

## SI-8000W Series Surface-Mount, Separate Excitation Step-down Switching Mode

### ■ Features

- Surface-mount package (SOP8)
- Output current: 0.6A
- High efficiency: 75 to 80%
- Requires only 4 discrete components
- Internally-adjusted phase correction and output voltage adjustment performed internally
- Built-in reference oscillator (60kHz)
- Built-in overcurrent and thermal protection circuits

### ■ Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
DC Input Voltage	$V_{IN}$	35	V
Power Dissipation	$P_D$	1	W
Junction Temperature	$T_j$	-30 to +125	°C
Storage Temperature	$T_{stg}$	-40 to +125	°C
Thermal Resistance (Junction to 7-Pin Lead)	$\theta_{j-L}$	22	°C/W
Thermal Resistance (Junction to Ambient Air) <sup>*1</sup>	$\theta_{j-a}$	100	°C/W

\*1: Glass-epoxy board of 40 × 40mm (copper laminate area 4.3%)

### ■ Applications

- Power supplies for telecommunication equipment
- Onboard local power supplies

### ■ Recommended Operating Conditions

Parameter	Symbol	Ratings		Unit
		SI-8033W	SI-8050W	
DC Input Voltage Range	$V_{IN}$	5.3 to 28	7 to 33	V
Output Current Range	$I_O$	0 to 0.6		A
Operating Junction Temperature Range	$T_{jop}$	-30 to +125		°C

### ■ Electrical Characteristics

( $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Ratings						Unit
		SI-8033W			SI-8050W			
		min.	typ.	max.	min.	typ.	max.	
Output Voltage	$V_O$	3.17	3.30	3.43	4.80	5.00	5.20	V
	Conditions	$V_{IN}=15\text{V}, I_O=0.3\text{A}$			$V_{IN}=20\text{V}, I_O=0.3\text{A}$			
Efficiency	$\eta$	75			80			%
	Conditions	$V_{IN}=15\text{V}, I_O=0.3\text{A}$			$V_{IN}=20\text{V}, I_O=0.3\text{A}$			
Oscillation Frequency	$f$	60			60			kHz
	Conditions	$V_{IN}=15\text{V}, I_O=0.3\text{A}$			$V_{IN}=20\text{V}, I_O=0.3\text{A}$			
Line Regulation	$\Delta V_{OLINE}$	60			80			mV
	Conditions	$V_{IN}=8 \text{ to } 28\text{V}, I_O=0.3\text{A}$			$V_{IN}=10 \text{ to } 30\text{V}, I_O=0.3\text{A}$			
Load Regulation	$\Delta V_{OLOAD}$	20			30			mV
	Conditions	$V_{IN}=15\text{V}, I_O=0.1 \text{ to } 0.4\text{A}$			$V_{IN}=20\text{V}, I_O=0.1 \text{ to } 0.4\text{A}$			
Temperature Coefficient of Output Voltage	$\Delta V_O/\Delta T_a$	$\pm 0.5$			$\pm 0.5$			mV/°C
Ripple Rejection	$R_{REJ}$	45			45			dB
	Conditions	$f=100 \text{ to } 120\text{Hz}$			$f=100 \text{ to } 120\text{Hz}$			
Overcurrent Protection Starting Current	$I_{S1}$	0.61			0.61			A
	Conditions	$V_{IN}=15\text{V}$			$V_{IN}=20\text{V}$			

External Dimensions (SOP8)

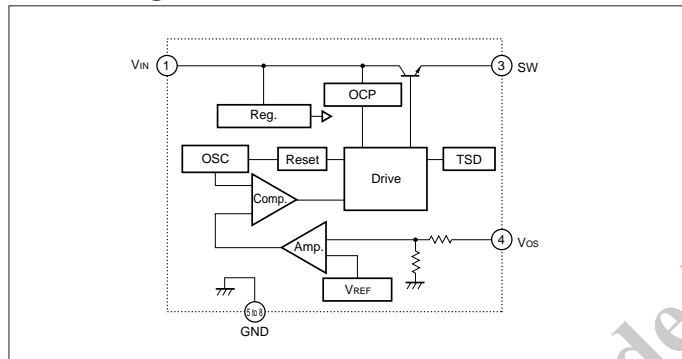
(Unit : mm)

Pin Assignment

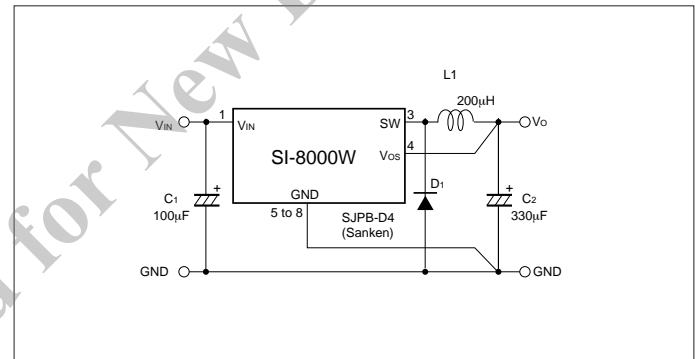
- ① VIN
- ② N.C
- ③ SW
- ④ Vos
- ⑤ GND
- ⑥ GND
- ⑦ GND
- ⑧ GND

Plastic Mold Package Type  
 Flammability: UL94V-0  
 Product Mass: Approx. 0.1g

Block Diagram



Typical Connection Diagram



Reference Data

