

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) | θ_{j-L} | 22 | °C/W |
| Thermal Resistance (Junction to Ambient Air) ^{*1} | θ_{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 | η | 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 | ΔV_{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 | ΔV_{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 | $\Delta V_O/\Delta T_a$ | ± 0.5 | | | ± 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)

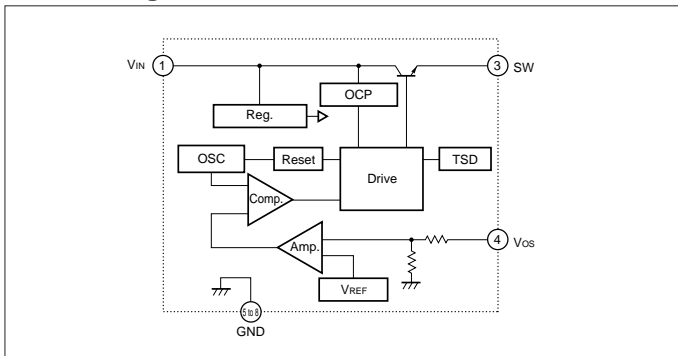
(Unit : mm)

Pin Assignment

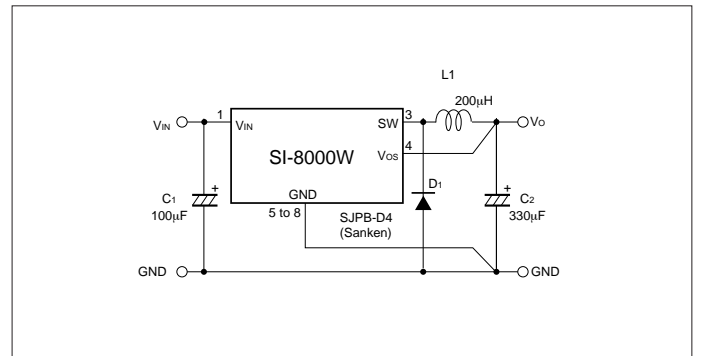
- ① VIN
- ② N.C
- ③ SW
- ④ Vos
- ⑤ GND
- ⑥ GND
- ⑦ GND
- ⑧ GND

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

Block Diagram



Typical Connection Diagram



Reference Data

