

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

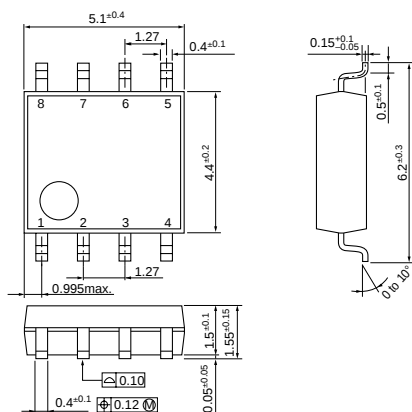
Electrical Characteristics

(T_a=25°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} =15V, I _O =0.3A			V _{IN} =20V, I _O =0.3A			
Efficiency	η		75			80		%
	Conditions	V _{IN} =15V, I _O =0.3A			V _{IN} =20V, I _O =0.3A			
Oscillation Frequency	f		60			60		kHz
	Conditions	V _{IN} =15V, I _O =0.3A			V _{IN} =20V, I _O =0.3A			
Line Regulation	ΔV _{OLINE}		60	80		80	100	mV
	Conditions	V _{IN} =8 to 28V, I _O =0.3A			V _{IN} =10 to 30V, I _O =0.3A			
Load Regulation	ΔV _{OLOAD}		20	30		30	40	mV
	Conditions	V _{IN} =15V, I _O =0.1 to 0.4A			V _{IN} =20V, I _O =0.1 to 0.4A			
Temperature Coefficient of Output Voltage	ΔV _O /ΔT _a		±0.5			±0.5		mV/°C
Ripple Rejection	R _{REJ}		45			45		dB
	Conditions	f=100 to 120Hz			f=100 to 120Hz			
Overcurrent Protection Starting Current	I _{SL}	0.61			0.61			A
	Conditions	V _{IN} =15V			V _{IN} =20V			

External Dimensions (SOP8)

(Unit : mm)



Pin Assignment

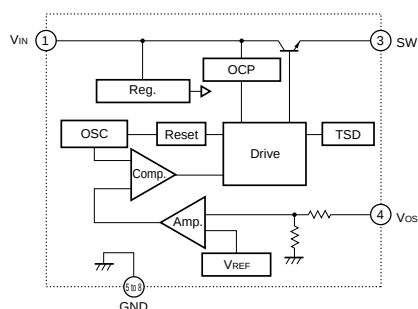
- ① V_{IN}
- ② N.C
- ③ SW
- ④ V_{OS}
- ⑤ GND
- ⑥ GND
- ⑦ GND
- ⑧ GND

Plastic Mold Package Type

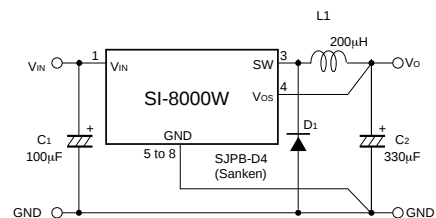
Flammability: UL94V-0

Product Mass: Approx. 0.1g

Block Diagram

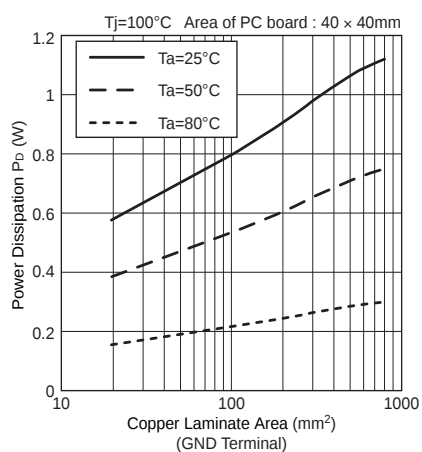


Typical Connection Diagram



Reference Data

Copper Laminate Area vs. Power Dissipation



Copper Laminate Area vs. Thermal Resistance θ_{JA}

