



Automotive Serial EEPROMs BR25H□□0-W Series 125°C Operating Temperature, SPI BUS

•Description

The BR25H□□0-W series serial SPI bus EEPROMs feature stable operation at up to 125°C, making them suitable for high reliability applications such as automotive systems.

Density (bit)	Bit format (bit)	Part No./ Package		Supply Voltage (V)	Endurance(times)	
		SOP8	SOP-J8		Under 85°C	Under 125°C
1K	128×8	BR25H010F-W	BR25H010FJ-W	2.5-5.5	10 ⁶	3×10 ⁵
2K	256×8	BR25H020F-W	BR25H020FJ-W	2.5-5.5	10 ⁶	3×10 ⁵
4K	512×8	BR25H040F-W	BR25H040FJ-W	2.5-5.5	10 ⁶	3×10 ⁵
8K	1K×8	BR25H080F-W	BR25H080FJ-W	2.5-5.5	10 ⁶	3×10 ⁵
16K	2K×8	BR25H160F-W	BR25H160FJ-W	2.5-5.5	10 ⁶	3×10 ⁵
32K	4K×8	BR25H320F-W	BR25H320FJ-W	2.5-5.5	10 ⁶	3×10 ⁵

•Features

- 1) Compatible with the SPI bus interface.
- 2) Operating temperature range: -40°C to 125°C.
Operating voltage range: 2.5V to 5.5V.
- 3) Double-cell structure(Rohm original).
- 4) Double reset function (Vcc Lookout Function and Power on Reset).
- 5) Au pad - Au wire connection for high reliability.
- 6) High 6kV ESD resistance (HBM method).

•Applications

Automotive application required high quality and consumer application like mobile phones, digital video cameras, DVD/CD player, large household electrical appliances, and can use many applications.

•Absolute Maximum Ratings (Ta=25°C)

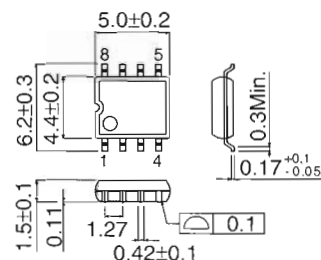
Parameter	Symbol	Limits	Unit
Supply Voltage	Vcc	-0.3 to +6.5	V
Power Dissipation	Pd	450(SOP8) *1	mW
		450(SOP-J8) *2	
Storage Temperature Range	Tstg	-65 to 150	°C
Operating Temperature Range	Topr	-40 to 125	°C
Terminal Voltage	-	-0.3 to Vcc+0.3	V

*When using at Ta=25°C or higher, 3.6mW (*1, *2) to be reduced per 1°C

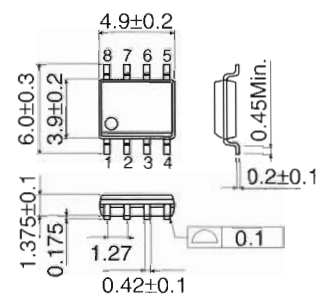
- The specifications for the product described in this document are for reference only. Upon actual use, therefore, please request that specifications to be separately delivered.
- The application circuit examples, information, and various data pertaining to the use of the products presented in this documentation are provided for reference purposes only.
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The products listed in this catalog are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys). Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

•Dimensions (Unit: mm)



SOP8



SOP-J8

Excellence in Electronics



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Current specifications in effect of 1st. September 2007.



● Recommended Conditions

Parameter	Symbol	Limits	Unit
Source Voltage	V _{CC}	2.5 to 5.5	V
Input Voltage	V _{IN}	0 to V _{CC}	

● Input/Output Capacitance (Ta=25°C, frequency=5MHz)

Parameter	Symbol	Conditions	Min.	Max.	Unit
Input Capacitance *1	C _{IN}	V _{IN} =GND	-	8	pF
Output Capacitance *1	C _{OUT}	V _{OUT} =GND	-	8	

*1:Not 100% TESTED

● Memory Cell Characteristics (V_{CC}=2.5V to 5.5V)

Parameter	Limits			Unit	Condition
	Min	Typ.	Max		
Number of Data	1,000,000	-	-	Times	Ta≤85°C
Rewrites*1	500,000	-	-	Times	Ta≤105°C
Data Hold Years*1	300,000	-	-	Times	Ta≤125°C
	40	-	-	Years	Ta≤25°C
	20	-	-	Years	Ta≤85°C

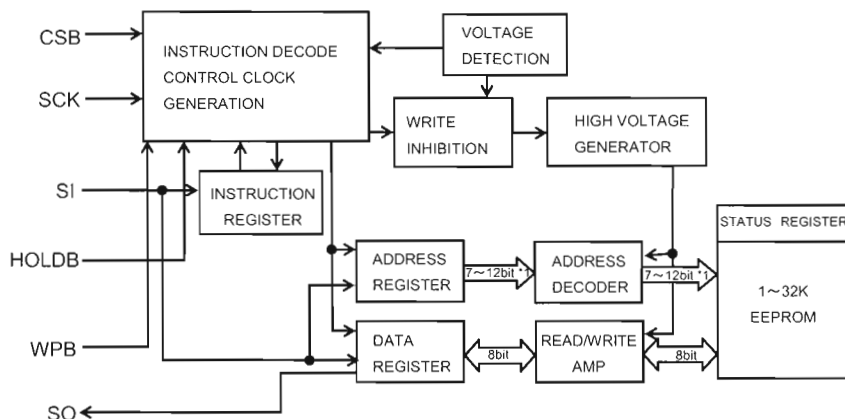
*1:Not 100% TESTED

● Electrical Characteristics (Unless otherwise specified, Ta=-40 to +125°C, V_{CC}=2.5 to 5.5V)

Parameter	Symbol	Limits			Unit	Conditions
		Min.	Typ.	Max.		
"H" Input Voltage	V _{IH}	0.7x V _{CC}	-	V _{CC} +0.3	V	2.5≤V _{CC} ≤5.5V
"L" Input Voltage	V _{IL}	-0.3	-	0.3x V _{CC}	V	2.5≤V _{CC} ≤5.5V
"L" Output Voltage	V _{OL}	0	-	0.4	V	I _{OL} =2.1mA
"H" Output Voltage	V _{OH}	V _{CC} -0.5	-	V _{CC}	V	I _{OH} =-0.4mA
Input Leak Current	I _{LI}	-10	-	10	μA	V _{IN} =0 to V _{CC}
Output Leak current	I _{LO}	-10	-	10	μA	V _{OUT} =0 to V _{CC} , CSB=V _{CC}
Write Current Consumption	I _{CC1}	-	-	2.0	mA	V _{CC} =2.5V, f _{SCK} =5MHz, t _{E/W} =5ms V _{IH} /V _{IL} =0.9V _{CC} /0.1V _{CC} , Byte write, Page write Write status register
	I _{CC2}	-	-	3.0	mA	V _{CC} =5.5V, f _{SCK} =5MHz, t _{E/W} =5ms V _{IH} /V _{IL} =0.9V _{CC} /0.1V _{CC} Byte write, Page write Write status register
Read Current Consumption	I _{CC3}	-	-	1.5	mA	V _{CC} =2.5V, f _{SCK} =5MHz V _{IH} /V _{IL} =0.9V _{CC} /0.1V _{CC} , Read, Read status register
	I _{CC4}	-	-	2.0	mA	V _{CC} =5.5V, f _{SCK} =5MHz V _{IH} /V _{IL} =0.9V _{CC} /0.1V _{CC} Read, Read status register
Standby Current	I _{SB}	-	-	10	μA	V _{CC} =5.5V CSB=HOLDB=WPB=V _{CC} , SCK=SI=V _{CC} or =GND, SO=OPEN

*Not designed to be radiation resistant

● Block Diagram



- *1 7bit: BR25H010-W
- 8bit: BR25H020-W
- 9bit: BR25H040-W
- 10bit: BR25H080-W
- 11bit: BR25H160-W
- 12bit: BR25H320-W