

# 8bit 20ch D/A converter

## BH2222FV

BH2222FV is an 8bit D/A converter for electronic adjustment. The 20-channel output voltage can be independently controlled by three-wire serial interface from micro-controller. The built-in power on reset circuit keeps the output state Low after the power is on. 4-channel have data register function. Two kinds of set voltage can be retained, and output voltage can be switched by SEL pin.

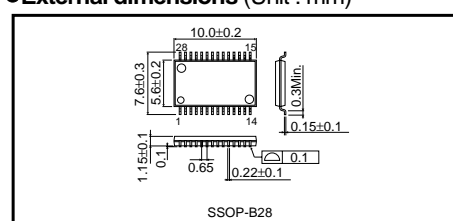
### ●Applications

The voltage adjustment for DVC, DSC etc.

### ●Features

- 1) 8bit 20-channel D/A converters adopting R-2R system.
- 2) 3-wire + 1-wire 16-bit serial interface.
- 3) POWER ON RESET circuit.
- 4) The full scale output voltage range : 2.7 ~ 5.5V.
- 5) It is possible to set the two output full scale level independently.
- 6) 4-channel date Register extension function.
- 7) SSOP-B28 package.

### ●External dimensions (Unit : mm)



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

Parameter	Symbol	Limits	Unit
Power supply voltage	V <sub>CC</sub>	-0.3~+7.0	V
Maximum output voltage	V <sub>IN</sub>	-0.3~V <sub>CC</sub>	V
Storage temperature	T <sub>stg</sub>	-55~+125	°C
Power dissipation	P <sub>d</sub>	640*	mW

\*Reduced by 6.4mW for each increase in Ta of 1°C over 25°C.

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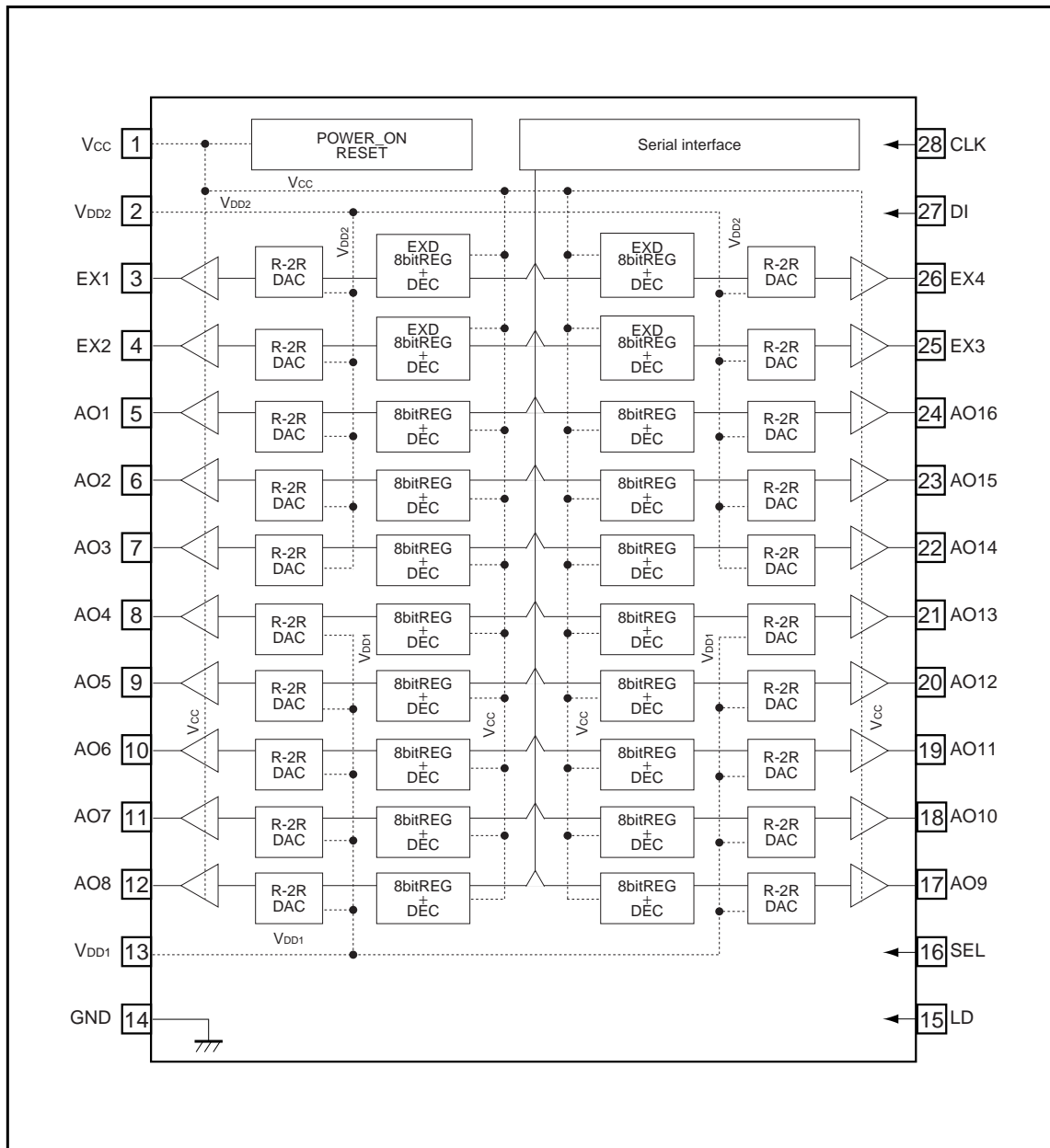
### ●Recommended operating conditions (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
V <sub>CC</sub> supply voltage	V <sub>CC</sub>	4.5	-	5.5	V
V <sub>DD1</sub> supply voltage	V <sub>DD1</sub>	2.7	-	V <sub>CC</sub>	V
V <sub>DD2</sub> supply voltage	V <sub>DD2</sub>	2.7	-	V <sub>CC</sub>	V
Analog output source current	I <sub>OL</sub>	-	-	1.0	mA
Analog output sink current	I <sub>OH</sub>	-	-	1.0	mA
Operating temperature range	T <sub>opr</sub>	-20	-	85	°C
Clock frequency	FSCLK	-	1.0	-	MHz
Limit load capacitance	CL	-	-	0.47	μF

Please set to V<sub>CC</sub> ≥ V<sub>DD1</sub>, V<sub>DD2</sub>.

Standard ICs

●Block diagram



## Standard ICs

## ●Pin descriptions

Pin No.	Pin name	In / Out	Power supply	Functions
1	Vcc	–	–	Power supply pin
2	V <sub>DD2</sub>	–	–	Power supply pin
3	EX1	OUT	V <sub>DD2</sub>	Analog output pins (Register extension)
4	EX2	OUT	V <sub>DD2</sub>	
5	AO1	OUT	V <sub>DD2</sub>	Analog output pins
6	AO2	OUT	V <sub>DD2</sub>	
7	AO3	OUT	V <sub>DD2</sub>	
8	AO4	OUT	V <sub>DD1</sub>	
9	AO5	OUT	V <sub>DD1</sub>	
10	AO6	OUT	V <sub>DD1</sub>	
11	AO7	OUT	V <sub>DD1</sub>	
12	AO8	OUT	V <sub>DD1</sub>	
13	V <sub>DD1</sub>	–	–	Power supply pin
14	GND	–	–	Common GND pin
15	LD	IN	–	Serial Load input pin
16	SEL	IN	–	Select extended data register pin
17	AO9	OUT	V <sub>DD1</sub>	Analog output pins
18	AO10	OUT	V <sub>DD1</sub>	
19	AO11	OUT	V <sub>DD1</sub>	
20	AO12	OUT	V <sub>DD1</sub>	
21	AO13	OUT	V <sub>DD1</sub>	
22	AO14	OUT	V <sub>DD2</sub>	
23	AO15	OUT	V <sub>DD2</sub>	
24	AO16	OUT	V <sub>DD2</sub>	
25	EX3	OUT	V <sub>DD2</sub>	Analog output pins (Register extension)
26	EX4	OUT	V <sub>DD2</sub>	
27	DI	IN	–	Serial Data input pin
28	CLK	IN	–	Serial Clock input pin

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