

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

## ■ Features

- Input voltage (VIN): 3.0 to 5.5 V
- Synchronous rectification
- Output voltage precision  $\pm 1.2\%$
- Oscillation Frequency: 250 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

## ■ Applications

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

## ■ Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Input Voltage (VIN pin)	VIN	6	V
EN/SS Pin Input Voltage	VEN	-0.3 to VIN	V
Junction Temperature	Tj	+125	°C
Storage Temperature	Tstg	-40 to +150	°C

## ■ Recommended Operating Conditions

Parameter	Symbol	Ratings	Unit
Input Voltage Range	VIN	3 to 5.5	V
Output Voltage Range	VO	0.5 to 4	V
Operating Temperature Range	Top	-40 to +85	°C

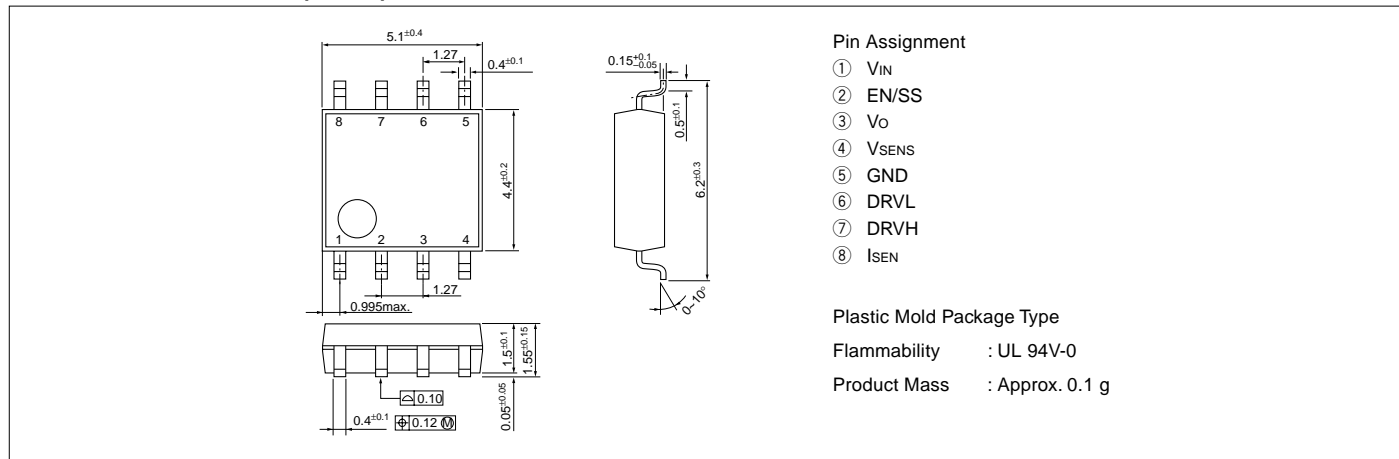
## ■ Electrical Characteristics

(Ta=25°C)

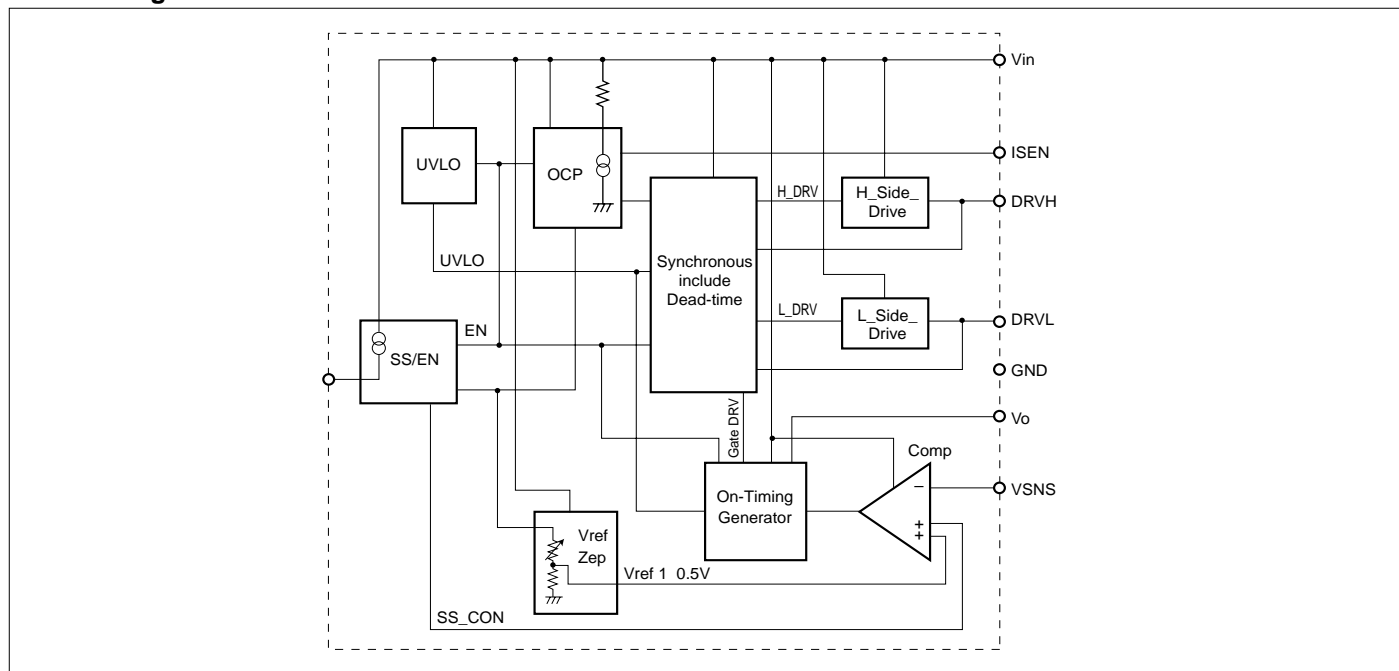
Parameter	Symbol	Ratings			Unit
		min.	typ.	max.	
Reference Voltage	Vref	0.494	0.500	0.506	V
	Conditions	VIN=5V, VEN=5V			
Circuit Current (VIN Pin)	Iop		5		mA
	Conditions	VIN=5V, VEN=H			
Standby Current (VIN Pin)	Istd		400	600	μA
	Conditions	VIN=5V, VEN=L			
On Time	Ton		2		μS
	Conditions	VIN=5V, VO=2.5V			
High Side Drive Block ON Resistance (Pulled Up)	RonHH		3.5		Ω
	Conditions	VIN=5V, ID=0.1A			
High Side Drive Block ON Resistance (Pulled Down)	RonHL		3.5		Ω
	Conditions	VIN=5V, ID=0.1A			
Low Side Drive Block ON Resistance (Pulled Up)	RonLH		3.5		Ω
	Conditions	VIN=5V, ID=0.1A			
Low Side Drive Block ON Resistance (Pulled Down)	RonLL		3.5		Ω
	Conditions	VIN=5V, ID=0.1A			
Overcurrent Detection Voltage	Vlim	40	50	60	mV
	Conditions	VIN=5V			
EN/SS Pin Current	Iss	7	10	13	μA
	Conditions	VIN=5V			
EN/SS Low Level Voltage	Vcelo	0		0.8	V
	Conditions	VIN=5V			
EN/SS Threshold Voltage	Vth(SS Start)	0.8	0.9	1.0	V
		VIN=5V			
	Vth(ON)			2.4	V
		VIN=5V			
Undervoltage Lock Out (VIN)	Vuvloh			2.9	V
	Vuvlol	2.4			

External Dimensions (SOP8)

(Unit : mm)



Block Diagram



Typical Connection Diagram

