STRUCTURE Silicon Monolithic Integrated Circuit

TYPE **BU2152FS**

FUNCTION 24bit Serial IN / Parallel Out Driver

FEATURES 1) Outputs are capable of driving maximum of 25mA both at "H" and "L"

2) This product can be operated on low voltage. (2.7V)

● ABSOLUTE MAXIMUM RATINGS (Ta=25℃)

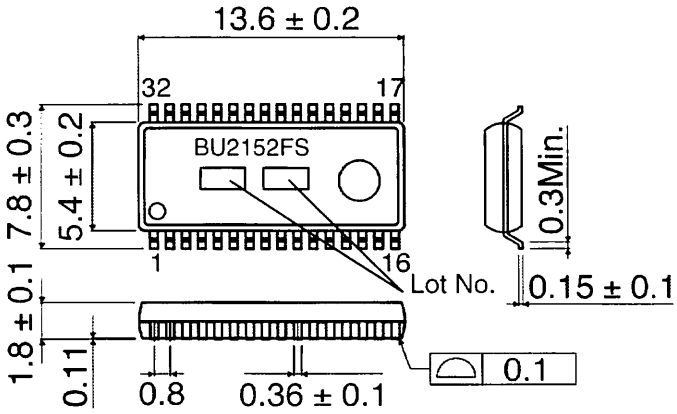
Parameter	Symbol	Limit	Unit
Power Supply Voltage	V_{DD}	7.0	V
Power Dissipation	Pd	800	mW
Operating Temperature Range	T_{opr}	-40～+85	℃
Storage Temperature Range	T_{stg}	-55～+125	℃
Input Voltage	V_{IN}	-0.3～V_{DD}+0.3	V

● ELECTRICAL CHARACTERISTICS (unless otherwise noted, Ta=25℃,V_{DD}=5.0V)

Parameter	Symbol	Standard Value			Unit	Condition
		MIN	TYP	MAX		
Power Supply Voltage range	V_{DD}	2.7	-	5.5	V	VDD pin
Supply current	I_{DD}	-	-	5	μA	Vin=VSS or VDD, Output=OPEN,VDD=5V
Input "H" voltage	V_{IH}	2	-	-	V	VDD=5V
Input "L" voltage	V_{IL}	-	-	0.6	V	VDD=5V
Input "H" current	I_{IH}	-	-	1	μA	
Input "L" current	I_{IL}	-	-	1	μA	
Data Minimum set up time	t_{su}	20	-	-	nS	
Data hold time	t_h	30	-	-	nS	VDD=5V
Minimum shift pulse width 1	t_{w1}	200	-	-	nS	

This product is not assessed whether to be strategic materials in foreign exchange and trade law or not, so please confirm at trading. This product is not deigned against radioactive ray.

● PHYSICAL DIMENSIONS

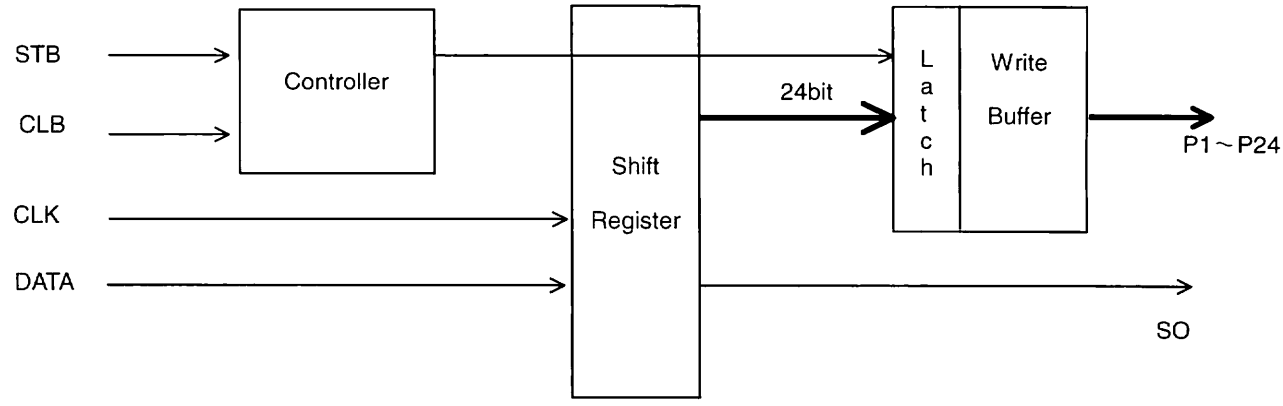


SSOP-A32 (UNIT : mm)

● Pin Description

Pin. No	Terminal	Symbol	Function
2	CLK	C	Shift pulse for shift register
4	DATA	S_I	Data input for shift register, data is set at rising edge of shift pulse
30	STB	S_{TB}	Strobe signal input, output is renewable at "1" and reserved at "0".
31	CLB	C_{LB}	Clear signal input, latch is cleared at "0".
29	SO	S_O	Data output of shift register, which is outputted at the rising edge of shift pulse.
5	P1	O_0	1st bit output, it becomes "1" when data in register is "1"
6	P2	O_1	2nd bit output, it becomes "1" when data in register is "1"
7	P3	O_2	3rd bit output, it becomes "1" when data in register is "1"
8	P4	O_3	4th bit output, it becomes "1" when data in register is "1"
9	P5	O_4	5th bit output, it becomes "1" when data in register is "1"
10	P6	O_5	6th bit output, it becomes "1" when data in register is "1"
11	P7	O_6	7th bit output, it becomes "1" when data in register is "1"
12	P8	O_7	8th bit output, it becomes "1" when data in register is "1"
13	P9	O_8	9th bit output, it becomes "1" when data in register is "1"
14	P10	O_9	10th bit output, it becomes "1" when data in register is "1"
15	P11	O_{10}	11th bit output, it becomes "1" when data in register is "1"
16	P12	O_{11}	12th bit output, it becomes "1" when data in register is "1"
17	P13	O_{12}	13th bit output, it becomes "1" when data in register is "1"
18	P14	O_{13}	14th bit output, it becomes "1" when data in register is "1"
19	P15	O_{14}	15th bit output, it becomes "1" when data in register is "1"
20	P16	O_{15}	16th bit output, it becomes "1" when data in register is "1"
21	P17	O_{16}	17th bit output, it becomes "1" when data in register is "1"
22	P18	O_{17}	18th bit output, it becomes "1" when data in register is "1"
23	P19	O_{18}	19th bit output, it becomes "1" when data in register is "1"
24	P20	O_{19}	20th bit output, it becomes "1" when data in register is "1"
25	P21	O_{20}	21st bit output, it becomes "1" when data in register is "1"
26	P22	O_{21}	22nd bit output, it becomes "1" when data in register is "1"
27	P23	O_{22}	23rd bit output, it becomes "1" when data in register is "1"
28	P24	O_{23}	24th bit output, it becomes "1" when data in register is "1"
3	VSS	GND	GND
1	VSS	GND	GND
32	VDD	VDD	Power supply

● BLOCK DIAGRAM



● NOTES FOR USE

(1) Absolute maximum ratings
Exceeding the absolute maximum ratings, including applied voltage and operating temperature range, may damage or destroy the IC. Since the cause of the damage cannot be conclusively identified (as, for example, a short or open mode), be sure to take appropriate physical safety measures, such as incorporating fuses, whenever a special mode anticipated to exceed absolute maximum ratings is employed.

(2) Ground Potential
Make sure the potential for the GND pin is always kept lower than the potentials of all other pins, regardless of the operating mode.

(3) Thermal design
Provide sufficient margin in the thermal design to account for the allowable power dissipation (Pd) expected in actual use.

(4) Electromagnetic fields
Use in strong electromagnetic fields may cause malfunctions. Be careful operating in electromagnetic fields.

(5) Ground wiring pattern
When both a small-signal GND and high current GND are present, single-point grounding (at the set standard point) is recommended, in order to separate the small-signal and high current patterns, and to be sure the voltage change stemming from the wiring resistance and high current does not cause any voltage change in the small-signal GND. In the same way, care must be taken to avoid wiring pattern fluctuations in any connected external component GND.

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