

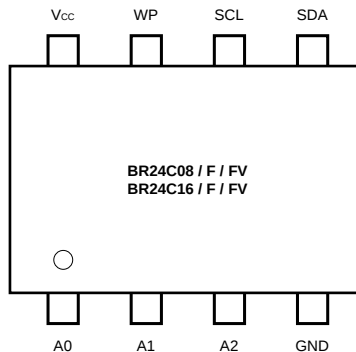
I²C Bus compatible serial EEPROM

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 SSOP8 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

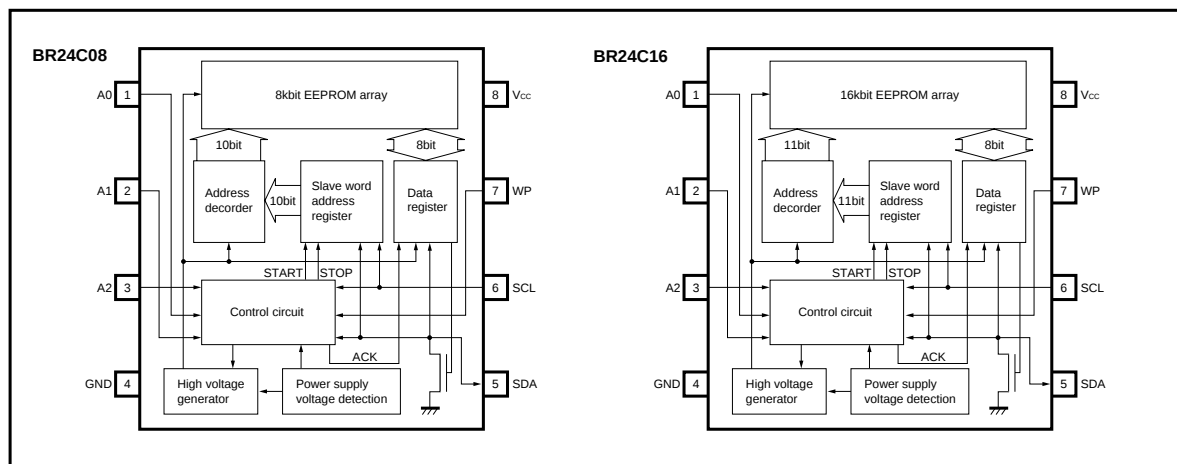
The BR24C08, BR24C08F, BR24C08FV, BR24C16, BR24C16F, and BR24C16FV are 2-wire (I²C bus type) serial EEPROMs which are electrically programmable.

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 _{CC}	− 0.3 ~ + 6.5	V
Power dissipation	P _d	300 (SSOPB8)* ¹ 350 (SOP8)* ² 500 (DIP8)* ³	mW
Storage temperature	T _{stg}	− 65 ~ + 125	°C
Operating temperature	T _{opr}	− 40 ~ + 85	°C
Pin voltages	—	− 0.3 ~ V _{CC} + 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 _{CC}	2.7 ~ 5.5	V
Input voltage	V _{IN}	0 ~ V _{CC}	V

●Electrical characteristics (unless otherwise noted, Ta = – 40 to + 85°C, V_{CC} = 2.7V to 5.5V)

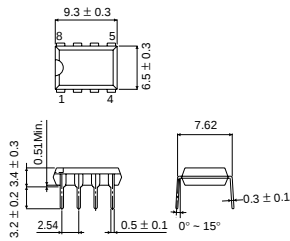
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input high level voltage	V _{IH}	0.7V _{CC}	—	—	V	—
Input low level voltage	V _{IL}	—	—	0.3V _{CC}	V	—
Output low level voltage	V _{OL}	—	—	0.4	V	I _{OL} = 3.0mA (SDA)
Input leakage current	I _{LI}	– 1	—	1	μA	V _{IN} = 0V ~ V _{CC}
Output leakage current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

○ Not designed for radiation resistance.

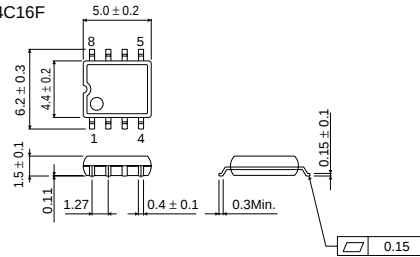
●Operating timing characteristics (unless otherwise noted, Ta = – 40 to + 85°C, V_{CC} = 2.7V to 5.5V)

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

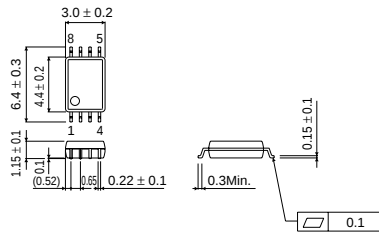
● External dimensions (Units: mm)

BR24C08
BR24C16

DIP8

BR24C08F
BR24C16F

SOP8

BR24C08FV
BR24C16FV

SSOP8