

SI-8405NH

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 ±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

■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	−30 to +85	°C

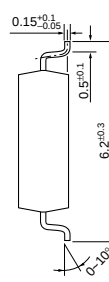
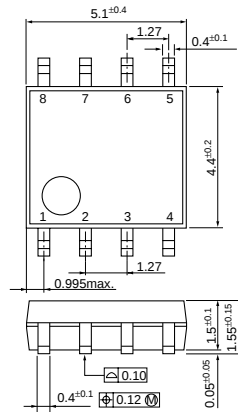
■Electrical Characteristics

(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		0.65		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
	Conditions	VIN=5V			
	Vth (ON)			2.4	V
	Conditions	VIN=5V			
Undervoltage Lock Out (Vin)	Vuvloh			2.9	V
	Vuvlol	2.4			V

External Dimensions (SOP8)

(Unit : mm)



Pin Assignment

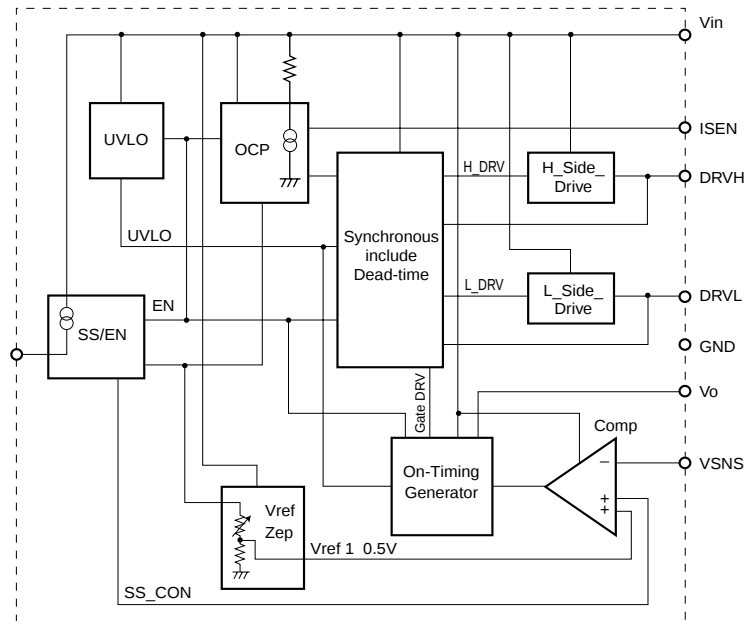
- ① VIN
- ② EN/SS
- ③ Vo
- ④ VSENS
- ⑤ GND
- ⑥ DRVL
- ⑦ DRVH
- ⑧ ISEN

Plastic Mold Package Type

Flammability : UL 94V-0

Product Mass : Approx. 0.1 g

Block Diagram



Typical Connection Diagram

