DATA SHEET

Part No.	AN30216A
Package Code No.	HQFN044-P-0606

Contents

AN30216A

ASSP power supply IC

■ Overview

AN30216A is ASSP Multiple-Output Power Supply IC. It is suitable for CCD system power supply of DSC and cellular phones, etc.

■ Features

- Supply voltage range: 1.5 V to 5.5 V (AA-type battery × 2, lithium 1 cell)
  * lithium 2 cells available depending on system configurations
- High precision reference voltage: 1.262 V±1%
- External setting of oscillation frequency: 500 kHz to 1.5 MHz (Ch.6 to Ch.8)
- Power supply outputs composition
  · Ch.1: Synchronous rectification step-up current mode control
  · Ch.2: Synchronous rectification current mode control (step-up/down selectable)
  · Ch.3 to Ch.5: Synchronous rectification step-down current mode control
  · Ch.6: Inverting control of voltage mode for CCD
  · Ch.7: Step-up control of voltage mode for CCD
  · Ch.8: Step-up control of voltage mode for LED drive
- Error amp. threshold: ±1.5%
- Standby current: 5 μA or less
- Timer/latch short-circuit protection circuits
- Soft-start
- Power MOSFET (excluding Ch.6)
- I/O shutdown during standby mode (Ch.1, 2, 7, 8)
  * Available for Ch.2 in step-up mode

■ Applications

- For digital still cameras

■ Package

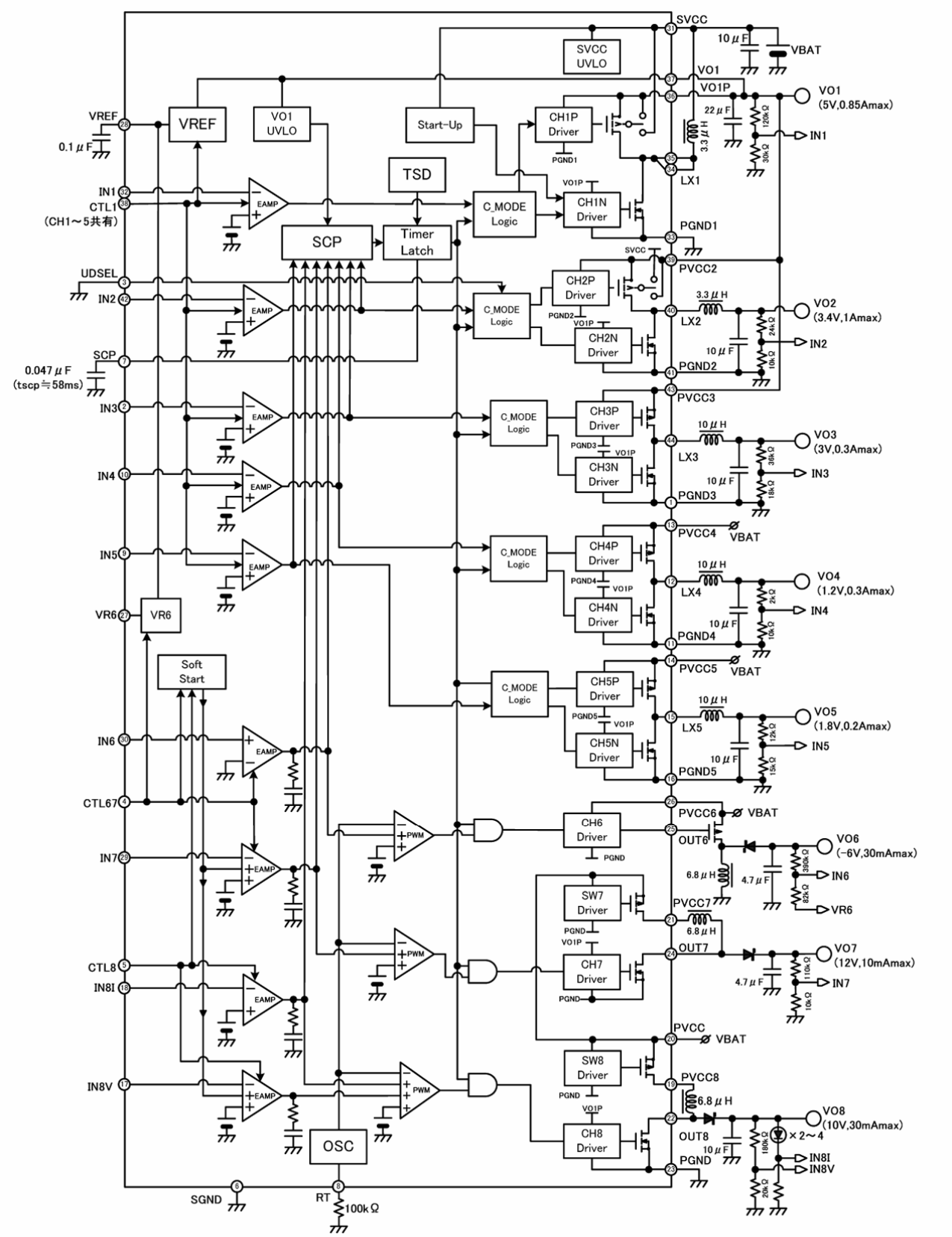
- 44-pin plastic quad flat non-leaded package heat slug down (QFN type)

■ Type

- Bi-CDMOS

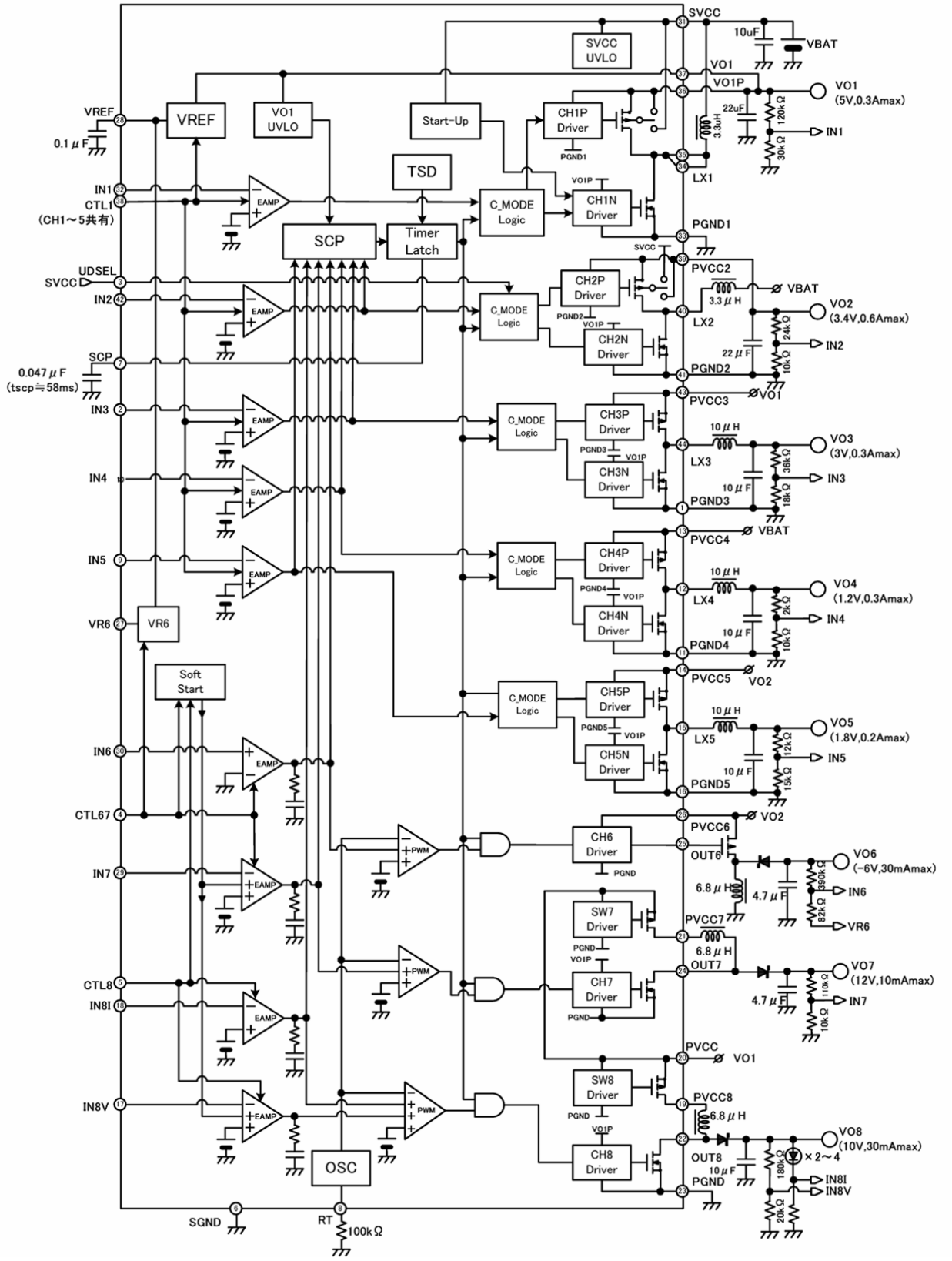
■ Block Diagram (Application Circuit Example)

- Li × 1 cell (3 V to 4.2 V)



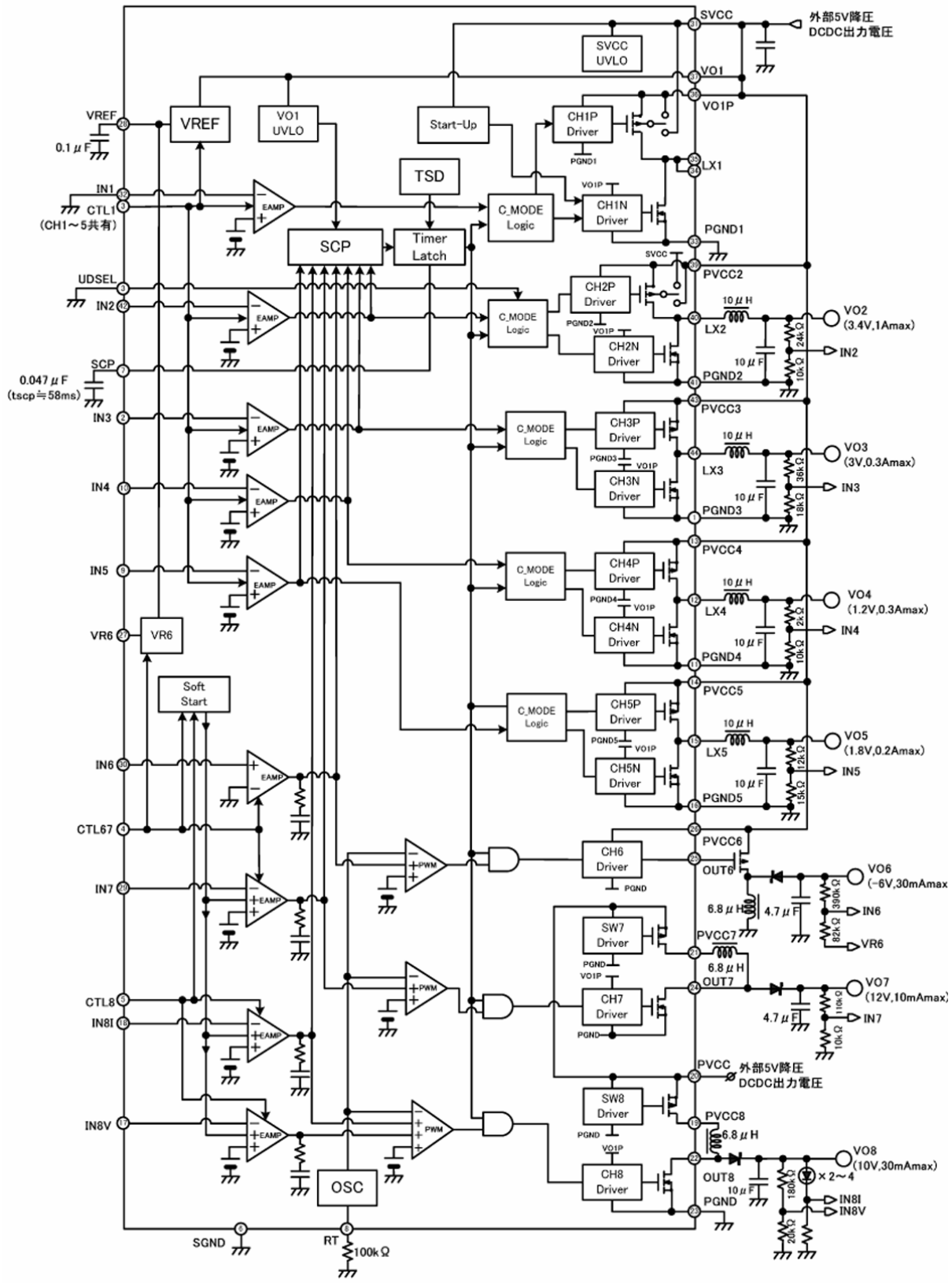
■ Block Diagram (Application Circuit Example) (continued)

- AA-type battery × 2 (1.5 V to 3.4 V)



■ Block Diagram (Application Circuit Example) (continued)

- Li × 2 cells (SVCC = VO1 = VO1P = 5 V)



■ Pin Descriptions

Pin No.	Pin name	Type	Description
1	PGND3	Ground	Ch.3 ground for output stage
2	IN3	Input	Ch.3 error amplifier inverting input
3	CTL1	Input	Ch.1 to Ch.5 common ON/OFF control
4	CTL67	Input	Ch.6, Ch.7 common ON/OFF control
5	CTL8	Input	Ch.8 ON/OFF control
6	SGND	Ground	GND (Signal block)
7	SCP	Output	Capacitor connection pin for timer latch time setting
8	RT	—	Resistor connection pin for oscillation frequency setting
9	IN5	Input	Ch.5 error amplifier inverting input
10	IN4	Input	Ch.4 error amplifier inverting input
11	PGND4	Ground	Ch.4 ground for output stage
12	LX4	—	Ch.4 inductive (L) load connection
13	PVCC4	Power supply	Ch.4 DC-DC supply voltage input
14	PVCC5	Power supply	Ch.5 DC-DC supply voltage input
15	LX5	—	Ch.5 inductive (L) load connection
16	PGND5	Ground	Ch.5 ground for output stage
17	IN8V	Input	Ch.8 error amplifier inverting input for voltage detection
18	IN8I	Input	Ch.8 error amplifier inverting input for current detection
19	PVCC8	Output	Ch.8 Load-SW output
20	PVCC	Power supply	Ch.7, Ch.8 DC-DC supply voltage input
21	PVCC7	Output	Ch.7 Load-SW output
22	OUT8	Output	Ch.8 inductive (L) load connection
23	PGND	Ground	Ch.6 to Ch.8 output stage common ground pin
24	OUT7	—	Ch.7 inductive (L) load connection
25	OUT6	Output	Ch.6 Pch gate drive signal output
26	PVCC6	Power supply	Ch.6 driver supply voltage input
27	VR6	Output	Ch.6 bias voltage output for output voltage detection
28	VREF	Output	Bandgap voltage output
29	IN7	Input	Ch.7 error amplifier inverting input
30	IN6	Input	Ch.6 error amplifier non-inverting input
31	SVCC	Power supply	Battery voltage input
32	IN1	Input	Ch.1 error amplifier inverting input
33	PGND1	Ground	Ch.1 ground for output stage
34	LX1	—	Ch.1 inductive (L) load connection1
35	LX1	—	Ch.1 inductive (L) load connection2

■ Pin Descriptions (continued)

Pin No.	Pin name	Type	Description
36	VO1P	Output	Ch.1 DC-DC output
37	VO1	Input	Supply voltage input for control block
38	UDSEL	Input	Ch.2 step-up/down switch setting
39	PVCC2	Power supply	Ch.2 DC-DC supply voltage input
40	LX2	—	Ch.2 inductive (L) load connection
41	PGND2	Ground	Ch.2 ground for output stage
42	IN2	Input	Ch.2 error amplifier inverting input
43	PVCC3	Power supply	Ch.3 DC-DC supply voltage input
44	LX3	—	Ch.3 inductive (L) load connection

■ Absolute Maximum Ratings

A No.	Parameter	Symbol	Rating	Unit	Note
1	Supply voltage	SVCC PVCC PVCC2 PVCC3 PVCC4 PVCC5 VO1 VO1P	6.5	V	*1
2	Supply current	I_{CC}	—	A	—
3	Power dissipation	P_D	242.4	mW	*2
4	Operating ambient temperature	T_{opr}	–20 to +85	°C	*3
5	Storage temperature	T_{stg}	–55 to +150	°C	*3

Note) *1: The values under the condition not exceeding the above absolute maximum ratings and the power dissipation.
*2: The power dissipation shown is the value at T_a = 85°C for the independent (unmounted) IC package.
*3: Except for the power dissipation, operating ambient temperature, and storage temperature, all ratings are for T_a = 25°C.

■ Operating Supply Voltage Range

Parameter	Symbol	Range	Unit	Note
Supply voltage range	SVCC	1.5 to 5.5	V	*1
	VO1, VO1P	4.5 to 5.5		*1
	PVCC2	4.5 to 5.5		*1, 2
	PVCC3	4.5 to 5.5		*1
	PVCC4	1.5 to 5.5		*1
	PVCC5	2.5 to 5.5		*1
	PVCC6, PVCC	2.5 to 5.5		*1

Note) *1: The values under the condition not exceeding the above absolute maximum ratings and the power dissipation.
*2: The values when Ch.2 output is used in step-down mode

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