BA9201

Digital-to-analog converter, 8-bit, with latch

The BA9201 is an 8-bit D/A converter with a built-in reference voltage supply and internal data latch circuit.

The reference voltage supply circuit is an independent block and it can use an external reference power supply.

Systems which use multiple D/A converters can be easily designed by using the input data latch circuit.

Features

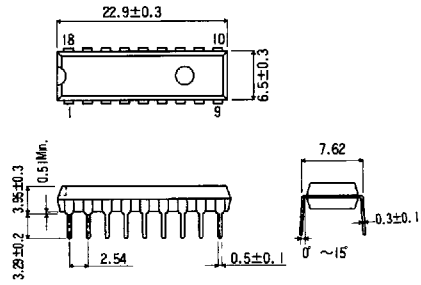
- available in DIP18 package
- built in reference supply voltage
- input latch is included to allow simple micro-computer control
- setting time is 500 ns

Applications

- measuring and control equipment
- digital audio equipment
- electrical musical instruments
- signal generators
- servo controllers

Dimensions (Units : mm)

BA9201 (DIP18)



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Block diagram

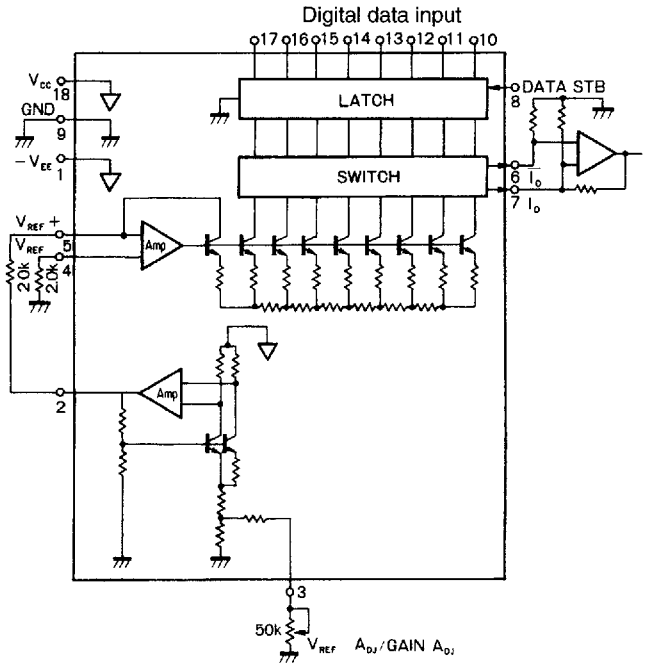
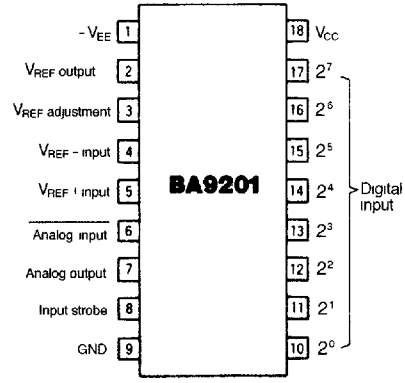


Figure 1 Pin connections



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Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Limits	Unit	Conditions
Power supply voltage (pin 18)	V_{CC}	6	V	
Power supply voltage (pin 1)	V_{EE}	−8.5	V	
Power dissipation	P_d	500	mW	Reduce power by 5 mW/°C for each degree above 25°C.
Operating temperature	T_{opr}	−25 ~ +75	°C	
Storage temperature	T_{stg}	−55 ~ +125	°C	

Code formats

Digital inputs	Analog outputs	
D7 D0	I_O (mA)	$\overline{I_O}$ (mA)
1111 1111	1.992	0.000
1111 1110	1.984	0.008
1000 0000	1.000	0.992
0111 1111	0.992	1.000
0000 0001	0.008	1.984
0000 0000	0.000	1.992

Electrical characteristics (T_a = 25°C, V_{CC} = 5 V, V_{EE} = -7 V)

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Resolving power	RES	8	8	8	bit	
Nonlinearity	NL			±1/2	LSB	
Full scale current	I_{FS}	1.90	1.992	2.10	mA	
Temperature-to-current coefficient, full scale	TCI_{FS}		±50		ppm/°C	When using an external reference power supply
Current asymmetric, full scale	I_{FSS}			±10	µA	$I_O - \overline{I_O}$
Settling time	t_S		500		ns	
Internal reference voltage	V_{REF}	2.005			V	Pin 3 – 9, R = 50 kΩ
				1.990	V	Pin 3 – 9, R = 0 kΩ
Ref voltage to temperature coefficient	TCV_{REF}		±100		ppm/°C	After adjusting V_{REF} to 2.00 V
High level digital input	V_{IH}	2.3			V	
Low level digital input	V_{IL}			0.8	V	
Digital input current	I_{IH}			400	µA	
Circuit current (pin 18)	I_{CC}		7		mA	
Circuit current (pin 1)	I_{EE}		+12		mA	
Operating voltage (pin18)	V_{CC}	4.5		5.5	V	
Operating voltage (pin 1)	V_{EE}	−6.3		−7.7	V	

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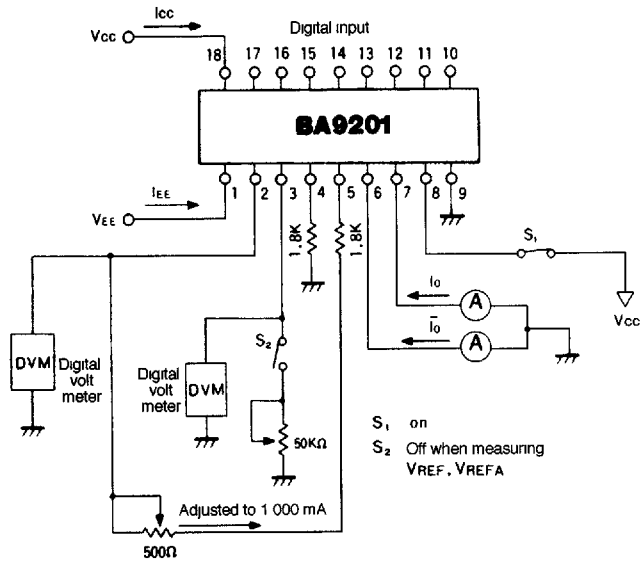
Figure 2 Test circuit



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