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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# SI-8400L/8500L Series Separate Excitation Switching Mode Regulator ICs with Coil

## Features

- Switching ICs/Coil combined type
- Requires only 2 discrete components
- Low switching noise
- No heatsink required
- Built-in overcurrent and thermal protection circuits
- Built-in soft start circuit (Output ON/OFF available)...SI-8500L Series

## Applications

- Telephone power supplies
- Onboard local power supplies

## Lineup

Part Number	SI-8401L	SI-8501L
V <sub>o</sub> (V)	5.0	5.0
I <sub>o</sub> (A)	0.5	1.0

## Absolute Maximum Ratings

Parameter	Symbol	Ratings		Unit
		SI-8400L	SI-8500L	
DC Input Voltage	V <sub>IN</sub>	35		V
Power Dissipation	P <sub>D</sub>	1.25	3	W
Junction Temperature	T <sub>j</sub>	+100		°C
Storage Temperature	T <sub>stg</sub>	-25 to +85		°C

## Recommended Operating Conditions

Parameter	Symbol	Ratings		Unit
		SI-8401L		
DC Input Voltage Range	V <sub>IN</sub>	7 to 33		V
Output Current Range	I <sub>o</sub>	0 to 0.5		A
Operating Temperature Range	T <sub>op</sub>	-20 to +85		°C

Parameter	Symbol	Ratings		Unit
		SI-8501L		
DC Input Voltage Range	V <sub>IN</sub>	7 to 33		V
Output Current Range	I <sub>o</sub>	0 to 1.0		A
Operating Temperature Range	T <sub>op</sub>	-20 to +85		°C

## Electrical Characteristics

(T<sub>a</sub>=25°C)

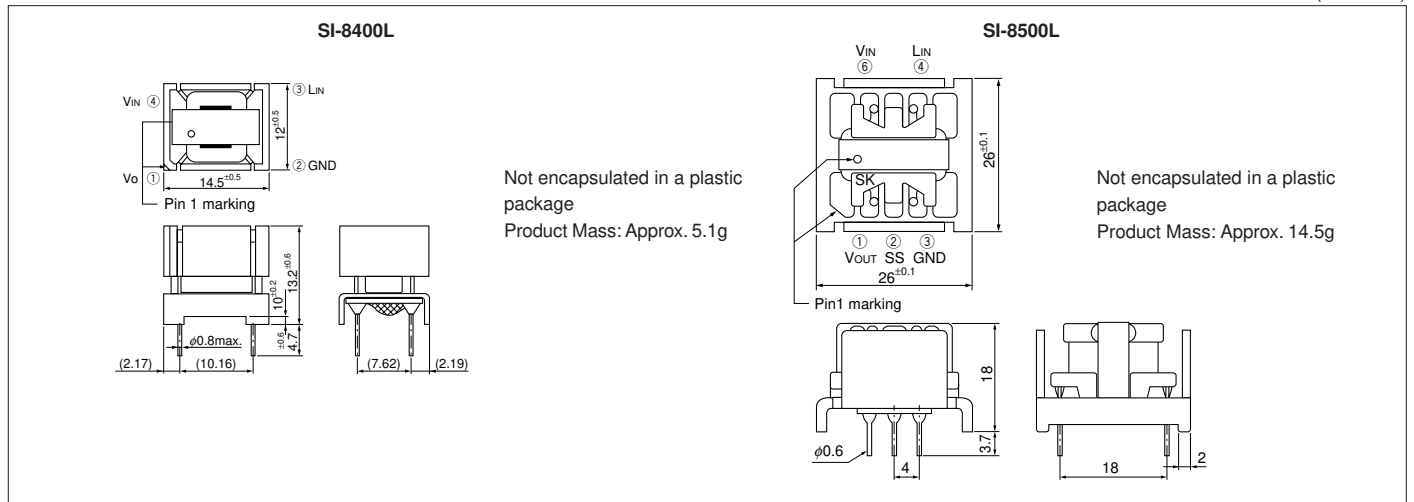
Parameter	Symbol	Ratings			Unit
		SI-8401L			
		min.	typ.	max.	
Output Voltage	V <sub>o</sub>	4.80	5.00	5.20	V
	Conditions	V <sub>IN</sub> =20V, I <sub>o</sub> =0.3A			
Efficiency	η		80		%
	Conditions	V <sub>IN</sub> =20V, I <sub>o</sub> =0.3A			
Oscillation Frequency	f		60		kHz
	Conditions	V <sub>IN</sub> =20V, I <sub>o</sub> =0.3A			
Line Regulation	ΔV <sub>OLINE</sub>		80	100	mV
	Conditions	V <sub>IN</sub> =10 to 30V, I <sub>o</sub> =0.3A			
Load Regulation	ΔV <sub>OLOAD</sub>		30	40	mV
	Conditions	V <sub>IN</sub> =20V, I <sub>o</sub> =0.1 to 0.4A			
Temperature Coefficient of Output Voltage	ΔV <sub>o</sub> /ΔT <sub>a</sub>		±0.5		mV/°C
Switching Ripple Voltage (C <sub>2</sub> =470μF)	ΔV <sub>r</sub>		20	40	mV <sub>p-p</sub>
	Conditions	V <sub>IN</sub> =20V, I <sub>o</sub> =0.3A			
Overcurrent Protection Starting Current	I <sub>s1</sub>	0.55			A
	Conditions	V <sub>IN</sub> =10V			

(T<sub>a</sub>=25°C)

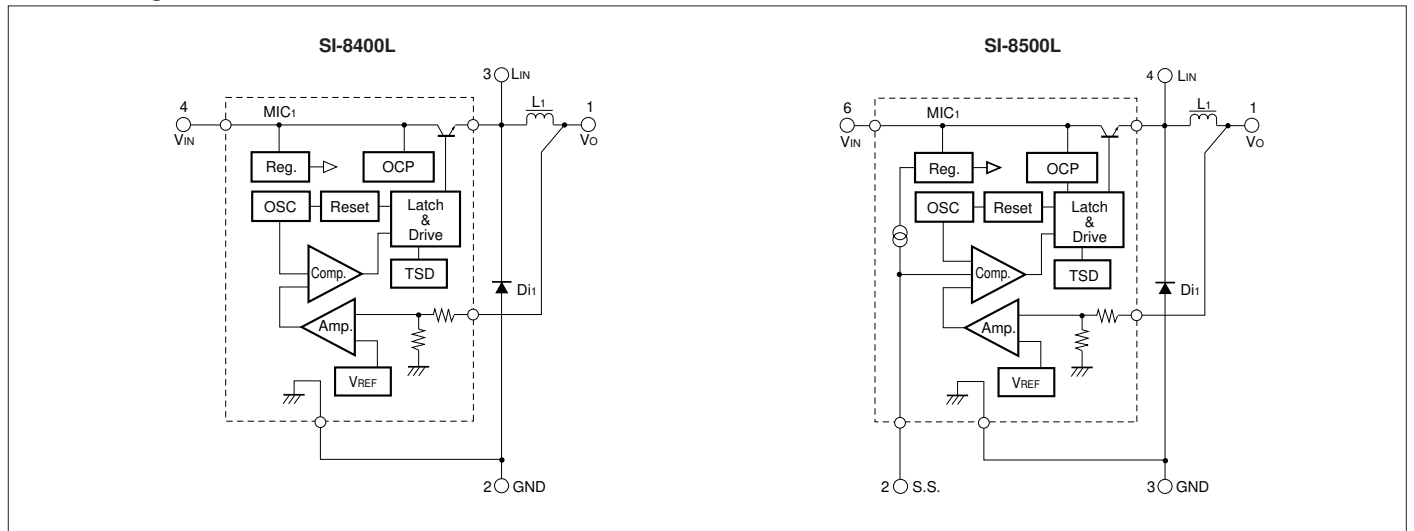
Parameter	Symbol	Ratings			Unit
		SI-8501L			
		min.	typ.	max.	
Output Voltage	V <sub>o</sub>	4.80	5.00	5.20	V
	Conditions	V <sub>IN</sub> =20V, I <sub>o</sub> =0.5A			
Efficiency	η		83		%
	Conditions	V <sub>IN</sub> =20V, I <sub>o</sub> =0.5A			
Oscillation Frequency	f		60		kHz
	Conditions	V <sub>IN</sub> =20V, I <sub>o</sub> =0.5A			
Line Regulation	ΔV <sub>OLINE</sub>		70	130	mV
	Conditions	V <sub>IN</sub> =10 to 30V, I <sub>o</sub> =0.5A			
Load Regulation	ΔV <sub>OLOAD</sub>		30	55	mV
	Conditions	V <sub>IN</sub> =20V, I <sub>o</sub> =0.2 to 0.8A			
Temperature Coefficient of Output Voltage	ΔV <sub>o</sub> /ΔT <sub>a</sub>		±0.5		mV/°C
Switching Ripple Voltage (C <sub>2</sub> =470μF)	ΔV <sub>r</sub>		45		mV <sub>p-p</sub>
	Conditions	V <sub>IN</sub> =20V, I <sub>o</sub> =0.5A			
Overcurrent Protection Starting Current	I <sub>s1</sub>	1.1			A
	Conditions	V <sub>IN</sub> =18V			

External Dimensions (Non-package type [EI-12.5 core/EI-19 core])

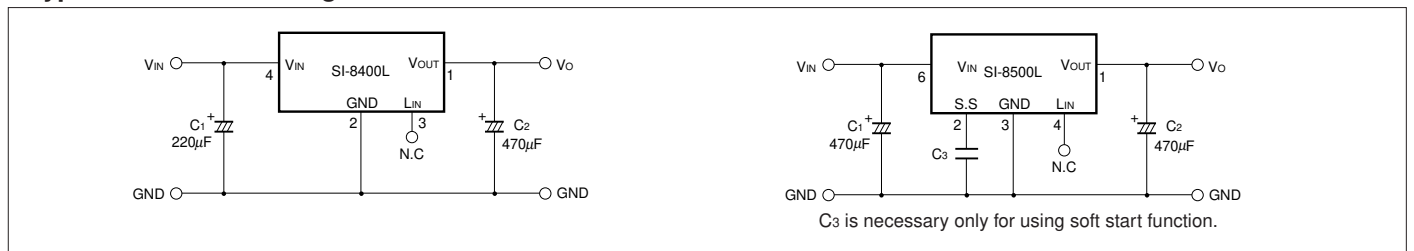
(Unit : mm)



Block Diagram



Typical Connection Diagram



Ta-Pd Characteristics

