◇Structure Silicon monolithic integrated circuit
◇Product Series Lens control LSI
◇Type BU24033GW
◇Applications Digital still cameras
◇Functions ・Built-in 6 channels Driver block : 1-5ch Voltage control type H-bridge(Adaptable to STM 2systems)
: 6ch Current control type H-Bridge
・Built-in 2 channels PI driving circuit
・Built-in 3 channels Waveforming circuit
・Built-in FLL digital servo circuit
・Built-in PLL circuit

◇Absolute maximum ratings (Ta = 25°C)

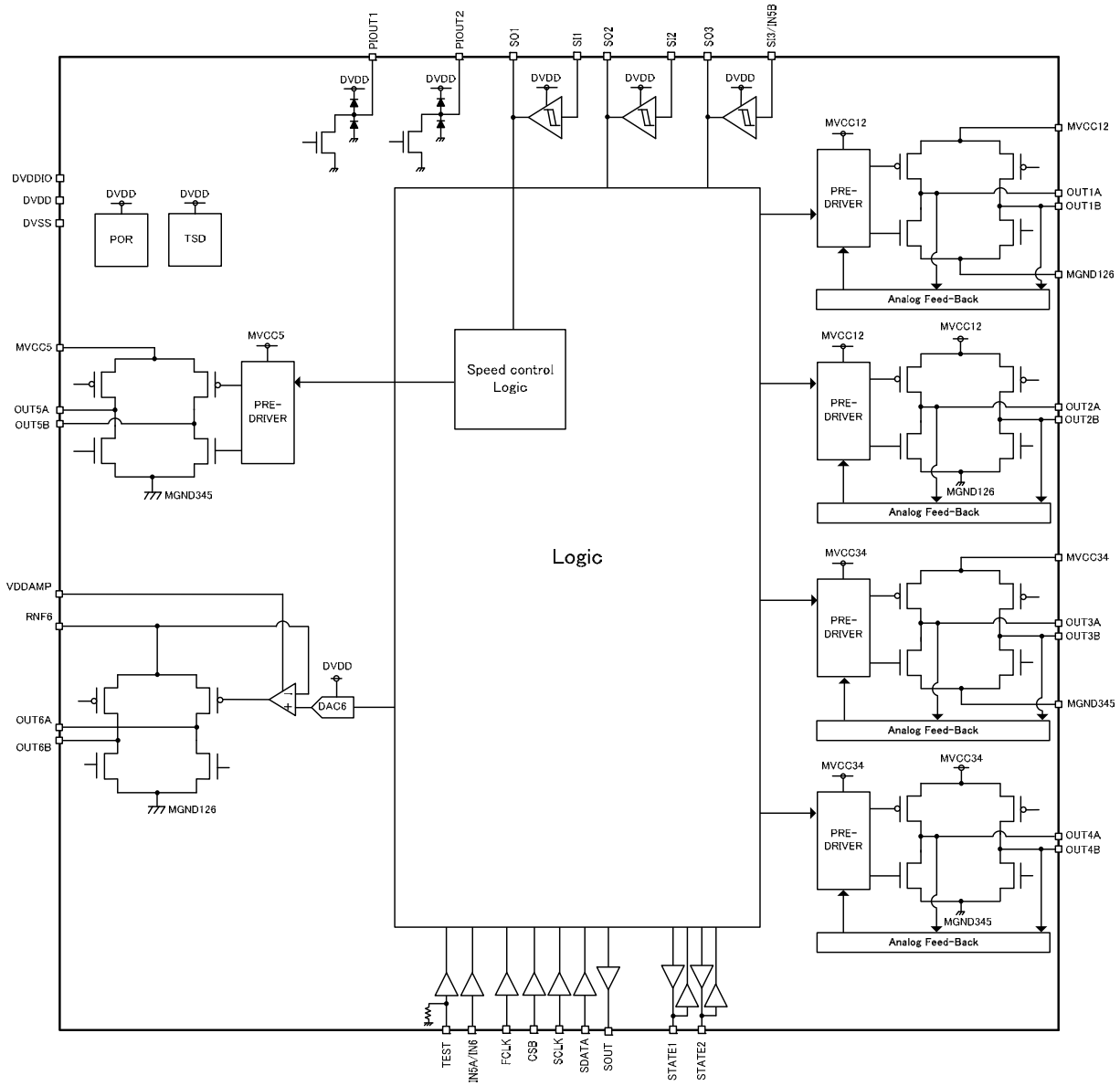
Parameter	Symbol	Limits	Unit	Remark
Power supply voltage	DVDDIO DVDD	−0.3～4.5	V	
	MVCC	−0.3～7.0	V	MVCC12,MVCC34, MVCC5,VDDAMP
Input voltage	VIN	−0.3～supply voltage+0.3	V	
Input/output current *1	IIN	±500	mA	MVCC12,MVCC34,RNF6
		±600	mA	MVCC5
		+50	mA	by PIOUT pin
Storage temperature range	TSTG	−55～125	°C	
Operating temperature range	TOPE	−20～85	°C	
Permissible dissipation *2	PD	1000	mW	

This product is not designed for anti-radiation applications.
*1 Must not exceed PD.
*2 To use at a temperature higher than Ta=25 °C, derate 10mW per 1 °C
(At mounting 50mm x 58mm x 1.75mm glass epoxy board.)

◇Operating conditions (Ta = 25°C)

Parameter	Symbol	Limits	Unit	Remark
I/O power supply voltage	DVDDIO	1.62～3.6	V	
Digital power supply voltage	DVDD	2.7～3.6	V	DVDD≦MVCC
Driver power supply voltage	MVCC	2.7～5.5	V	MVCC12,MVCC34, MVCC5,VDDAMP
clock operating frequency	FCLK	1～28	MHz	Reference clock

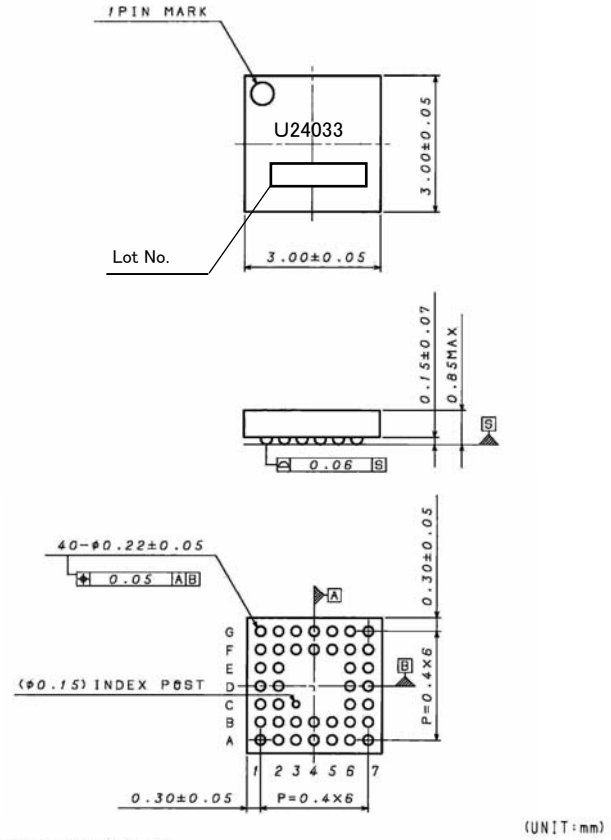
◇Block Diagram



◇Pin functions

Land Matrix No.	Pin name	Power supply	Function
E6	DVDD	–	Digital power supply
D6	DVDDIO	–	I/O power supply
F6	DVSS	–	ground
A6	FCLK	DVDDIO	FCLK logic input
E2	CSB	DVDDIO	CSB logic input
F4	SCLK	DVDDIO	SCLK logic input
F3	SDATA	DVDDIO	SDATA logic input
F2	SOUT	DVDDIO	SOUT logic output
D2	IN6 / IN5A	DVDDIO	IN6 / IN5A logic input
B5	STATE1	DVDDIO	STATE1 logic input/output
B4	STATE2	DVDDIO	STATE2 logic input/output
G1	TEST	DVDDIO	TEST logic output
E7	PIOUT1	DVDD	PI driving output 1
G7	PIOUT2	DVDD	PI driving output 2
B3	SI1	DVDD	Waveforming input1
B2	SO1	DVDD	Waveforming output1
D7	SI2	DVDD	Waveforming input2
F7	SO2	DVDD	Waveforming output2
F5	SI3 / IN5B	DVDD	Waveforming input3 / IN5B logic input
C2	SO3	DVDD	Waveforming output3
A2	MVCC12	–	1ch, 2ch Driver power supply
A4	MGND126	–	1ch, 2ch, 6ch Driver ground
A1	OUT1A	MVCC12	1ch Driver A output
B1	OUT1B	MVCC12	1ch Driver B output
A3	OUT2A	MVCC12	2ch Driver A output
A5	OUT2B	MVCC12	2ch Driver B output
G5	MVCC34	–	3ch, 4ch Driver power supply
F1	MGND345	–	3ch, 4ch, 5ch Driver ground
G6	OUT3A	MVCC34	3ch Driver A output
G4	OUT3B	MVCC34	3ch Driver B output
G3	OUT4A	MVCC34	4ch Driver A output
G2	OUT4B	MVCC34	4ch Driver B output
D1	MVCC5	–	5ch Driver power supply
C1	OUT5A	MVCC5	5ch Driver A output
E1	OUT5B	MVCC5	5ch Driver B output
C6	VDDAMP	–	6ch Power supply of current driver control
A7,B6	RNF6	–	6ch Driver power supply
C7	OUT6A	RNF6	6ch Driver A output
B7	OUT6B	RNF6	6ch Driver B output

◇Outline dimensions/Marking figure



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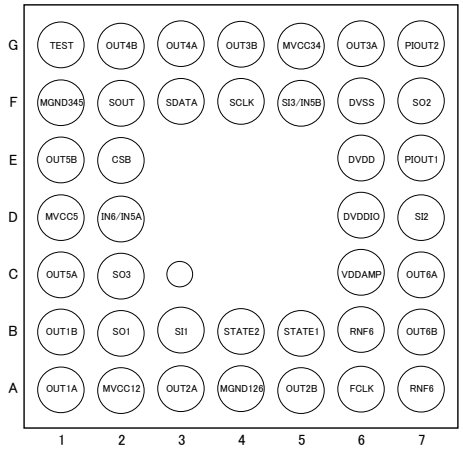
◇Pin assignment diagram (bottom view)



◇Cautions on use

(1)Absolute maximum ratings

If applied voltage, operating temperature range, or other absolute maximum ratings are exceeded, the LSI may be damaged. Do not apply voltages or temperatures that exceed the absolute maximum ratings. If you expect that any voltage or temperature could be exceeding the absolute maximum ratings, take physical safety measures such as fuses to prevent any conditions exceeding the absolute maximum ratings from being applied to the LSI.

(2)GND potential

Maintain the GND pin at the minimum voltage even under any operating conditions.
Actually check to be sure that none of the pins have voltage lower than that of GND pin, including transient phenomena.

(3)Thermal design

With consideration given to the permissible dissipation under actual use conditions, perform thermal design so that adequate margins will be provided.

(4)Short circuit between pins and malfunctions

To mount the LSI on a board, pay utmost attention to the orientation and displacement of the LSI. Faulty mounting to apply a voltage to the LSI may cause damage to the LSI. Furthermore, the LSI may also be damaged if any foreign matters enter between pins, between pin and power supply, or between pin and GND of the LSI.

(5)Operation in strong magnetic field

Make a thorough evaluation on use of the LSI in a strong magnetic field. Not doing so may malfunction the LSI.

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