

SI-8405NH Surface-Mount, Synchronous Rectifier Step-down Switching Mode Regulator Control ICs

■ Features

- Input voltage (V_{in}): 3.0 to 5.5 V
- Synchronous rectification
- Output voltage precision ±1.2%
- Oscillation Frequency: 750 kHz
- Overcurrent protection (Overcurrent value can be set by the external resistor.)
- Output can be disabled
- Undervoltage Lock Out
- Soft start function
- High-speed load response

■ Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Input Voltage (V _{in} pin)	V _{IN}	6	V
EN/SS Pin Input Voltage	V _{EN}	-0.3 to V _{IN}	V
Junction Temperature	T _j	+125	°C
Storage Temperature	T _{stg}	-40 to +150	°C

■ Recommended Operating Conditions

Parameter	Symbol	Ratings	Unit
Input Voltage Range	V _{IN}	3 to 5.5	V
Output Voltage Range	V _o	0.5 to 4	V
Operating Temperature Range	T _{op}	-30 to +85	°C

■ Applications

- Power supply for LCD modules
- Power supply for notebook PC
- Onboard local power supplies
- Power supply for LBP/PPC

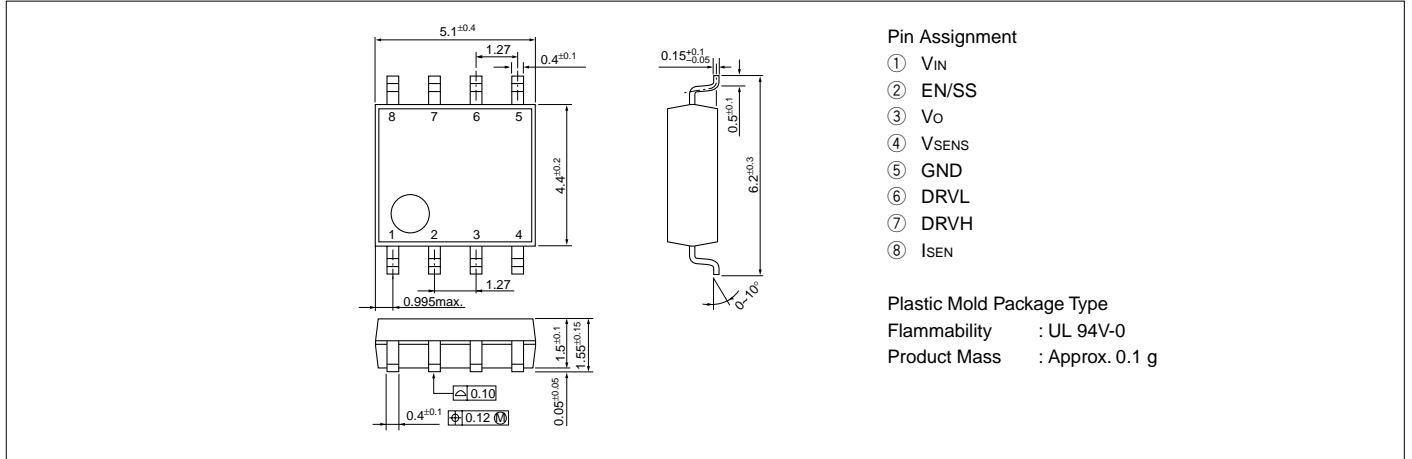
■ Electrical Characteristics

(T_a=25°C)

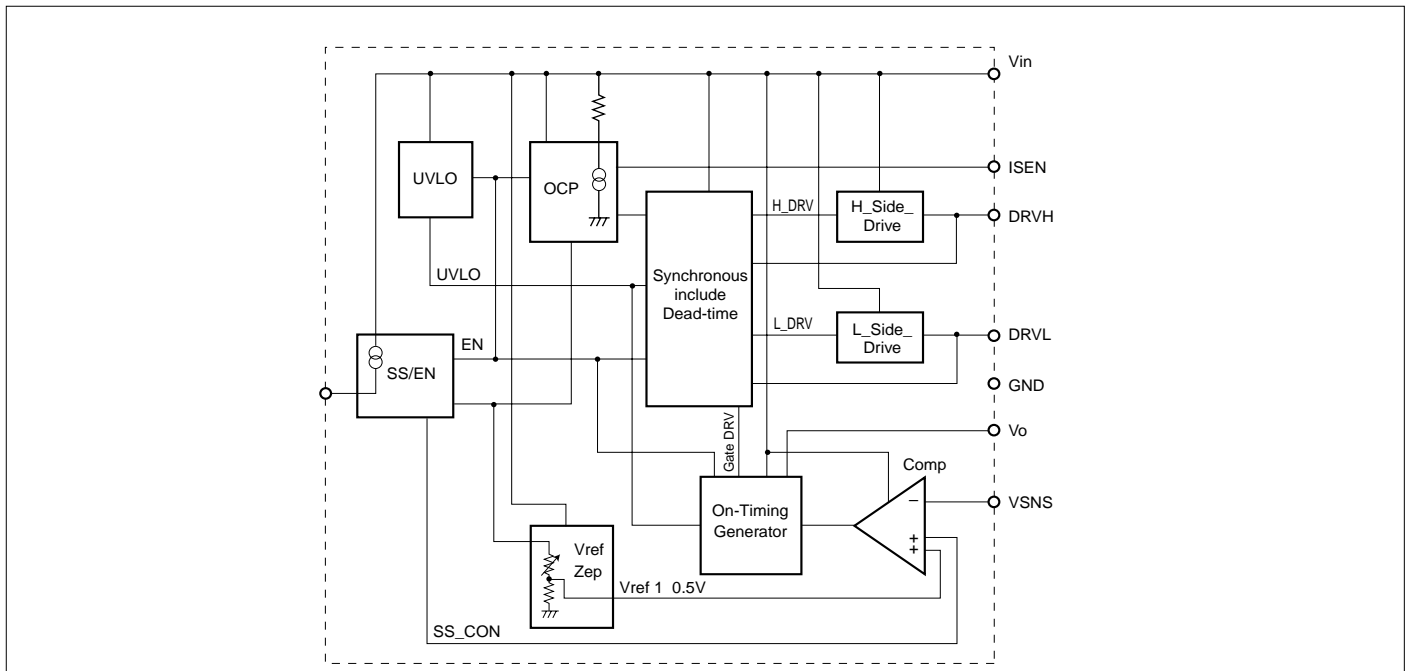
Parameter	Symbol	Ratings			Unit	
		min.	typ.	max.		
Reference Voltage	V _{ref}	0.494	0.500	0.506	V	
	Conditions	V _{IN} =5V, V _{EN} =5V				
Circuit Current (V _{in} Pin)	I _{op}		5		mA	
	Conditions	V _{IN} =5V, V _{EN} =H				
Standby Current (V _{in} Pin)	I _{std}		400	600	μA	
	Conditions	V _{IN} =5V, V _{EN} =L				
On Time	T _{on}		0.65		μS	
	Conditions	V _{IN} =5V, V _o =2.5V				
High Side Drive Block ON Resistance (Pulled Up)	R _{onHH}		3.5		Ω	
	Conditions	V _{IN} =5V, I _D =0.1A				
High Side Drive Block ON Resistance (Pulled Down)	R _{onHL}		3.5		Ω	
	Conditions	V _{IN} =5V, I _D =0.1A				
Low Side Drive Block ON Resistance (Pulled Up)	R _{onLH}		3.5		Ω	
	Conditions	V _{IN} =5V, I _D =0.1A				
Low Side Drive Block ON Resistance (Pulled Down)	R _{onLL}		3.5		Ω	
	Conditions	V _{IN} =5V, I _D =0.1A				
Overcurrent detection voltage	V _{lim}	40	50	60	mV	
	Conditions	V _{IN} =5V				
EN/SS Pin Current	I _{ss}	7	10	13	μA	
	Conditions	V _{IN} =5V				
EN/SS Low Level Voltage	V _{celo}	0		0.8	V	
	Conditions	V _{IN} =5V				
EN/SS Threshold Voltage	V _{th} (SS Start)		0.8	0.9	V	
		Conditions	V _{IN} =5V			
	V _{th} (ON)				2.4	V
		Conditions	V _{IN} =5V			
Undervoltage Lock Out (V _{in})	V _{uvloh}			2.9	V	
	V _{uvlol}	2.4				

External Dimensions (SOP8)

(Unit : mm)



Block Diagram



Typical Connection Diagram

