

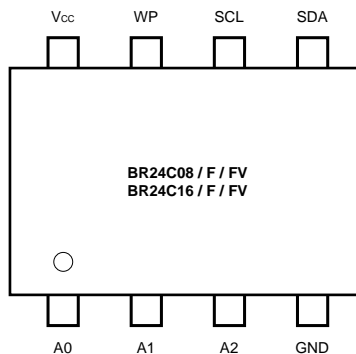
# I<sup>2</sup>C Bus compatible serial EEPROM

**BR24C08 / BR24C08F / BR24C08FV /  
BR24C16 / BR24C16F / BR24C16FV** **under  
development**

## ●Features

- Wide range of operating power supply voltages (2.7V to 5.5V).
- 2-wire serial interface.
- Auto erase and auto completion function when writing data.
- Page write mode function:16byte
- Low current consumption.
  - Operating (at 5V) : 2.0mA (typ.)
  - Standby (at 5V) : 1.0μA (typ.)
- Write protect function.
  - Equipped with WP (write protect) function.
  - Writing disabled when power supply voltage is low.
- Compact DIP8, SOP8, and SSOPB8 packages.
- Highly reliable COMS processing.
- Rewriting possible up to 100,000 times.
- Data can be stored for ten years without corruption.
- Built-in noise filters at SCL and SDA pins.

## ●Pin assignments



## ●Overview

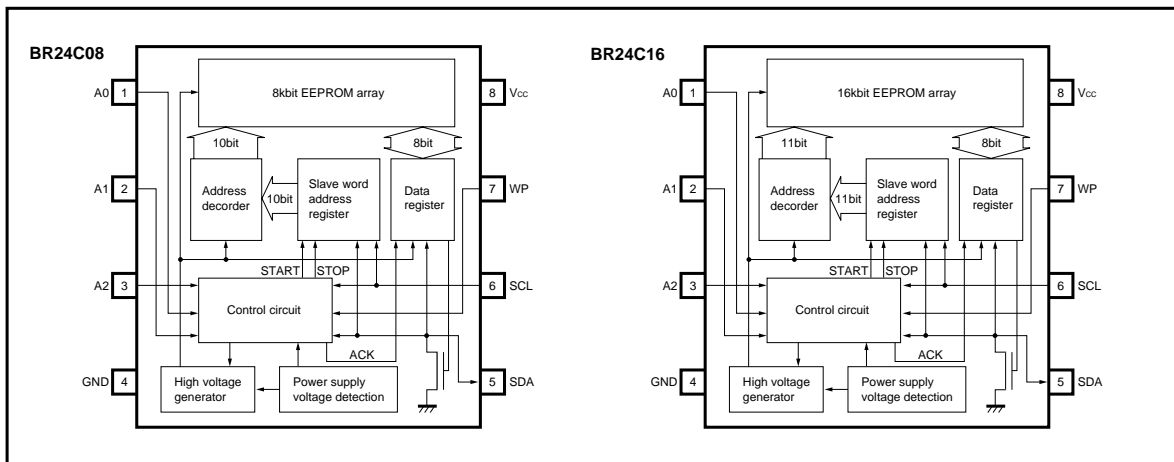
The BR24C08, BR24C08F, BR24C08FV, BR24C16, BR24C16F, and BR24C16FV are 2-wire (I<sup>2</sup>C bus type) serial EEPROMs which are electrically programmable.

The configurations are as follows:

BR24C08 / F / FV: 1k × 8 bit 1k serial EEPROM

BR24C16 / F / FV: 2k × 8 bit 2k serial EEPROM

## ●Block diagram



## ●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Applied voltage	V <sub>CC</sub>	- 0.3 ~ + 6.5	V
Power dissipation	P <sub>d</sub>	300 (SSOP8)*1 350 (SOP8)*2 500 (DIP8)*3	mW
Storage temperature	T <sub>stg</sub>	- 65 ~ + 125	°C
Operating temperature	T <sub>opr</sub>	- 40 ~ + 85	°C
Pin voltages	—	- 0.3 ~ V <sub>CC</sub> + 0.3	V

\*1 Reduced by 3.0mW for each increase in Ta of 1 °C over 25°C.

\*2 Reduced by 3.5mW for each increase in Ta of 1 °C over 25°C.

\*3 Reduced by 5.0mW for each increase in Ta of 1 °C over 25°C.

## ●Recommended operating conditions (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Power supply voltage	V <sub>CC</sub>	2.7 ~ 5.5	V
Input voltage	V <sub>IN</sub>	0 ~ V <sub>CC</sub>	V

## ●Electrical characteristics (unless otherwise noted, Ta = -40 to +85°C, Vcc = 2.7V to 5.5V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input high level voltage	V <sub>IH</sub>	0.7V <sub>CC</sub>	—	—	V	—
Input low level voltage	V <sub>IL</sub>	—	—	0.3V <sub>CC</sub>	V	—
Output low level voltage	V <sub>OL</sub>	—	—	0.4	V	I <sub>OL</sub> = 3.0mA (SDA)
Input leakage current	I <sub>LI</sub>	-1	—	1	μA	V <sub>IN</sub> = 0V ~ V <sub>CC</sub>
Output leakage current	I <sub>LO</sub>	-1	—	1	μA	V <sub>OUT</sub> = 0V ~ V <sub>CC</sub>
Operating current consumption	I <sub>CC</sub>	—	—	3.0	mA	V <sub>CC</sub> = 5.5V, f <sub>SCL</sub> = 400kHz
Standby current	I <sub>SB</sub>	—	—	3.0	μA	V <sub>CC</sub> = 5.5V, SDA • SCL = V <sub>CC</sub> A0, A1, A2 = GND WP = GND

○ Not designed for radiation resistance.

## ●Operating timing characteristics (unless otherwise noted, Ta = -40 to +85°C, Vcc = 2.7V to 5.5V)

Parameter	Symbol	V <sub>CC</sub> = 5V ± 10 %			V <sub>CC</sub> = 3V ± 10 %			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	
SCL frequency	f <sub>SCL</sub>	—	—	400	—	—	100	kHz
Data clock high time	t <sub>HIGH</sub>	0.6	—	—	4.0	—	—	μs
Data clock low time	t <sub>LOW</sub>	1.2	—	—	4.7	—	—	μs
SDA / SCL rise time	t <sub>r</sub>	—	—	0.3	—	—	1.0	μs
SDA / SCL fall time	t <sub>f</sub>	—	—	0.3	—	—	0.3	μs
Start condition hold time	t <sub>HD</sub> : STA	0.6	—	—	4.0	—	—	μs
Start condition setup time	t <sub>SU</sub> : STA	0.6	—	—	4.7	—	—	μs
Input data hold time	t <sub>HD</sub> : DAT	0	—	—	0	—	—	ns
Input data setup time	t <sub>SU</sub> : DAT	100	—	—	250	—	—	ns
Output data delay time	t <sub>PD</sub>	0.1	—	0.9	0.2	—	3.5	μs
Output data hold time	t <sub>DH</sub>	0.1	—	—	0.2	—	—	μs
Stop condition setup time	t <sub>SU</sub> : STO	0.6	—	—	4.7	—	—	μs
Bus open time before start of transfer	t <sub>BUF</sub>	1.2	—	—	4.7	—	—	μs
Internal write cycle time	t <sub>WR</sub>	—	—	10	—	—	10	ms
Noise erase valid time (SDA / SCL pins)	t <sub>i</sub>	—	—	0.05	—	—	0.1	μs

● External dimensions (Units: mm)

