V62161M			64M		4×1M×16	143		7/7.5/10			TSOP(II)54	✓
MD56V72161C			128M		4×2M×16	166	6/7/7.5/10	✓				
MD56V82161A			256M		4×4M×16	166	8192/64	6/7/7.5/10				✓

工业设备用传统的DRAM SDRAM

(LAPIS Semiconductor产品)

工业												
Part No.	Data Rate Type	Supply Voltage (V)	Density (bit)	Number of Data bits	Configuration (bank × word × bit)	Max. Operating Frequency (MHz)	Refresh Cycle (cycles/ms)	Cycle Time (ns)	Features	Operating Temperature Ta(C)	Package	Halogen Free Support ^{*1}
MSM56V16161NP	SDR	3.3±0.3	16M	×16	2×512K×16	143	4096/64	7/7.5/10	Drivability Control	-40 to +85	TSOP(II)50	✓
MD56V62161M-xxTAP			64M		4×1M×16	143		7/7.5/10			TSOP(II)54	✓
MD56V72161C-xxTAP			128M		4×2M×16	166	6/7/7.5/10	✓				
MD56V82161A-xxTAP			256M		4×4M×16	166	8192/64	6/7/7.5/10				✓
☆MD60Y1G160A-xxLAZP	DDR3	1.5±0.075	1G	×16	8×8M×16	800 (1600Mbps)	Average refresh period : 7.8µs at Tc≤85°C, 3.9µs at Tc>85°C	1.25/1.5	-	-40 to +95	96-ball FBGA	✓
☆MD60S1G160A-xxLAZP	DDR3L	1.35 +0.1,-0.067	1G	×16	8×8M×16	800 (1600Mbps)	Average refresh period : 7.8µs at Tc≤85°C, 3.9µs at Tc>85°C	1.25/1.5	-	-40 to +95	96-ball FBGA	✓

车载用传统的DRAM SDRAM

(LAPIS Semiconductor产品)

车载(85°C工作温度)													
Part No.	Data Rate Type	Supply Voltage (V)	Density (bit)	Number of Data bits	Configuration (bank × word × bit)	Max. Operating Frequency (MHz)	Refresh Cycle (cycles/ms)	Cycle Time (ns)	Features	Operating Temperature Ta(C)	Package	Halogen Free Support ^{*1}	Automotive Grade AEC-Q100
MSM56V16161NP-xxTFEL	SDR	3.3±0.3	16M	×16	2×512K×16	143	4096/64	7/7.5/10	Drivability Control	-40 to +85	TSOP(II)50	✓	YES
MD56V62161M-xxTAL42X			64M		4×1M×16	143		7/7.5/10			TSOP(II)54	✓	YES
MD56V72161C-xxTAL42X			128M		4×2M×16	166	6/7/7.5/10	✓				YES	
MD56V82161A-xxTAL42X			256M		4×4M×16	166	8192/64	6/7/7.5/10				✓	YES
☆MD60Y1G160A-xxLAL43L	DDR3	1.5±0.075	1G	×16	8×8M×16	800 (1600Mbps)	Average refresh period : 7.8µs at Tc≤85°C, 3.9µs at Tc>85°C	1.25/1.5	-	-40 to +95	96-ball FBGA	✓	YES
☆MD60S1G160A-xxLAL43L	DDR3L	1.35 +0.1,-0.067	1G	×16	8×8M×16	800 (1600Mbps)	Average refresh period : 7.8µs at Tc≤85°C, 3.9µs at Tc>85°C	1.25/1.5	-	-40 to +95	96-ball FBGA	✓	YES

车载(105°C工作温度)													
Part No.	Data Rate Type	Supply Voltage (V)	Density (bit)	Number of Data bits	Configuration (bank × word × bit)	Max. Operating Frequency (MHz)	Refresh Cycle (cycles/ms)	Cycle Time (ns)	Features	Operating Temperature Ta(C)	Package	Halogen Free Support ^{*1}	Automotive Grade AEC-Q100
MD56V62161M-xxTALQ2X	SDR	3.3±0.3	64M	×16	4×1M×16	143	4096/16	7/7.5/10	Drivability Control	-40 to +105	TSOP(II)54	✓	YES
MD56V72161C-xxTALQ2X			128M		4×2M×16	166		6/7/7.5/10					
MD56V82161A-xxTALQ2X			256M		4×4M×16	166	8192/16	6/7/7.5/10					
☆MD60Y1G160A-xxLALQ3L	DDR3	1.5±0.075	1G	×16	8×8M×16	800 (1600Mbps)	Average refresh period : 7.8µs at Tc≤85°C, 3.9µs at Tc>85°C	1.25/1.5	-	-40 to +105	96-ball FBGA	✓	YES
☆MD60S1G160A-xxLALQ3L	DDR3L	1.35 +0.1,-0.067	1G	×16	8×8M×16	800 (1600Mbps)	Average refresh period : 7.8µs at Tc≤85°C, 3.9µs at Tc>85°C	1.25/1.5	-	-40 to +105	96-ball FBGA	✓	YES

DDR3 : Double Data Rate3 Synchronous DRAM, SDR : Single Data Rate Synchronous DRAM

*1 : 带无卤素标记 ✓, 表示备有无卤素产品。
 详细内容请咨询销售人员。

☆ : 开发中

SiP用SDRAM

(LAPIS Semiconductor产品)

标准										
Part No.	Supply Voltage (V)	Density (bit)	Number of Data bits	Configuration (bank × word × bit)	Max. Operating Frequency (MHz)	Refresh Cycle (cycles/ms)	Cycle Time (ns)	Operating Temperature Tj(C)	Features	
MSM56V16160N	3.3±0.3	16M	×16	2×512K×16	166	4096/32	6/7/7.5/8/10	-40 to +125	KGD	
MD56V62160M		64M		4×1M×16	143		7/7.5/8/10			
MD56V72160C		128M		4×2M×16	166		6/7/7.5/10			

车载										
Part No.	Supply Voltage (V)	Density (bit)	Number of Data bits	Configuration (bank × word × bit)	Max. Operating Frequency (MHz)	Refresh Cycle (cycles/ms)	Cycle Time (ns)	Operating Temperature Tj(C)	Features	Automotive Grade ^{*2}
MSM56V16160NP	3.3±0.3	16M	×16	2×512K×16	166	4096/16	6/7/7.5/8/10	-40 to +125	KGD	YES
MD56V62160M		64M		4×1M×16	143		7/7.5/8/10			
MD56V72160C		128M		4×2M×16	166		6/7/7.5/10			

*2 : 关于AEC-Q100, 请咨询销售人员。

图像存储器

通用图像存储器

(LAPIS Semiconductor产品)

标准													
Part No.	Supply Voltage (V)	Density (bit)	Configuration (word × bit) × port	Number of Data bits	Max. Operating Frequency (MHz)	Access Time (ns)	Cycle Time (ns)	Power Consumption(mW)		Operating Temperature Ta(°C)	Package	Notes	Halogen Free Support ^{*1}
								Operating	Standby				
MS81V26000	3.3 ± 0.3	26M	1,114,112 × 24	× 24	100	8/9	10/12	648/576	18	0 to + 70	TQFP100	Asynchronous serial read/write, Write mask function, Output data control, Cascade, The top address can be specified	✓

车载用图像存储器

(LAPIS Semiconductor产品)

车载														
Part No.	Supply Voltage (V)	Density (bit)	Configuration (word × bit) × port	Number of Data bits	Max. Operating Frequency (MHz)	Access Time (ns)	Cycle Time (ns)	Power Consumption(mW)		Operating Temperature Ta(°C)	Package	Notes	Halogen Free Support ^{*1}	Automotive Grade ^{*2}
								Operating	Standby					
MS81V26000-25TPZP3	3.3 ± 0.3	26M	1,114,112 × 24	× 24	40	12	25	576	18	- 40 to + 85	TQFP100	Asynchronous serial read/write, Write mask function, Output data control, Cascade, The top address can be specified	✓	YES

 *1: 带无卤素标记 ✓, 表示备有无卤素产品。
 详细内容请咨询销售人员。

*2: 关于AEC-Q100, 请咨询销售人员。

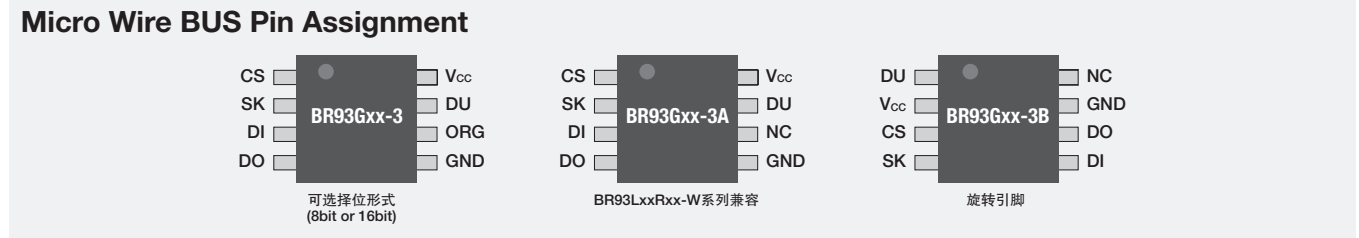
串行EEPROM

通用EEPROM

I ² C BUS EEPROM (2-Wire) BR24Gxxx-3系列 (SCL频率 = 400kHz)																			
Part No.	Package and Suffix								Density (bit)	Bit Format (word × bit)	Supply Voltage (V)	Current Consumption(Max.)		Write Cycle Time (Max.)(ms)	SCL Frequency (Hz)	Operating Temperature (°C)	Endurance (times)	Data Retention (years)	
	SOP8	SOP-J8	SSOP-B8	TSSOP-B8	MSOP8	TSSOP-B8J	VSON008X2030	VMMPO08Z1830				Operating (mA)	Standby (µA)						
BR24G01	F-3	FJ-3	FV-3	FVT-3	FVM-3	FVJ-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	FV-3	FVT-3	FVM-3	FVJ-3	NUX-3	-	2K	256 × 8	1.6 to 5.5	2	2	5	400K				
BR24G04	F-3	FJ-3	FV-3	FVT-3	FVM-3	FVJ-3	NUX-3	-	4K	512 × 8	1.6 to 5.5	2	2	5	400K				
BR24G08	F-3	FJ-3	FV-3	FVT-3	FVM-3	FVJ-3	NUX-3	-	8K	1K × 8	1.6 to 5.5	2	2	5	400K				
BR24G16	F-3	FJ-3	FV-3	FVT-3	FVM-3	FVJ-3	NUX-3	QUZ-3	16K	2K × 8	1.6 to 5.5	2	2	5	400K				
BR24G32	F-3	FJ-3	FV-3	FVT-3	FVM-3	FVJ-3	NUX-3	-	32K	4K × 8	1.6 to 5.5	2	2	5	400K				
BR24G64	F-3	FJ-3	FV-3	FVT-3	FVM-3	FVJ-3	NUX-3	-	64K	8K × 8	1.6 to 5.5	2	2	5	400K				
BR24G128	F-3	FJ-3	FV-3	FVT-3	FVM-3	FVJ-3	NUX-3	-	128K	16K × 8	1.6 to 5.5	2.5	2	5	400K				
BR24G256	F-3	FJ-3	FV-3	FVT-3	-	-	-	-	256K	32K × 8	1.6 to 5.5	2.5	2	5	400K				
I ² C BUS EEPROM (2-Wire) BR24Gxxx-3A系列 (SCL频率 = 1MHz)																			
BR24G01	F-3A	FJ-3A	-	FVT-3A	FVM-3A	FVJ-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	FVJ-3A	NUX-3A	-	2K	256 × 8	1.7 to 5.5	2	2	5	1M				
BR24G04	F-3A	FJ-3A	-	FVT-3A	FVM-3A	FVJ-3A	NUX-3A	-	4K	512 × 8	1.7 to 5.5	2	2	5	1M				
BR24G08	F-3A	FJ-3A	-	FVT-3A	FVM-3A	FVJ-3A	NUX-3A	-	8K	1K × 8	1.7 to 5.5	2	2	5	1M				
BR24G16	F-3A	FJ-3A	-	FVT-3A	FVM-3A	FVJ-3A	NUX-3A	-	16K	2K × 8	1.7 to 5.5	2	2	5	1M				
BR24G32	F-3A	FJ-3A	FV-3A	FVT-3A	FVM-3A	FVJ-3A	NUX-3A	QUZ-3A	32K	4K × 8	1.7 to 5.5	2	2	5	1M				
BR24G64	F-3A	FJ-3A	FV-3A	FVT-3A	FVM-3A	FVJ-3A	NUX-3A	QUZ-3A	64K	8K × 8	1.7 to 5.5	2	2	5	1M				
BR24G128	F-3A	FJ-3A	FV-3A	FVT-3A	FVM-3A	FVJ-3A	NUX-3A	-	128K	16K × 8	1.7 to 5.5	2.5	2	5	1M				
BR24G256	F-3A	FJ-3A	FV-3A	FVT-3A	-	-	-	-	256K	32K × 8	1.7 to 5.5	2.5	2	5	1M				
BR24G512	F-3A	FJ-3A	-	FVT-3A	-	-	-	-	512K	64K × 8	1.7 to 5.5	4.5	3	5	1M				
BR24G1M	F-3A	FJ-3A	-	-	-	-	-	-	1M	128K × 8	1.7 to 5.5	4.5	3	5	1M				
Microwire BUS EEPROM (3-Wire) BR93Gxx-3/3A/3B系列																			
Part No.	Package and Suffix					Density (bit)	Bit Format (word × bit)	Supply Voltage (V)	Current Consumption(Max.)		Write Cycle Time (Max.)(ms)	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	-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								
BR25G128	F-3	FJ-3	FVT-3	FVM-3	NUX-3	128K	16K × 8	1.6 to 5.5	8	2	5								
BR25G256	F-3	FJ-3	FVT-3	-	-	256K	32K × 8	1.6 to 5.5	8	2	5								
BR25G512	F-3	FJ-3	FVT-3	-	-	512K	64K × 8	1.8 to 5.5	4	1	5								
BR25G1M	F-3	FJ-3	-	-	-	1M	128K × 8	1.8 to 5.5	4	1	5								

Microwire BUS EEPROM (3-Wire) BR93Gxx-3/3A/3B系列														
Part No.	Package and Suffix					Density (bit)	Bit Format (word × bit)	Supply Voltage (V)	Current Consumption(Max.)		Write Cycle Time (Max.)(ms)	Operating Temperature (°C)	Endurance (times)	Data Retention (years)
	SOP8	SOP-J8	TSSOP-B8	MSOP8	VSON008X3020				Operating (mA)	Standby (µA)				
BR93G46	F-3 ^{*1} / F-3A ^{*2} / F-3B ^{*3}	FJ-3 ^{*1} / FJ-3A ^{*2} / FJ-3B ^{*3}	FVT-3 ^{*1} / FVT-3A ^{*2} / FVT-3B ^{*3}	FVM-3 ^{*1} / FVM-3A ^{*2} / FVM-3B ^{*3}	NUX-3 ^{*1} / NUX-3A ^{*2} / NUX-3B ^{*3}	1K	64 × 16 (128 × 8)	1.7 to 5.5	3	2	5	-40 to +85	10 ⁶	40
BR93G56	F-3 ^{*1} / F-3A ^{*2} / F-3B ^{*3}	FJ-3 ^{*1} / FJ-3A ^{*2} / FJ-3B ^{*3}	FVT-3 ^{*1} / FVT-3A ^{*2} / FVT-3B ^{*3}	FVM-3 ^{*1} / FVM-3A ^{*2} / FVM-3B ^{*3}	NUX-3 ^{*1} / NUX-3A ^{*2} / NUX-3B ^{*3}	2K	128 × 16 (256 × 8)	1.7 to 5.5	3	2	5			
BR93G66	F-3 ^{*1} / F-3A ^{*2} / F-3B ^{*3}	FJ-3 ^{*1} / FJ-3A ^{*2} / FJ-3B ^{*3}	FVT-3 ^{*1} / FVT-3A ^{*2} / FVT-3B ^{*3}	FVM-3 ^{*1} / FVM-3A ^{*2} / FVM-3B ^{*3}	NUX-3 ^{*1} / NUX-3A ^{*2} / NUX-3B ^{*3}	4K	256 × 16 (512 × 8)	1.7 to 5.5	3	2	5			
BR93G76	F-3 ^{*1} / F-3A ^{*2} / F-3B ^{*3}	FJ-3 ^{*1} / FJ-3A ^{*2} / FJ-3B ^{*3}	FVT-3 ^{*1} / FVT-3A ^{*2} / FVT-3B ^{*3}	FVM-3 ^{*1} / FVM-3A ^{*2} / FVM-3B ^{*3}	NUX-3 ^{*1} / NUX-3A ^{*2} / NUX-3B ^{*3}	8K	512 × 16 (1K × 8)	1.7 to 5.5	3	2	5			
BR93G86	F-3 ^{*1} / F-3A ^{*2} / F-3B ^{*3}	FJ-3 ^{*1} / FJ-3A ^{*2} / FJ-3B ^{*3}	FVT-3 ^{*1} / FVT-3A ^{*2} / FVT-3B ^{*3}	FVM-3 ^{*1} / FVM-3A ^{*2} / FVM-3B ^{*3}	NUX-3 ^{*1} / NUX-3A ^{*2} / NUX-3B ^{*3}	16K	1K × 16 (2K × 8)	1.7 to 5.5	3	2	5			

Microwire BUS EEPROM (3-Wire) BR93Gxx-3/3A/3B 系列：*1 向ORG PIN输入后，在硬件上可选择16bit或8bit的数据格式 *2 1PIN为CS PIN *3 3PIN为CS PIN



WL-CSP EEPROM																
Part No.	I/F	Density (bit)	Package						Pull-up Resistor	Bit Format (word × bit)	Supply Voltage (V)	Current Consumption(Max.)		Write Cycle Time(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	I ² C	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	I ² C	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	I ² C	8K	VCSP50L2	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	I ² C	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-3	I ² C	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	I ² C	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	
New BRCG016GWZ-3	I ² C	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	I ² C	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	I ² C	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	I ² C	32K	UCSP30L1	x : 1.45 y : 0.77	0.33	0.4	-	-	4K × 8	1.7 to 5.5	2	2	5	-40 to +85	40	
BRCH064GWZ-3	I ² C	64K	UCSP35L1A	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	I ² C	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	I ² C	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	I ² C	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	SPI	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	SPI	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 : * Vcc = 2.5V

Plug & Play用EEPROM 用于存储器模块										
Part No.	Package and Suffix		Bit Format (word × bit)	Supply Voltage (V)	Clock Frequency (kHz)	Write Cycle Time (ms)	Endurance (times)	Data Retention (years)	Write Protect	
	TSSOP-B8	VSON008X2030								
BR34L02	FVT-W	-	256 × 8	1.7 to 5.5	100 ^{*1} /400 ^{*2}	5	10 ⁶	40	Onetime ROM write protect	
BR34E02	FVT-3	NUX-3	256 × 8	1.7 to 5.5	400	5	10 ⁶	40	Settable write protect Onetime ROM write protect	

Plug & Play用EEPROM 用于存储器模块：*1 : Vcc=1.7~5.5V *2 : Vcc=2.5~5.5V

Plug & Play用EEPROM 用于显示器												
Part No.	Package and Suffix							Function Descriptions	Bit Format (word × bit)	Supply Voltage (V)	Clock Frequency (MHz)	Write Cycle Time (ms)
	SOP8	SOP-J8	SSOP-B8	SOP14	SSOP-B14	SSOP-B16	VSON008X2030					
BR24C21	F	FJ	FV	-	-	-	-	Supports DDC1/ DDC2 for displays	128 × 8	2.5 to 5.5	100/400	10
BU9882	-	-	-	F-W	FV-W	-	-	Dual-port type compatible with DDC2 for displays	128 × 8 × 2ch	2.5 to 5.5	100/400	10
BU9883	-	-	-	-	-	FV-W	-	2Kbit × 3ch EEPROM for HDMI ports	256 × 8 × 3ch	3.0 to 5.5	400	5
BU99022	-	-	-	-	-	-	NUX-3	2Kbit × 2ch type	256 × 8 × 2ch	1.7 to 5.5	400	5

DDC是Video Electronics Standards Association的商标。

车载用EEPROM

105°C 工作 I²C BUS EEPROM (2-Wire) BR24Axx-WM系列

Part No.	Package and Suffix			Density (bit)	Bit Format (word × bit)	Supply Voltage (V)	Current Consumption(Max.)		Write Cycle Time (Max.)(ms)	Operating Temperature (°C)	Endurance (times)	Data Retention (years)	Automotive Grade AEC-Q100
	SOP8	SOP-J8	MSOP8				Operating (mA)	Standby (μA)					
BR24A01A	F-WM	FJ-WM	-	1K	128 × 8	2.5 to 5.5	2	2	5	-40 to +105	10 ⁶	40	YES
BR24A02	F-WM	FJ-WM	FVM-WM	2K	256 × 8	2.5 to 5.5	2	2	5				
BR24A04	F-WM	FJ-WM	-	4K	512 × 8	2.5 to 5.5	2	2	5				
BR24A08	F-WM	FJ-WM	-	8K	1K × 8	2.5 to 5.5	2	2	5				
BR24A16	F-WM	FJ-WM	-	16K	2K × 8	2.5 to 5.5	2	2	5				
BR24A32	F-WM	-	-	32K	4K × 8	2.5 to 5.5	3	2	5				
BR24A64	F-WM	-	-	64K	8K × 8	2.5 to 5.5	3	2	5				

85°C 工作 Microwire I²C BUS EEPROM (2-Wire) BR24Txx-3AM系列

Part No.	Package and Suffix			Density (bit)	Bit Format (word × bit)	Supply Voltage (V)	Current Consumption(Max.)		Write Cycle Time (Max.)(ms)	Operating Temperature (°C)	Endurance (times)	Data Retention (years)	Automotive Grade AEC-Q100
	SOP8	SOP-J8	TSSOP-B8				Operating (mA)	Standby (μA)					
New BR24T512	F-3AM	FJ-3AM	FVT-3AM	512K	64K × 8	1.7 to 5.5	4.5	3	5	-40 to +85	10 ⁶	40	YES
New BR24T1M	F-3AM	FJ-3AM	-	1M	128K × 8	1.7 to 5.5	4.5	3	5				

125°C 工作 Microwire BUS EEPROM (3-Wire) BR93Hxx-2C系列

Part No.	Package and Suffix				Density (bit)	Bit Format (word × bit)	Supply Voltage (V)	Current Consumption(Max.)		Write Cycle Time (Max.)(ms)	Operating Temperature (°C)	Endurance (times)	Data Retention (years)	Automotive Grade AEC-Q100
	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	-40 to +125	10 ⁶	100	YES
BR93H56	RF-2C	RFJ-2C	RFVT-2C	RFVM-2C	2K	128 × 16	2.5 to 5.5	3	10	4				
BR93H66	RF-2C	RFJ-2C	RFVT-2C	RFVM-2C	4K	256 × 16	2.5 to 5.5	3	10	4				
BR93H76	RF-2C	RFJ-2C	RFVT-2C	RFVM-2C	8K	512 × 16	2.5 to 5.5	3	10	4				
BR93H86	RF-2C	RFJ-2C	RFVT-2C	RFVM-2C	16K	1K × 16	2.5 to 5.5	3	10	4				

105°C 工作 Microwire BUS EEPROM (3-Wire) BR93Axx-WM系列

BR93A46	RF-WM	RFJ-WM	RFVT-WM	RFVM-WM	1K	64 × 16	2.5 to 5.5	3	2	5	-40 to +105	10 ⁶	40	YES
BR93A56	RF-WM	RFJ-WM	RFVT-WM	RFVM-WM	2K	128 × 16	2.5 to 5.5	3	2	5				
BR93A66	RF-WM	RFJ-WM	RFVT-WM	RFVM-WM	4K	256 × 16	2.5 to 5.5	3	2	5				
BR93A76	RF-WM	RFJ-WM	RFVT-WM	RFVM-WM	8K	512 × 16	2.5 to 5.5	3	2	5				
BR93A86	RF-WM	RFJ-WM	RFVT-WM	RFVM-WM	16K	1K × 16	2.5 to 5.5	3	2	5				

125°C 工作 SPI BUS EEPROM BR25Hxxx-2C系列

BR25H010	F-2C	FJ-2C	FVT-2C	FVM-2C	1K	128 × 8	2.5 to 5.5	4	10	4	-40 to +125	10 ⁶	100	YES
BR25H020	F-2C	FJ-2C	FVT-2C	FVM-2C	2K	256 × 8	2.5 to 5.5	4	10	4				
BR25H040	F-2C	FJ-2C	FVT-2C	FVM-2C	4K	512 × 8	2.5 to 5.5	4	10	4				
BR25H080	F-2C	FJ-2C	FVT-2C	FVM-2C	8K	1K × 8	2.5 to 5.5	4	10	4				
BR25H160	F-2C	FJ-2C	FVT-2C	FVM-2C	16K	2K × 8	2.5 to 5.5	4	10	4				
BR25H320	F-2C	FJ-2C	FVT-2C	FVM-2C	32K	4K × 8	2.5 to 5.5	4	10	4				
BR25H640	F-2C	FJ-2C	FVT-2C	-	64K	8K × 8	2.5 to 5.5	5.5	10	4				
BR25H128	F-2C	FJ-2C	-	-	128K	16K × 8	2.5 to 5.5	5.5	10	4				

125°C 工作 内置ECC功能 SPI BUS EEPROM BR25Hxxx-2AC系列

BR25H640	F-2AC	FJ-2AC	FVT-2AC	FVM-2AC	64K	8K × 8	2.5 to 5.5	5.5	10	4	-40 to +125	10 ⁶	100	YES
BR25H128	F-2AC	FJ-2AC	FVT-2AC	-	128K	16K × 8	2.5 to 5.5	5.5	10	4				
BR25H256	F-2AC	FJ-2AC	-	-	256K	32K × 8	2.5 to 5.5	5.5	10	4				

105°C 工作 SPI BUS EEPROM BR25Axxx-3M系列

BR25A256	F-3M	FJ-3M	FVT-3M	-	256K	32K × 8	2.5 to 5.5	4	10	5	-40 to +105	10 ⁶	100	YES
BR25A512	F-3M	FJ-3M	FVT-3M	-	512K	64K × 8	2.5 to 5.5	4	10	5				
BR25A1M	F-3M	FJ-3M	-	-	1M	128K × 8	2.5 to 5.5	4	10	5				

FeRAM

铁电随机存取存储器

(LAPIS Semiconductor产品)

Parallel BUS FeRAM											
Part No.	Memory Density (bit)	Configuration (word × bit)	Supply Voltage (V)	Operating Speed	Read/Write Endurance (times)	Data Retention (years)	Operating Temperature Ta(°C)	Package	Halogen Free Support ^{*1}	Automotive Grade ^{*2}	
MR48V256C	256K	32K × 8	2.7 to 3.6	t _{RC} =150ns	10 ¹²	10	-40 to +85	TSOP(I)28	-	YES	
I ² C BUS FeRAM MR44Vxxxx系列											
MR44V064A	64K	8K × 8	2.5 to 3.6	f _{clk} =3.4MHz	10 ¹²	10	-40 to +85	SOP8	✓	YES	
MR44V064B	64K	8K × 8	1.8 to 3.6	f _{clk} =3.4MHz					✓		
New MR44V100A	1M	128K × 8	1.8 to 3.6	f _{clk} =3.4MHz					✓		
SPI BUS FeRAM MR45Vxxxx系列											
MR45V032A	32K	4K × 8	2.7 to 3.6	f _{clk} =15MHz	10 ¹²	10	-40 to +85	SOP8	✓	YES	
MR45V064B	64K	8K × 8	1.8 to 3.6	f _{clk} =40MHz					✓		
MR45V256A	256K	32K × 8	3.0 to 3.6	f _{clk} =15MHz				✓			
New MR45V100A	1M	128K × 8	1.8 to 3.6	f _{clk} =40MHz				✓	DIP8	✓	-
MR45V200A	2M	256K × 8	2.7 to 3.6	f _{clk} =34MHz				✓	DIP8	✓	-

*1: 带无卤素标记 ✓, 表示备有无卤素产品。
详细内容请咨询销售人员。

*2: 关于AEC-Q100, 请咨询销售人员。

