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S-1335 Series

HIGH RIPPLE-REJECTION SOFT-START FUNCTION CMOS VOLTAGE REGULATOR

www.sii-ic.com

Rev.1.3_01

The S-1335 Series, developed by using the CMOS technology, is a positive voltage regulator IC of 150 mA output current, which has low dropout voltage, high-accuracy output voltage and soft-start function.
The rising time of output voltage immediately after power-on or after the ON / OFF pin is set to ON is adjustable. A 1.0 µF small ceramic capacitor can be used. It operates with low current consumption of 36 µA typ. Furthermore the overcurrent protection circuit prevents the load current from exceeding the capacity of output transistor.
SOT-23-5, SC-82AB and super small HSNT-4 (1010) packages realize high-density mounting.

■ Features

- Output voltage: 1.0 V to 3.6 V, selectable in 0.05 V step
- Input voltage: 1.5 V to 5.5 V
- Output voltage accuracy: ±1.0% (1.0 V to 1.45 V output product: ±15 mV)
- Dropout voltage: 70 mV typ. (2.8 V output product, I_{OUT} = 100 mA)
- Current consumption: During operation: 36 µA typ., 54 µA max.
  During power-off: 0.1 µA typ., 1.0 µA max.
- Output current: Possible to output 150 mA ($V_{IN} \geq V_{OUT(S)} + 1.0$ V)*1
- Input and output capacitors: A ceramic capacitor of 1.0 µF or more can be used.
- Ripple rejection: 70 dB typ. (f = 10 kHz, $V_{OUT(S)} \leq 2.5$ V)
  80 dB typ. (f = 1.0 kHz)
- Built-in soft-start circuit: The rising time of output voltage immediately after power-on or after the ON / OFF pin is set to ON is adjustable.
  The soft-start time of SOT-23-5 can be switched to t_{SS0} = 0.1 ms typ. / t_{SS1} = 1.0 ms typ. with the SST pin.
  The soft-start time of SC-82AB is fixed to t_{SS0} = 0.1 ms typ.
  The soft-start time of HSNT-4 (1010) is fixed to either t_{SS0} = 0.1 ms typ. or t_{SS1} = 1.0 ms typ.
- Built-in overcurrent protection circuit: Limits overcurrent of output transistor.
- Built-in ON / OFF circuit: Ensures long battery life.
- Pull-down resistor is selectable.
- Discharge shunt function is selectable.
- Operation temperature range: Ta = –40°C to +85°C
- Lead-free (Sn 100%), halogen-free

***1.** Attention should be paid to the power dissipation of the package when the output current is large.

■ Applications

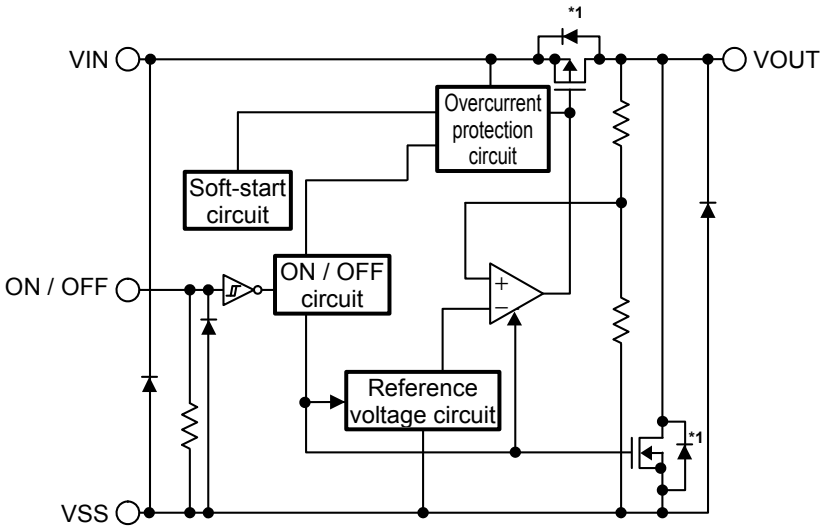
- Constant-voltage power supply for digital still camera, TV
- Constant-voltage power supply for battery-powered device
- Constant-voltage power supply for cellular phone
- Constant-voltage power supply for portable equipment

■ Packages

- SOT-23-5
- SC-82AB
- HSNT-4 (1010)

■ Block Diagrams

1. S-1335 Series A / E type

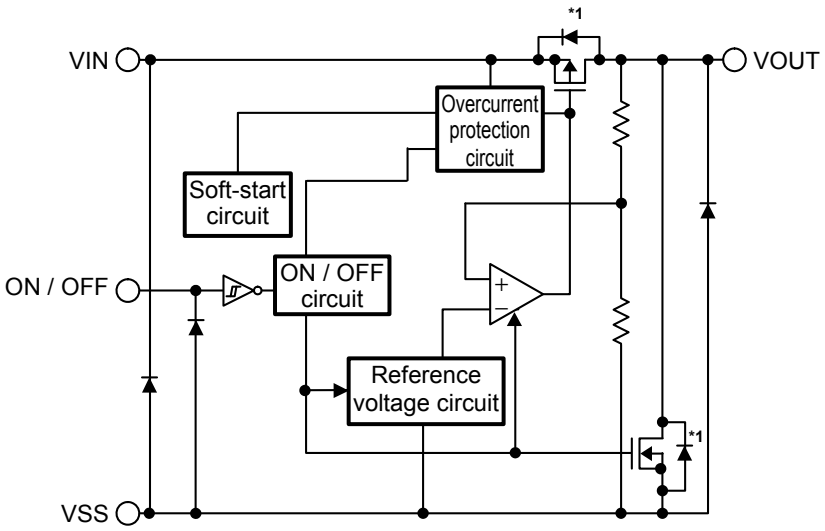


Function	Status
ON / OFF logic	Active "H"
Discharge shunt function	Available
Pull-down resistor	Available
Soft-start time (typ.)	A type: 0.1 ms E type: 1.0 ms

***1.** Parasitic diode

Figure 1

2. S-1335 Series B / F type

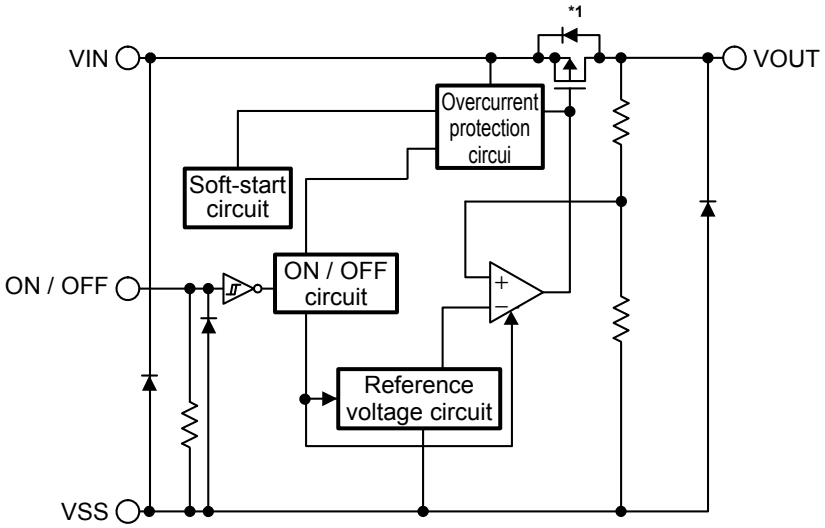


Function	Status
ON / OFF logic	Active "H"
Discharge shunt function	Available
Pull-down resistor	Unavailable
Soft-start time (typ.)	B type: 0.1 ms F type: 1.0 ms

***1.** Parasitic diode

Figure 2

3. S-1335 Series C / G type

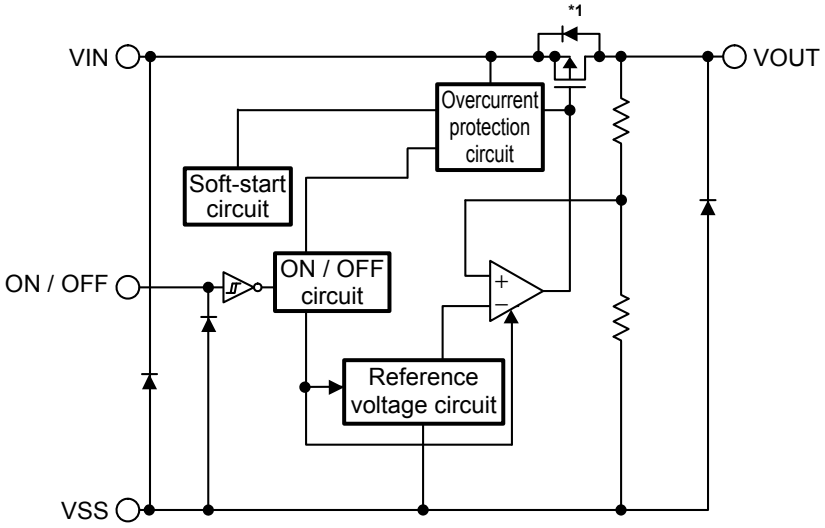


Function	Status
ON / OFF logic	Active "H"
Discharge shunt function	Unavailable
Pull-down resistor	Available
Soft-start time (typ.)	C type: 0.1 ms G type: 1.0 ms

***1.** Parasitic diode

Figure 3

4. S-1335 Series D / H type

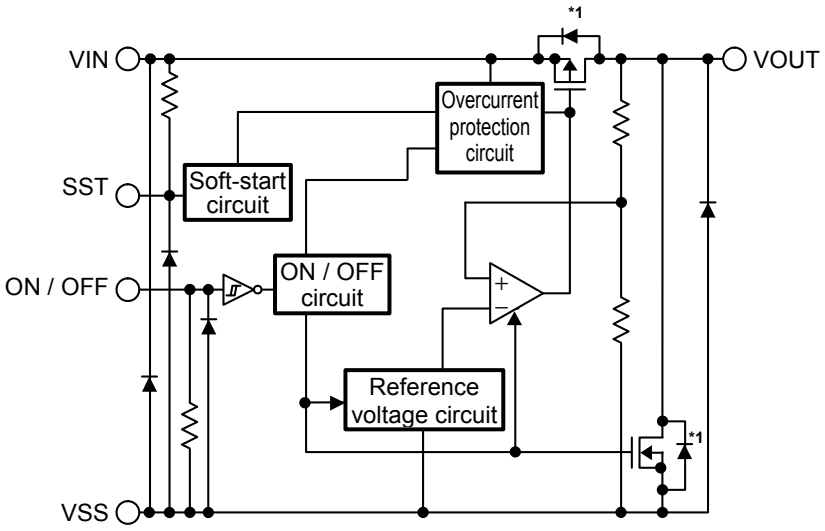


Function	Status
ON / OFF logic	Active "H"
Discharge shunt function	Unavailable
Pull-down resistor	Unavailable
Soft-start time (typ.)	D type: 0.1 ms H type: 1.0 ms

***1.** Parasitic diode

Figure 4

5. S-1335 Series J type

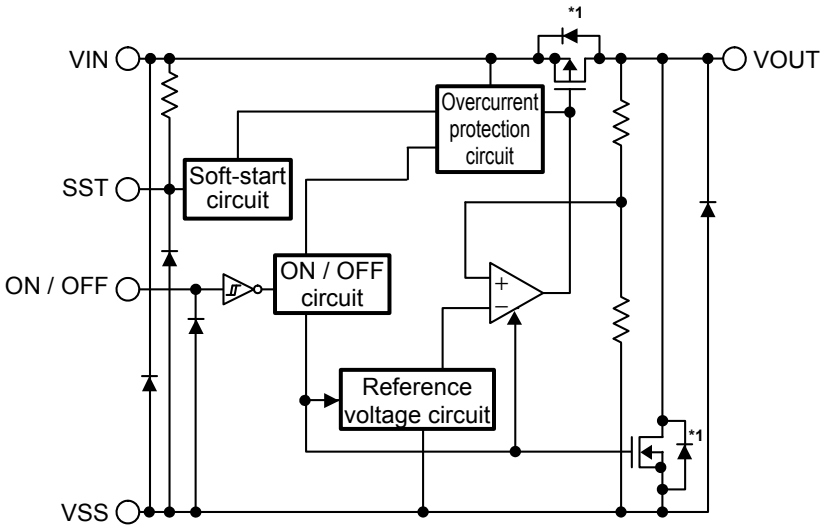


Function	Status
ON / OFF logic	Active "H"
Discharge shunt function	Available
Pull-down resistor	Available
Soft-start time (typ.)	0.1 ms / 1.0 ms (Switchable)

***1.** Parasitic diode

Figure 5

6. S-1335 Series K type

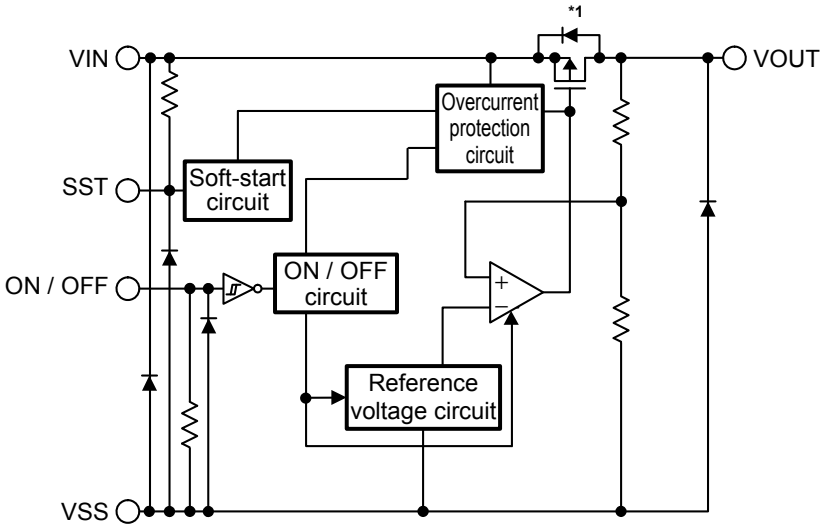


Function	Status
ON / OFF logic	Active "H"
Discharge shunt function	Available
Pull-down resistor	Unavailable
Soft-start time (typ.)	0.1 ms / 1.0 ms (Switchable)

***1.** Parasitic diode

Figure 6

7. S-1335 Series L type

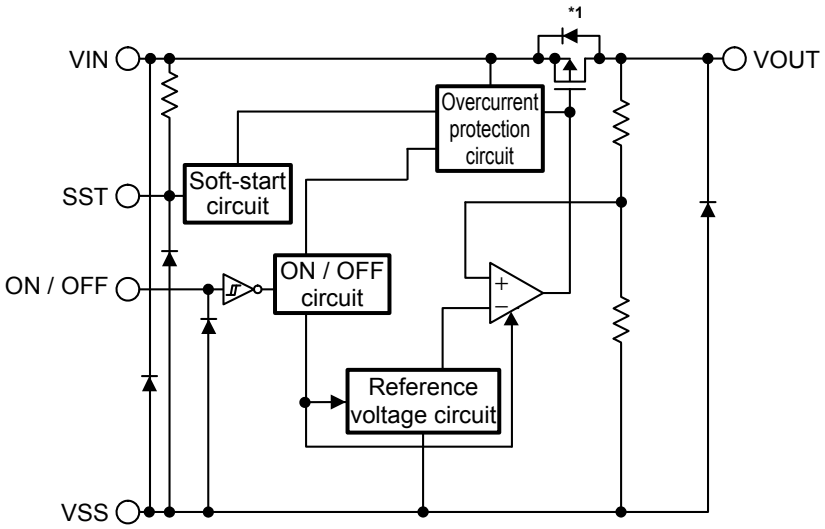


Function	Status
ON / OFF logic	Active "H"
Discharge shunt function	Unavailable
Pull-down resistor	Available
Soft-start time (typ.)	0.1 ms / 1.0 ms (Switchable)

***1.** Parasitic diode

Figure 7

8. S-1335 Series M type



Function	Status
ON / OFF logic	Active "H"
Discharge shunt function	Unavailable
Pull-down resistor	Unavailable
Soft-start time (typ.)	0.1 ms / 1.0 ms (Switchable)

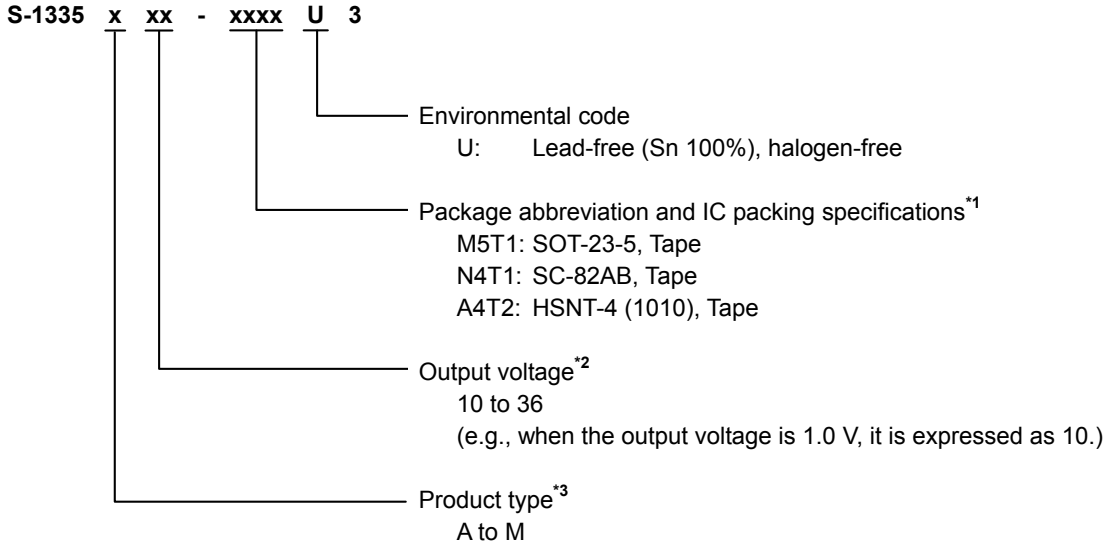
***1.** Parasitic diode

Figure 8

■ Product Name Structure

Users can select the product type, output voltage, and package type for the S-1335 Series. Refer to "**1. Product name**" regarding the contents of product name, "**2. Function list of product type**" regarding the product type, "**3. Packages**" regarding the package drawings, "**4. Product name list**" regarding details of the product name.

1. Product name



***1.** Refer to the tape drawing.
***2.** If you request the product which has 0.05 V step, contact our sales office.
***3.** Refer to "**2. Function list of product type**".

2. Function list of product type

Table 1

Product Type	ON / OFF Logic	Discharge Shunt Function	Pull-down Resistor	Soft-start Time (typ.)	Package
A	Active "H"	Available	Available	0.1 ms	SC-82AB, HSNT-4 (1010)
B	Active "H"	Available	Unavailable	0.1 ms	SC-82AB, HSNT-4 (1010)
C	Active "H"	Unavailable	Available	0.1 ms	SC-82AB, HSNT-4 (1010)
D	Active "H"	Unavailable	Unavailable	0.1 ms	SC-82AB, HSNT-4 (1010)
E	Active "H"	Available	Available	1.0 ms	HSNT-4 (1010)
F	Active "H"	Available	Unavailable	1.0 ms	HSNT-4 (1010)
G	Active "H"	Unavailable	Available	1.0 ms	HSNT-4 (1010)
H	Active "H"	Unavailable	Unavailable	1.0 ms	HSNT-4 (1010)
J	Active "H"	Available	Available	0.1 ms / 1.0 ms (Switchable)	SOT-23-5
K	Active "H"	Available	Unavailable	0.1 ms / 1.0 ms (Switchable)	SOT-23-5
L	Active "H"	Unavailable	Available	0.1 ms / 1.0 ms (Switchable)	SOT-23-5
M	Active "H"	Unavailable	Unavailable	0.1 ms / 1.0 ms (Switchable)	SOT-23-5

3. Packages

Table 2 Package Drawing Codes

Package Name	Dimension	Tape	Reel	Land
SOT-23-5	MP005-A-P-SD	MP005-A-C-SD	MP005-A-R-SD	–
SC-82AB	NP004-A-P-SD	NP004-A-C-SD NP004-A-C-S1	NP004-A-R-SD	–
HSNT-4 (1010)	PL004-A-P-SD	PL004-A-C-SD	PL004-A-R-SD	PL004-A-L-SD

4. Product name list

4. 1 S-1335 Series A type

ON / OFF logic: Active "H"
Discharge shunt function: Available
Pull-down resistor: Available
Soft-start time: 0.1 ms typ.

Table 3

Output Voltage	SC-82AB	HSNT-4 (1010)
1.0 V ± 15 mV	S-1335A10-N4T1U3	S-1335A10-A4T2U3
1.1 V ± 15 mV	S-1335A11-N4T1U3	S-1335A11-A4T2U3
1.2 V ± 15 mV	S-1335A12-N4T1U3	S-1335A12-A4T2U3
1.3 V ± 15 mV	S-1335A13-N4T1U3	S-1335A13-A4T2U3
1.4 V ± 15 mV	S-1335A14-N4T1U3	S-1335A14-A4T2U3
1.5 V ± 1.0%	S-1335A15-N4T1U3	S-1335A15-A4T2U3
1.6 V ± 1.0%	S-1335A16-N4T1U3	S-1335A16-A4T2U3
1.7 V ± 1.0%	S-1335A17-N4T1U3	S-1335A17-A4T2U3
1.8 V ± 1.0%	S-1335A18-N4T1U3	S-1335A18-A4T2U3
1.9 V ± 1.0%	S-1335A19-N4T1U3	S-1335A19-A4T2U3
2.0 V ± 1.0%	S-1335A20-N4T1U3	S-1335A20-A4T2U3
2.1 V ± 1.0%	S-1335A21-N4T1U3	S-1335A21-A4T2U3
2.2 V ± 1.0%	S-1335A22-N4T1U3	S-1335A22-A4T2U3
2.3 V ± 1.0%	S-1335A23-N4T1U3	S-1335A23-A4T2U3
2.4 V ± 1.0%	S-1335A24-N4T1U3	S-1335A24-A4T2U3
2.5 V ± 1.0%	S-1335A25-N4T1U3	S-1335A25-A4T2U3
2.6 V ± 1.0%	S-1335A26-N4T1U3	S-1335A26-A4T2U3
2.7 V ± 1.0%	S-1335A27-N4T1U3	S-1335A27-A4T2U3
2.8 V ± 1.0%	S-1335A28-N4T1U3	S-1335A28-A4T2U3
2.85 V ± 1.0%	S-1335A2J-N4T1U3	S-1335A2J-A4T2U3
2.9 V ± 1.0%	S-1335A29-N4T1U3	S-1335A29-A4T2U3
3.0 V ± 1.0%	S-1335A30-N4T1U3	S-1335A30-A4T2U3
3.1 V ± 1.0%	S-1335A31-N4T1U3	S-1335A31-A4T2U3
3.2 V ± 1.0%	S-1335A32-N4T1U3	S-1335A32-A4T2U3
3.3 V ± 1.0%	S-1335A33-N4T1U3	S-1335A33-A4T2U3
3.4 V ± 1.0%	S-1335A34-N4T1U3	S-1335A34-A4T2U3
3.5 V ± 1.0%	S-1335A35-N4T1U3	S-1335A35-A4T2U3
3.6 V ± 1.0%	S-1335A36-N4T1U3	S-1335A36-A4T2U3

Remark Please contact our sales office for products with specifications other than the above.

4. 2 S-1335 Series B type

ON / OFF logic: Active "H"
Discharge shunt function: Available
Pull-down resistor: Unavailable
Soft-start time: 0.1 ms typ.

Table 4

Output Voltage	SC-82AB	HSNT-4 (1010)
1.0 V ± 15 mV	S-1335B10-N4T1U3	S-1335B10-A4T2U3
1.1 V ± 15 mV	S-1335B11-N4T1U3	S-1335B11-A4T2U3
1.2 V ± 15 mV	S-1335B12-N4T1U3	S-1335B12-A4T2U3
1.3 V ± 15 mV	S-1335B13-N4T1U3	S-1335B13-A4T2U3
1.4 V ± 15 mV	S-1335B14-N4T1U3	S-1335B14-A4T2U3
1.5 V ± 1.0%	S-1335B15-N4T1U3	S-1335B15-A4T2U3
1.6 V ± 1.0%	S-1335B16-N4T1U3	S-1335B16-A4T2U3
1.7 V ± 1.0%	S-1335B17-N4T1U3	S-1335B17-A4T2U3
1.8 V ± 1.0%	S-1335B18-N4T1U3	S-1335B18-A4T2U3
1.9 V ± 1.0%	S-1335B19-N4T1U3	S-1335B19-A4T2U3
2.0 V ± 1.0%	S-1335B20-N4T1U3	S-1335B20-A4T2U3
2.1 V ± 1.0%	S-1335B21-N4T1U3	S-1335B21-A4T2U3
2.2 V ± 1.0%	S-1335B22-N4T1U3	S-1335B22-A4T2U3
2.3 V ± 1.0%	S-1335B23-N4T1U3	S-1335B23-A4T2U3
2.4 V ± 1.0%	S-1335B24-N4T1U3	S-1335B24-A4T2U3
2.5 V ± 1.0%	S-1335B25-N4T1U3	S-1335B25-A4T2U3
2.6 V ± 1.0%	S-1335B26-N4T1U3	S-1335B26-A4T2U3
2.7 V ± 1.0%	S-1335B27-N4T1U3	S-1335B27-A4T2U3
2.8 V ± 1.0%	S-1335B28-N4T1U3	S-1335B28-A4T2U3
2.85 V ± 1.0%	S-1335B2J-N4T1U3	S-1335B2J-A4T2U3
2.9 V ± 1.0%	S-1335B29-N4T1U3	S-1335B29-A4T2U3
3.0 V ± 1.0%	S-1335B30-N4T1U3	S-1335B30-A4T2U3
3.1 V ± 1.0%	S-1335B31-N4T1U3	S-1335B31-A4T2U3
3.2 V ± 1.0%	S-1335B32-N4T1U3	S-1335B32-A4T2U3
3.3 V ± 1.0%	S-1335B33-N4T1U3	S-1335B33-A4T2U3
3.4 V ± 1.0%	S-1335B34-N4T1U3	S-1335B34-A4T2U3
3.5 V ± 1.0%	S-1335B35-N4T1U3	S-1335B35-A4T2U3
3.6 V ± 1.0%	S-1335B36-N4T1U3	S-1335B36-A4T2U3

Remark Please contact our sales office for products with specifications other than the above.

4. 3 S-1335 Series C type

ON / OFF logic: Active "H"
Discharge shunt function: Unavailable
Pull-down resistor: Available
Soft-start time: 0.1 ms typ.

Table 5

Output Voltage	SC-82AB	HSNT-4 (1010)
1.0 V ± 15 mV	S-1335C10-N4T1U3	S-1335C10-A4T2U3
1.1 V ± 15 mV	S-1335C11-N4T1U3	S-1335C11-A4T2U3
1.2 V ± 15 mV	S-1335C12-N4T1U3	S-1335C12-A4T2U3
1.3 V ± 15 mV	S-1335C13-N4T1U3	S-1335C13-A4T2U3
1.4 V ± 15 mV	S-1335C14-N4T1U3	S-1335C14-A4T2U3
1.5 V ± 1.0%	S-1335C15-N4T1U3	S-1335C15-A4T2U3
1.6 V ± 1.0%	S-1335C16-N4T1U3	S-1335C16-A4T2U3
1.7 V ± 1.0%	S-1335C17-N4T1U3	S-1335C17-A4T2U3
1.8 V ± 1.0%	S-1335C18-N4T1U3	S-1335C18-A4T2U3
1.9 V ± 1.0%	S-1335C19-N4T1U3	S-1335C19-A4T2U3
2.0 V ± 1.0%	S-1335C20-N4T1U3	S-1335C20-A4T2U3
2.1 V ± 1.0%	S-1335C21-N4T1U3	S-1335C21-A4T2U3
2.2 V ± 1.0%	S-1335C22-N4T1U3	S-1335C22-A4T2U3
2.3 V ± 1.0%	S-1335C23-N4T1U3	S-1335C23-A4T2U3
2.4 V ± 1.0%	S-1335C24-N4T1U3	S-1335C24-A4T2U3
2.5 V ± 1.0%	S-1335C25-N4T1U3	S-1335C25-A4T2U3
2.6 V ± 1.0%	S-1335C26-N4T1U3	S-1335C26-A4T2U3
2.7 V ± 1.0%	S-1335C27-N4T1U3	S-1335C27-A4T2U3
2.8 V ± 1.0%	S-1335C28-N4T1U3	S-1335C28-A4T2U3
2.85 V ± 1.0%	S-1335C2J-N4T1U3	S-1335C2J-A4T2U3
2.9 V ± 1.0%	S-1335C29-N4T1U3	S-1335C29-A4T2U3
3.0 V ± 1.0%	S-1335C30-N4T1U3	S-1335C30-A4T2U3
3.1 V ± 1.0%	S-1335C31-N4T1U3	S-1335C31-A4T2U3
3.2 V ± 1.0%	S-1335C32-N4T1U3	S-1335C32-A4T2U3
3.3 V ± 1.0%	S-1335C33-N4T1U3	S-1335C33-A4T2U3
3.4 V ± 1.0%	S-1335C34-N4T1U3	S-1335C34-A4T2U3
3.5 V ± 1.0%	S-1335C35-N4T1U3	S-1335C35-A4T2U3
3.6 V ± 1.0%	S-1335C36-N4T1U3	S-1335C36-A4T2U3

Remark Please contact our sales office for products with specifications other than the above.

4. 4 S-1335 Series D type

ON / OFF logic: Active "H"
Discharge shunt function: Unavailable
Pull-down resistor: Unavailable
Soft-start time: 0.1 ms typ.

Table 6

Output Voltage	SC-82AB	HSNT-4 (1010)
1.0 V ± 15 mV	S-1335D10-N4T1U3	S-1335D10-A4T2U3
1.1 V ± 15 mV	S-1335D11-N4T1U3	S-1335D11-A4T2U3
1.2 V ± 15 mV	S-1335D12-N4T1U3	S-1335D12-A4T2U3
1.3 V ± 15 mV	S-1335D13-N4T1U3	S-1335D13-A4T2U3
1.4 V ± 15 mV	S-1335D14-N4T1U3	S-1335D14-A4T2U3
1.5 V ± 1.0%	S-1335D15-N4T1U3	S-1335D15-A4T2U3
1.6 V ± 1.0%	S-1335D16-N4T1U3	S-1335D16-A4T2U3
1.7 V ± 1.0%	S-1335D17-N4T1U3	S-1335D17-A4T2U3
1.8 V ± 1.0%	S-1335D18-N4T1U3	S-1335D18-A4T2U3
1.9 V ± 1.0%	S-1335D19-N4T1U3	S-1335D19-A4T2U3
2.0 V ± 1.0%	S-1335D20-N4T1U3	S-1335D20-A4T2U3
2.1 V ± 1.0%	S-1335D21-N4T1U3	S-1335D21-A4T2U3
2.2 V ± 1.0%	S-1335D22-N4T1U3	S-1335D22-A4T2U3
2.3 V ± 1.0%	S-1335D23-N4T1U3	S-1335D23-A4T2U3
2.4 V ± 1.0%	S-1335D24-N4T1U3	S-1335D24-A4T2U3
2.5 V ± 1.0%	S-1335D25-N4T1U3	S-1335D25-A4T2U3
2.6 V ± 1.0%	S-1335D26-N4T1U3	S-1335D26-A4T2U3
2.7 V ± 1.0%	S-1335D27-N4T1U3	S-1335D27-A4T2U3
2.8 V ± 1.0%	S-1335D28-N4T1U3	S-1335D28-A4T2U3
2.85 V ± 1.0%	S-1335D2J-N4T1U3	S-1335D2J-A4T2U3
2.9 V ± 1.0%	S-1335D29-N4T1U3	S-1335D29-A4T2U3
3.0 V ± 1.0%	S-1335D30-N4T1U3	S-1335D30-A4T2U3
3.1 V ± 1.0%	S-1335D31-N4T1U3	S-1335D31-A4T2U3
3.2 V ± 1.0%	S-1335D32-N4T1U3	S-1335D32-A4T2U3
3.3 V ± 1.0%	S-1335D33-N4T1U3	S-1335D33-A4T2U3
3.4 V ± 1.0%	S-1335D34-N4T1U3	S-1335D34-A4T2U3
3.5 V ± 1.0%	S-1335D35-N4T1U3	S-1335D35-A4T2U3
3.6 V ± 1.0%	S-1335D36-N4T1U3	S-1335D36-A4T2U3

Remark Please contact our sales office for products with specifications other than the above.

4. 5 S-1335 Series E type

ON / OFF logic: Active "H"
Discharge shunt function: Available
Pull-down resistor: Available
Soft-start time: 1.0 ms typ.

Table 7

Output Voltage	HSNT-4 (1010)
1.0 V ± 15 mV	S-1335E10-A4T2U3
1.1 V ± 15 mV	S-1335E11-A4T2U3
1.2 V ± 15 mV	S-1335E12-A4T2U3
1.3 V ± 15 mV	S-1335E13-A4T2U3
1.4 V ± 15 mV	S-1335E14-A4T2U3
1.5 V ± 1.0%	S-1335E15-A4T2U3
1.6 V ± 1.0%	S-1335E16-A4T2U3
1.7 V ± 1.0%	S-1335E17-A4T2U3
1.8 V ± 1.0%	S-1335E18-A4T2U3
1.9 V ± 1.0%	S-1335E19-A4T2U3
2.0 V ± 1.0%	S-1335E20-A4T2U3
2.1 V ± 1.0%	S-1335E21-A4T2U3
2.2 V ± 1.0%	S-1335E22-A4T2U3
2.3 V ± 1.0%	S-1335E23-A4T2U3
2.4 V ± 1.0%	S-1335E24-A4T2U3
2.5 V ± 1.0%	S-1335E25-A4T2U3
2.6 V ± 1.0%	S-1335E26-A4T2U3
2.7 V ± 1.0%	S-1335E27-A4T2U3
2.8 V ± 1.0%	S-1335E28-A4T2U3
2.85 V ± 1.0%	S-1335E2J-A4T2U3
2.9 V ± 1.0%	S-1335E29-A4T2U3
3.0 V ± 1.0%	S-1335E30-A4T2U3
3.1 V ± 1.0%	S-1335E31-A4T2U3
3.2 V ± 1.0%	S-1335E32-A4T2U3
3.3 V ± 1.0%	S-1335E33-A4T2U3
3.4 V ± 1.0%	S-1335E34-A4T2U3
3.5 V ± 1.0%	S-1335E35-A4T2U3
3.6 V ± 1.0%	S-1335E36-A4T2U3

Remark Please contact our sales office for products with specifications other than the above.

4. 6 S-1335 Series F type

ON / OFF logic: Active "H"
Discharge shunt function: Available
Pull-down resistor: Unavailable
Soft-start time: 1.0 ms typ.

Table 8

Output Voltage	HSNT-4 (1010)
1.0 V ± 15 mV	S-1335F10-A4T2U3
1.1 V ± 15 mV	S-1335F11-A4T2U3
1.2 V ± 15 mV	S-1335F12-A4T2U3
1.3 V ± 15 mV	S-1335F13-A4T2U3
1.4 V ± 15 mV	S-1335F14-A4T2U3
1.5 V ± 1.0%	S-1335F15-A4T2U3
1.6 V ± 1.0%	S-1335F16-A4T2U3
1.7 V ± 1.0%	S-1335F17-A4T2U3
1.8 V ± 1.0%	S-1335F18-A4T2U3
1.9 V ± 1.0%	S-1335F19-A4T2U3
2.0 V ± 1.0%	S-1335F20-A4T2U3
2.1 V ± 1.0%	S-1335F21-A4T2U3
2.2 V ± 1.0%	S-1335F22-A4T2U3
2.3 V ± 1.0%	S-1335F23-A4T2U3
2.4 V ± 1.0%	S-1335F24-A4T2U3
2.5 V ± 1.0%	S-1335F25-A4T2U3
2.6 V ± 1.0%	S-1335F26-A4T2U3
2.7 V ± 1.0%	S-1335F27-A4T2U3
2.8 V ± 1.0%	S-1335F28-A4T2U3
2.85 V ± 1.0%	S-1335F2J-A4T2U3
2.9 V ± 1.0%	S-1335F29-A4T2U3
3.0 V ± 1.0%	S-1335F30-A4T2U3
3.1 V ± 1.0%	S-1335F31-A4T2U3
3.2 V ± 1.0%	S-1335F32-A4T2U3
3.3 V ± 1.0%	S-1335F33-A4T2U3
3.4 V ± 1.0%	S-1335F34-A4T2U3
3.5 V ± 1.0%	S-1335F35-A4T2U3
3.6 V ± 1.0%	S-1335F36-A4T2U3

Remark Please contact our sales office for products with specifications other than the above.

4. 7 S-1335 Series G type

ON / OFF logic: Active "H"
Discharge shunt function: Unavailable
Pull-down resistor: Available
Soft-start time: 1.0 ms typ.

Table 9

Output Voltage	HSNT-4 (1010)
1.0 V ± 15 mV	S-1335G10-A4T2U3
1.1 V ± 15 mV	S-1335G11-A4T2U3
1.2 V ± 15 mV	S-1335G12-A4T2U3
1.3 V ± 15 mV	S-1335G13-A4T2U3
1.4 V ± 15 mV	S-1335G14-A4T2U3
1.5 V ± 1.0%	S-1335G15-A4T2U3
1.6 V ± 1.0%	S-1335G16-A4T2U3
1.7 V ± 1.0%	S-1335G17-A4T2U3
1.8 V ± 1.0%	S-1335G18-A4T2U3
1.9 V ± 1.0%	S-1335G19-A4T2U3
2.0 V ± 1.0%	S-1335G20-A4T2U3
2.1 V ± 1.0%	S-1335G21-A4T2U3
2.2 V ± 1.0%	S-1335G22-A4T2U3
2.3 V ± 1.0%	S-1335G23-A4T2U3
2.4 V ± 1.0%	S-1335G24-A4T2U3
2.5 V ± 1.0%	S-1335G25-A4T2U3
2.6 V ± 1.0%	S-1335G26-A4T2U3
2.7 V ± 1.0%	S-1335G27-A4T2U3
2.8 V ± 1.0%	S-1335G28-A4T2U3
2.85 V ± 1.0%	S-1335G2J-A4T2U3
2.9 V ± 1.0%	S-1335G29-A4T2U3
3.0 V ± 1.0%	S-1335G30-A4T2U3
3.1 V ± 1.0%	S-1335G31-A4T2U3
3.2 V ± 1.0%	S-1335G32-A4T2U3
3.3 V ± 1.0%	S-1335G33-A4T2U3
3.4 V ± 1.0%	S-1335G34-A4T2U3
3.5 V ± 1.0%	S-1335G35-A4T2U3
3.6 V ± 1.0%	S-1335G36-A4T2U3

Remark Please contact our sales office for products with specifications other than the above.

4. 8 S-1335 Series H type

ON / OFF logic: Active "H"
Discharge shunt function: Unavailable
Pull-down resistor: Unavailable
Soft-start time: 1.0 ms typ.

Table 10

Output Voltage	HSNT-4 (1010)
1.0 V ± 15 mV	S-1335H10-A4T2U3
1.1 V ± 15 mV	S-1335H11-A4T2U3
1.2 V ± 15 mV	S-1335H12-A4T2U3
1.3 V ± 15 mV	S-1335H13-A4T2U3
1.4 V ± 15 mV	S-1335H14-A4T2U3
1.5 V ± 1.0%	S-1335H15-A4T2U3
1.6 V ± 1.0%	S-1335H16-A4T2U3
1.7 V ± 1.0%	S-1335H17-A4T2U3
1.8 V ± 1.0%	S-1335H18-A4T2U3
1.9 V ± 1.0%	S-1335H19-A4T2U3
2.0 V ± 1.0%	S-1335H20-A4T2U3
2.1 V ± 1.0%	S-1335H21-A4T2U3
2.2 V ± 1.0%	S-1335H22-A4T2U3
2.3 V ± 1.0%	S-1335H23-A4T2U3
2.4 V ± 1.0%	S-1335H24-A4T2U3
2.5 V ± 1.0%	S-1335H25-A4T2U3
2.6 V ± 1.0%	S-1335H26-A4T2U3
2.7 V ± 1.0%	S-1335H27-A4T2U3
2.8 V ± 1.0%	S-1335H28-A4T2U3
2.85 V ± 1.0%	S-1335H2J-A4T2U3
2.9 V ± 1.0%	S-1335H29-A4T2U3
3.0 V ± 1.0%	S-1335H30-A4T2U3
3.1 V ± 1.0%	S-1335H31-A4T2U3
3.2 V ± 1.0%	S-1335H32-A4T2U3
3.3 V ± 1.0%	S-1335H33-A4T2U3
3.4 V ± 1.0%	S-1335H34-A4T2U3
3.5 V ± 1.0%	S-1335H35-A4T2U3
3.6 V ± 1.0%	S-1335H36-A4T2U3

Remark Please contact our sales office for products with specifications other than the above.

4. 9 S-1335 Series J type

ON / OFF logic: Active "H"
Discharge shunt function: Available
Pull-down resistor: Available
Soft-start time: 0.1 ms typ. / 1.0 ms typ. (Switchable)

Table 11

Output Voltage	SOT-23-5
1.0 V ± 15 mV	S-1335J10-M5T1U3
1.1 V ± 15 mV	S-1335J11-M5T1U3
1.2 V ± 15 mV	S-1335J12-M5T1U3
1.3 V ± 15 mV	S-1335J13-M5T1U3
1.4 V ± 15 mV	S-1335J14-M5T1U3
1.5 V ± 1.0%	S-1335J15-M5T1U3
1.6 V ± 1.0%	S-1335J16-M5T1U3
1.7 V ± 1.0%	S-1335J17-M5T1U3
1.8 V ± 1.0%	S-1335J18-M5T1U3
1.9 V ± 1.0%	S-1335J19-M5T1U3
2.0 V ± 1.0%	S-1335J20-M5T1U3
2.1 V ± 1.0%	S-1335J21-M5T1U3
2.2 V ± 1.0%	S-1335J22-M5T1U3
2.3 V ± 1.0%	S-1335J23-M5T1U3
2.4 V ± 1.0%	S-1335J24-M5T1U3
2.5 V ± 1.0%	S-1335J25-M5T1U3
2.6 V ± 1.0%	S-1335J26-M5T1U3
2.7 V ± 1.0%	S-1335J27-M5T1U3
2.8 V ± 1.0%	S-1335J28-M5T1U3
2.85 V ± 1.0%	S-1335J2J-M5T1U3
2.9 V ± 1.0%	S-1335J29-M5T1U3
3.0 V ± 1.0%	S-1335J30-M5T1U3
3.1 V ± 1.0%	S-1335J31-M5T1U3
3.2 V ± 1.0%	S-1335J32-M5T1U3
3.3 V ± 1.0%	S-1335J33-M5T1U3
3.4 V ± 1.0%	S-1335J34-M5T1U3
3.5 V ± 1.0%	S-1335J35-M5T1U3
3.6 V ± 1.0%	S-1335J36-M5T1U3

Remark Please contact our sales office for products with specifications other than the above.

4. 10 S-1335 Series K type

ON / OFF logic: Active "H"
Discharge shunt function: Available
Pull-down resistor: Unavailable
Soft-start time: 0.1 ms typ. / 1.0 ms typ. (Switchable)

Table 12

Output Voltage	SOT-23-5
1.0 V ± 15 mV	S-1335K10-M5T1U3
1.1 V ± 15 mV	S-1335K11-M5T1U3
1.2 V ± 15 mV	S-1335K12-M5T1U3
1.3 V ± 15 mV	S-1335K13-M5T1U3
1.4 V ± 15 mV	S-1335K14-M5T1U3
1.5 V ± 1.0%	S-1335K15-M5T1U3
1.6 V ± 1.0%	S-1335K16-M5T1U3
1.7 V ± 1.0%	S-1335K17-M5T1U3
1.8 V ± 1.0%	S-1335K18-M5T1U3
1.9 V ± 1.0%	S-1335K19-M5T1U3
2.0 V ± 1.0%	S-1335K20-M5T1U3
2.1 V ± 1.0%	S-1335K21-M5T1U3
2.2 V ± 1.0%	S-1335K22-M5T1U3
2.3 V ± 1.0%	S-1335K23-M5T1U3
2.4 V ± 1.0%	S-1335K24-M5T1U3
2.5 V ± 1.0%	S-1335K25-M5T1U3
2.6 V ± 1.0%	S-1335K26-M5T1U3
2.7 V ± 1.0%	S-1335K27-M5T1U3
2.8 V ± 1.0%	S-1335K28-M5T1U3
2.85 V ± 1.0%	S-1335K2J-M5T1U3
2.9 V ± 1.0%	S-1335K29-M5T1U3
3.0 V ± 1.0%	S-1335K30-M5T1U3
3.1 V ± 1.0%	S-1335K31-M5T1U3
3.2 V ± 1.0%	S-1335K32-M5T1U3
3.3 V ± 1.0%	S-1335K33-M5T1U3
3.4 V ± 1.0%	S-1335K34-M5T1U3
3.5 V ± 1.0%	S-1335K35-M5T1U3
3.6 V ± 1.0%	S-1335K36-M5T1U3

Remark Please contact our sales office for products with specifications other than the above.

4. 11 S-1335 Series L type

ON / OFF logic: Active "H"
Discharge shunt function: Unavailable
Pull-down resistor: Available
Soft-start time: 0.1 ms typ. / 1.0 ms typ. (Switchable)

Table 13

Output Voltage	SOT-23-5
1.0 V ± 15 mV	S-1335L10-M5T1U3
1.1 V ± 15 mV	S-1335L11-M5T1U3
1.2 V ± 15 mV	S-1335L12-M5T1U3
1.3 V ± 15 mV	S-1335L13-M5T1U3
1.4 V ± 15 mV	S-1335L14-M5T1U3
1.5 V ± 1.0%	S-1335L15-M5T1U3
1.6 V ± 1.0%	S-1335L16-M5T1U3
1.7 V ± 1.0%	S-1335L17-M5T1U3
1.8 V ± 1.0%	S-1335L18-M5T1U3
1.9 V ± 1.0%	S-1335L19-M5T1U3
2.0 V ± 1.0%	S-1335L20-M5T1U3
2.1 V ± 1.0%	S-1335L21-M5T1U3
2.2 V ± 1.0%	S-1335L22-M5T1U3
2.3 V ± 1.0%	S-1335L23-M5T1U3
2.4 V ± 1.0%	S-1335L24-M5T1U3
2.5 V ± 1.0%	S-1335L25-M5T1U3
2.6 V ± 1.0%	S-1335L26-M5T1U3
2.7 V ± 1.0%	S-1335L27-M5T1U3
2.8 V ± 1.0%	S-1335L28-M5T1U3
2.85 V ± 1.0%	S-1335L2J-M5T1U3
2.9 V ± 1.0%	S-1335L29-M5T1U3
3.0 V ± 1.0%	S-1335L30-M5T1U3
3.1 V ± 1.0%	S-1335L31-M5T1U3
3.2 V ± 1.0%	S-1335L32-M5T1U3
3.3 V ± 1.0%	S-1335L33-M5T1U3
3.4 V ± 1.0%	S-1335L34-M5T1U3
3.5 V ± 1.0%	S-1335L35-M5T1U3
3.6 V ± 1.0%	S-1335L36-M5T1U3

Remark Please contact our sales office for products with specifications other than the above.

4. 12 S-1335 Series M type

ON / OFF logic: Active "H"
Discharge shunt function: Unavailable
Pull-down resistor: Unavailable
Soft-start time: 0.1 ms typ. / 1.0 ms typ. (Switchable)

Table 14

Output Voltage	SOT-23-5
1.0 V ± 15 mV	S-1335M10-M5T1U3
1.1 V ± 15 mV	S-1335M11-M5T1U3
1.2 V ± 15 mV	S-1335M12-M5T1U3
1.3 V ± 15 mV	S-1335M13-M5T1U3
1.4 V ± 15 mV	S-1335M14-M5T1U3
1.5 V ± 1.0%	S-1335M15-M5T1U3
1.6 V ± 1.0%	S-1335M16-M5T1U3
1.7 V ± 1.0%	S-1335M17-M5T1U3
1.8 V ± 1.0%	S-1335M18-M5T1U3
1.9 V ± 1.0%	S-1335M19-M5T1U3
2.0 V ± 1.0%	S-1335M20-M5T1U3
2.1 V ± 1.0%	S-1335M21-M5T1U3
2.2 V ± 1.0%	S-1335M22-M5T1U3
2.3 V ± 1.0%	S-1335M23-M5T1U3
2.4 V ± 1.0%	S-1335M24-M5T1U3
2.5 V ± 1.0%	S-1335M25-M5T1U3
2.6 V ± 1.0%	S-1335M26-M5T1U3
2.7 V ± 1.0%	S-1335M27-M5T1U3
2.8 V ± 1.0%	S-1335M28-M5T1U3
2.85 V ± 1.0%	S-1335M2J-M5T1U3
2.9 V ± 1.0%	S-1335M29-M5T1U3
3.0 V ± 1.0%	S-1335M30-M5T1U3
3.1 V ± 1.0%	S-1335M31-M5T1U3
3.2 V ± 1.0%	S-1335M32-M5T1U3
3.3 V ± 1.0%	S-1335M33-M5T1U3
3.4 V ± 1.0%	S-1335M34-M5T1U3
3.5 V ± 1.0%	S-1335M35-M5T1U3
3.6 V ± 1.0%	S-1335M36-M5T1U3

Remark Please contact our sales office for products with specifications other than the above.

■ Pin Configurations

1. SOT-23-5

Top view

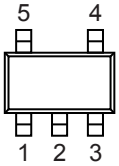


Figure 9

Table 15

Pin No.	Symbol	Description
1	VIN	Input voltage pin
2	VSS	GND pin
3	ON / OFF	ON / OFF pin
4	SST	Switching pin for soft-start time "H": t_{SS0} = 0.1 ms typ. "L": t_{SS1} = 1.0 ms typ.
5	VOUT	Output voltage pin

Remark The soft-start time can be switched to t_{SS0} = 0.1 ms typ. / t_{SS1} = 1.0 ms typ. with the SST pin.
Refer to "**2. Function list of product type**" in "**■ Product Name Structure**" for details.

2. SC-82AB

Top view

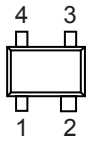


Figure 10

Table 16

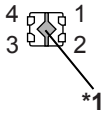
Pin No.	Symbol	Description
1	ON / OFF	ON / OFF pin
2	VSS	GND pin
3	VOUT	Output voltage pin
4	VIN	Input voltage pin

Remark The soft-start time is fixed to t_{SS0} = 0.1 ms typ.
Refer to "**2. Function list of product type**" in "**■ Product Name Structure**" for details.

3. HSNT-4 (1010)

Top view

Bottom view



***1.** Connect the heat sink of backside at shadowed area to the board, and set electric potential open or GND.
However, do not use it as the function of electrode.

Figure 11

Table 17

Pin No.	Symbol	Description
1	VOUT	Output voltage pin
2	VSS	GND pin
3	ON / OFF	ON / OFF pin
4	VIN	Input voltage pin

Remark The soft-start time is fixed to either t_{SS0} = 0.1 ms typ. or t_{SS1} = 1.0 ms typ.
Refer to "**2. Function list of product type**" in "**■ Product Name Structure**" for details.

■ Absolute Maximum Ratings

Table 18

(Ta = +25°C unless otherwise specified)

Item		Symbol	Absolute Maximum Rating	Unit
Input voltage		V_{IN}	V_{SS} – 0.3 to V_{SS} + 6.0	V
		$V_{ON / OFF}$	V_{SS} – 0.3 to V_{SS} + 6.0	V
		V_{SST}	V_{SS} – 0.3 to V_{SS} + 6.0	V
Output voltage		V_{OUT}	V_{SS} – 0.3 to V_{IN} + 0.3	V
Output current		I_{OUT}	200	mA
Power dissipation	SOT-23-5	P_D	600*1	mW
	SC-82AB		400*1	mW
	HSNT-4 (1010)		340*1	mW
Operation ambient temperature		T_{opr}	–40 to +85	°C
Storage temperature		T_{stg}	–40 to +125	°C

***1.** When mounted on board
[Mounted board]
(1) Board size: 114.3 mm × 76.2 mm × t1.6 mm
(2) Name: JEDEC STANDARD51-7

Caution The absolute maximum ratings are rated values exceeding which the product could suffer physical damage. These values must therefore not be exceeded under any conditions.

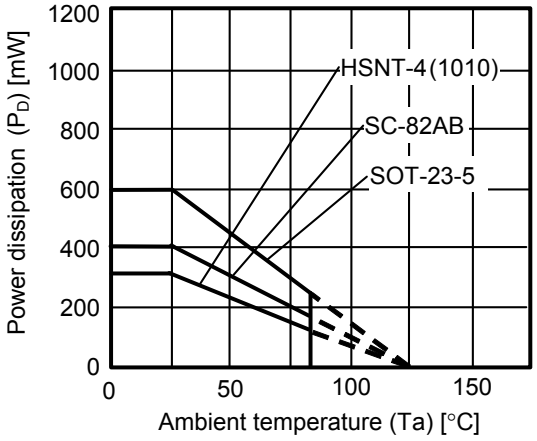


Figure 12 Power Dissipation of Package (When Mounted on Board)

Power Dissipation of HSNT-4 (1010) (Reference)

Power dissipation of package differs depending on the mounting conditions.
Consider the power dissipation characteristics under the following conditions as reference.

[Mounted board]

(1) Board size: 40 mm × 40 mm × t0.8 mm
(2) Board material: Glass epoxy resin (four layers)
(3) Wiring ratio: 50%
(4) Test conditions: When mounted on board (wind speed: 0 m/s)
(5) Land pattern: Refer to the recommended land pattern (drawing code: PL004-A-L-SD)

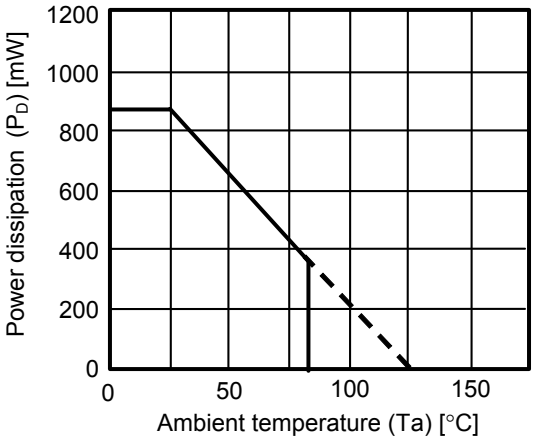


Figure 13 Power Dissipation of Package (When Mounted on Board)

Table 19

Condition	Power Dissipation (Reference)	Thermal Resistance Value (θj−a)
HSNT-4 (1010) (When mounted on board)	870 mW	115°C/W

■ Electrical Characteristics

1. S-1335 Series A / B / C / D / E / F / G / H type

Table 20

(Ta = +25°C unless otherwise specified)

Item	Symbol	Condition		Min.	Typ.	Max.	Unit	Test Circuit
Output voltage*1	$V_{OUT(E)}$	$V_{IN} = V_{OUT(S)} + 1.0$ V, I_{OUT} = 30 mA	1.0 V ≤ $V_{OUT(S)}$ < 1.5 V	$V_{OUT(S)} \times 0.985$	$V_{OUT(S)}$	$V_{OUT(S)} \times 1.015$	V	1
			1.5 V ≤ $V_{OUT(S)}$ ≤ 3.6 V	$V_{OUT(S)} \times 0.99$	$V_{OUT(S)}$	$V_{OUT(S)} \times 1.01$	V	1
Output current*2	I_{OUT}	$V_{IN} \geq V_{OUT(S)} + 1.0$ V		150*5	–	–	mA	3
Dropout voltage*3	V_{drop}	I_{OUT} = 100 mA	1.0 V ≤ $V_{OUT(S)}$ < 1.1 V	0.130	0.250	0.350	V	1
			1.1 V ≤ $V_{OUT(S)}$ < 1.2 V	–	0.225	0.275	V	1
			1.2 V ≤ $V_{OUT(S)}$ < 1.3 V	–	0.194	0.224	V	1
			1.3 V ≤ $V_{OUT(S)}$ < 1.4 V	–	0.160	0.187	V	1
			1.4 V ≤ $V_{OUT(S)}$ < 1.5 V	–	0.124	0.167	V	1
			1.5 V ≤ $V_{OUT(S)}$ < 1.7 V	–	0.104	0.157	V	1
			1.7 V ≤ $V_{OUT(S)}$ < 2.0 V	–	0.094	0.140	V	1
			2.0 V ≤ $V_{OUT(S)}$ < 2.5 V	–	0.084	0.127	V	1
			2.5 V ≤ $V_{OUT(S)}$ < 2.8 V	–	0.077	0.117	V	1
			2.8 V ≤ $V_{OUT(S)}$ ≤ 3.6 V	–	0.070	0.103	V	1
Line regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \bullet V_{OUT}}$	$V_{OUT(S)} + 0.5$ V ≤ V_{IN} ≤ 5.5 V, I_{OUT} = 30 mA		–	0.05	0.2	%/V	1
Load regulation	ΔV_{OUT2}	$V_{IN} = V_{OUT(S)} + 1.0$ V, 1 mA ≤ I_{OUT} ≤ 150 mA		–	15	40	mV	1
Output voltage temperature coefficient*4	$\frac{\Delta V_{OUT}}{\Delta Ta \bullet V_{OUT}}$	$V_{IN} = V_{OUT(S)} + 1.0$ V, I_{OUT} = 30 mA, −40°C ≤ Ta ≤ +85°C		–	±100	–	ppm/°C	1
Current consumption during operation	I_{SS1}	$V_{IN} = V_{OUT(S)} + 1.0$ V, ON / OFF pin = ON, no load		–	36	54	μA	2
Current consumption during power-off	I_{SS2}	$V_{IN} = V_{OUT(S)} + 1.0$ V, ON / OFF pin = OFF, no load		–	0.1	1.0	μA	2
Input voltage	V_{IN}	–		1.5	–	5.5	V	–
ON / OFF pin input voltage "H"	V_{SH}	$V_{IN} = V_{OUT(S)} + 1.0$ V, R_L = 1.0 kΩ determined by V_{OUT} output level		1.0	–	–	V	4
ON / OFF pin input voltage "L"	V_{SL}	$V_{IN} = V_{OUT(S)} + 1.0$ V, R_L = 1.0 kΩ determined by V_{OUT} output level		–	–	0.3	V	4
ON / OFF pin input current "H"	I_{SH}	V_{IN} = 5.5 V, $V_{ON / OFF}$ = 5.5 V	B / D / F / H type (without pull-down resistor)	−0.1	–	0.1	μA	4
			A / C / E / G type (with pull-down resistor)	1.0	2.5	5.0	μA	4
ON / OFF pin input current "L"	I_{SL}	V_{IN} = 5.5 V, $V_{ON / OFF}$ = 0 V		−0.1	–	0.1	μA	4
Ripple rejection	| RR |	$V_{IN} = V_{OUT(S)} + 1.0$ V, f = 10 kHz, ΔV_{rip} = 0.5 Vrms, I_{OUT} = 30 mA	1.0 V ≤ $V_{OUT(S)}$ ≤ 2.5 V	–	70	–	dB	5
			2.5 V < $V_{OUT(S)}$ ≤ 3.6 V	–	65	–	dB	5
		$V_{IN} = V_{OUT(S)} + 1.0$ V, f = 1.0 kHz, ΔV_{rip} = 0.5 Vrms, I_{OUT} = 30 mA	1.0 V ≤ $V_{OUT(S)}$ ≤ 3.6 V	–	80	–	dB	5
Short-circuit current	I_{short}	$V_{IN} = V_{OUT(S)} + 1.0$ V, ON / OFF pin = ON, V_{OUT} = 0 V		–	50	–	mA	3
Soft-start time*6	t_{SS0}	$V_{IN} = V_{OUT(S)} + 1.0$ V, I_{OUT} = 100 mA, C_L = 1.0 μF, t_r = 1.0 μs	A / B / C / D type (0.1 ms typ.)	0.08	0.1	0.13	ms	1
	t_{SS1}		E / F / G / H type (1.0 ms typ.)	0.8	1.0	1.2	ms	1
"L" output Nch ON resistance	R_{LOW}	V_{IN} = 5.5 V, V_{OUT} = 0.1 V	A / B / E / F type (with discharge shunt function)	–	35	–	Ω	3
Power-off pull-down resistance	R_{PD}	–	A / C / E / G type (with pull-down resistor)	1.1	2.2	5.5	MΩ	4

***1.** $V_{OUT(S)}$: Set output voltage
$V_{OUT(E)}$: Actual output voltage
Output voltage when fixing I_{OUT} (= 30 mA) and inputting $V_{OUT(S)}$ + 1.0 V

***2.** The output current at which the output voltage becomes 95% of $V_{OUT(E)}$ after gradually increasing the output current.

***3.** $V_{drop} = V_{IN1} - (V_{OUT3} \times 0.98)$
V_{OUT3} is the output voltage when $V_{IN} = V_{OUT(S)} + 1.0$ V and I_{OUT} = 100 mA.
V_{IN1} is the input voltage at which the output voltage becomes 98% of V_{OUT3} after gradually decreasing the input voltage.

***4.** A change in temperature of the output voltage [mV/°C] is calculated using the following equation.

$$\frac{\Delta V_{OUT}}{\Delta Ta}\ [mV/°C]^{*1} = V_{OUT(S)}\ [V]^{*2} \times \frac{\Delta V_{OUT}}{\Delta Ta \bullet V_{OUT}}\ [ppm/°C]^{*3} \div 1000$$

***1.** Change in temperature of output voltage
***2.** Set output voltage
***3.** Output voltage temperature coefficient

***5.** The output current can be at least this value.
Due to restrictions on the package power dissipation, this value may not be satisfied. Attention should be paid to the power dissipation of the package when the output current is large.
This specification is guaranteed by design.

***6.** Soft-start time shows the time period from when the input voltage reaches 50% until the output voltage rises to 99%, immediately after power-on or when the ON / OFF pin is set to ON (t_r = 1.0 µs). Refer to "**8. Soft-start function**" in "**■ Operation**" for details.

2. S-1335 Series J / K / L / M type

Table 21

(Ta = +25°C unless otherwise specified)

Item	Symbol	Condition		Min.	Typ.	Max.	Unit	Test Circuit
Output voltage*1	$V_{OUT(E)}$	$V_{IN} = V_{OUT(S)} + 1.0$ V, I_{OUT} = 30 mA	1.0 V ≤ $V_{OUT(S)}$ < 1.5 V	$V_{OUT(S)} - 0.015$	$V_{OUT(S)}$	$V_{OUT(S)} + 0.015$	V	6
			1.5 V ≤ $V_{OUT(S)}$ ≤ 3.6 V	$V_{OUT(S)} \times 0.99$	$V_{OUT(S)}$	$V_{OUT(S)} \times 1.01$	V	6
Output current*2	I_{OUT}	$V_{IN} \geq V_{OUT(S)} + 1.0$ V		150*5	–	–	mA	8
Dropout voltage*3	V_{drop}	I_{OUT} = 100 mA	1.0 V ≤ $V_{OUT(S)}$ < 1.1 V	0.130	0.250	0.350	V	6
			1.1 V ≤ $V_{OUT(S)}$ < 1.2 V	–	0.225	0.275	V	6
			1.2 V ≤ $V_{OUT(S)}$ < 1.3 V	–	0.194	0.224	V	6
			1.3 V ≤ $V_{OUT(S)}$ < 1.4 V	–	0.160	0.187	V	6
			1.4 V ≤ $V_{OUT(S)}$ < 1.5 V	–	0.124	0.167	V	6
			1.5 V ≤ $V_{OUT(S)}$ < 1.7 V	–	0.104	0.157	V	6
			1.7 V ≤ $V_{OUT(S)}$ < 2.0 V	–	0.094	0.140	V	6
			2.0 V ≤ $V_{OUT(S)}$ < 2.5 V	–	0.084	0.127	V	6
			2.5 V ≤ $V_{OUT(S)}$ < 2.8 V	–	0.077	0.117	V	6
			2.8 V ≤ $V_{OUT(S)}$ ≤ 3.6 V	–	0.070	0.103	V	6
Line regulation	$\frac{\Delta V_{OUT1}}{\Delta V_{IN} \bullet V_{OUT}}$	$V_{OUT(S)} + 0.5$ V ≤ V_{IN} ≤ 5.5 V, I_{OUT} = 30 mA		–	0.05	0.2	%/V	6
Load regulation	ΔV_{OUT2}	$V_{IN} = V_{OUT(S)} + 1.0$ V, 1 mA ≤ I_{OUT} ≤ 150 mA		–	15	40	mV	6
Output voltage temperature coefficient*4	$\frac{\Delta V_{OUT}}{\Delta Ta \bullet V_{OUT}}$	$V_{IN} = V_{OUT(S)} + 1.0$ V, I_{OUT} = 30 mA, −40°C ≤ Ta ≤ +85°C		–	±100	–	ppm/°C	6
Current consumption during operation	I_{SS1}	$V_{IN} = V_{OUT(S)} + 1.0$ V, ON / OFF pin = ON, no load		–	36	54	μA	7
Current consumption during power-off	I_{SS2}	$V_{IN} = V_{OUT(S)} + 1.0$ V, ON / OFF pin = OFF, no load		–	0.1	1.0	μA	7
Input voltage	V_{IN}	–		1.5	–	5.5	V	–
ON / OFF pin input voltage "H"	V_{SH}	$V_{IN} = V_{OUT(S)} + 1.0$ V, R_L = 1.0 kΩ determined by V_{OUT} output level		1.0	–	–	V	9
ON / OFF pin input voltage "L"	V_{SL}	$V_{IN} = V_{OUT(S)} + 1.0$ V, R_L = 1.0 kΩ determined by V_{OUT} output level		–	–	0.3	V	9
ON / OFF pin input current "H"	I_{SH}	V_{IN} = 5.5 V, $V_{ON / OFF}$ = 5.5 V	K / M type (without pull-down resistor)	−0.1	–	0.1	μA	9
			J / L type (with pull-down resistor)	1.0	2.5	5.0	μA	9
ON / OFF pin input current "L"	I_{SL}	V_{IN} = 5.5 V, $V_{ON / OFF}$ = 0 V		−0.1	–	0.1	μA	9
Ripple rejection	| RR |	$V_{IN} = V_{OUT(S)} + 1.0$ V, f = 10 kHz, ΔV_{rip} = 0.5 Vrms, I_{OUT} = 30 mA	1.0 V ≤ $V_{OUT(S)}$ ≤ 2.5 V	–	70	–	dB	10
			2.5 V < $V_{OUT(S)}$ ≤ 3.6 V	–	65	–	dB	10
		$V_{IN} = V_{OUT(S)} + 1.0$ V, f = 1.0 kHz, ΔV_{rip} = 0.5 Vrms, I_{OUT} = 30 mA	1.0 V ≤ $V_{OUT(S)}$ ≤ 3.6 V	–	80	–	dB	10
Short-circuit current	I_{short}	$V_{IN} = V_{OUT(S)} + 1.0$ V, ON / OFF pin = ON, V_{OUT} = 0 V		–	50	–	mA	8
Soft-start time*6	t_{SS0}	$V_{IN} = V_{OUT(S)} + 1.0$ V, I_{OUT} = 100 mA, C_L = 1.0 μF, t_r = 1.0 μs	V_{SST} = "H"	0.08	0.1	0.13	ms	6
	t_{SS1}		V_{SST} = "L"	0.8	1.0	1.2	ms	6
"L" output Nch ON resistance	R_{LOW}	V_{IN} = 5.5 V, V_{OUT} = 0.1 V	J / K type (with discharge shunt function)	–	35	–	Ω	8
Power-off pull-down resistance	R_{PD}	–	J / L type (with pull-down resistor)	1.1	2.2	5.5	MΩ	9
SST pin input voltage "H"	V_{SH2}	$V_{IN} = V_{ON / OFF} = V_{OUT(S)} + 1.0$ V, R_L = 1.0 kΩ, determined by V_{OUT} output level		1.0	–	–	V	9
SST pin input voltage "L"	V_{SL2}	$V_{IN} = V_{ON / OFF} = V_{OUT(S)} + 1.0$ V, R_L = 1.0 kΩ, determined by V_{OUT} output level		–	–	0.3	V	9
SST pin input current "H"	I_{SH2}	V_{IN} = 5.5 V, V_{SST} = 5.5 V		−0.1	–	0.1	μA	9
SST pin input current "L"	I_{SL2}	V_{IN} = 5.5 V, V_{SST} = 0 V		1.0	2.5	5.0	μA	9
SST pin pull-up resistance	R_{PU}	–		1.1	2.2	5.5	MΩ	9

***1.** $V_{OUT(S)}$: Set output voltage
$V_{OUT(E)}$: Actual output voltage
Output voltage when fixing I_{OUT} (= 30 mA) and inputting $V_{OUT(S)}$ + 1.0 V

***2.** The output current at which the output voltage becomes 95% of $V_{OUT(E)}$ after gradually increasing the output current.

***3.** $V_{drop} = V_{IN1} - (V_{OUT3} \times 0.98)$
V_{OUT3} is the output voltage when $V_{IN} = V_{OUT(S)} + 1.0$ V and I_{OUT} = 100 mA.
V_{IN1} is the input voltage at which the output voltage becomes 98% of V_{OUT3} after gradually decreasing the input voltage.

***4.** A change in temperature of the output voltage [mV/°C] is calculated using the following equation.

$$\frac{\Delta V_{OUT}}{\Delta Ta}\ [mV/°C]^{*1} = V_{OUT(S)}\ [V]^{*2} \times \frac{\Delta V_{OUT}}{\Delta Ta \bullet V_{OUT}}\ [ppm/°C]^{*3} \div 1000$$

***1.** Change in temperature of output voltage
***2.** Set output voltage
***3.** Output voltage temperature coefficient

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