



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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-8000Y Series Current Mode Control Step-down Switching Mode

■Features

- Compact (equivalent to TO220) full-mold package
- Output current: 8.0 A
- High efficiency: 86%
- Built-in reference oscillator (130 kHz)
- Built-in drooping-type-overcurrent protection and thermal protection circuits
- Built-in soft start circuit (Output ON/OFF available)
- Low current consumption during off

■Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Input Voltage	V_{IN}	45	V
Power Dissipation	P_{D1}	20.8(With infinite heatsink)	W
	P_{D2}	1.8(Without heatsink, stand-alone operation)	W
Junction Temperature	T_j	-30 to +150	°C
Storage Temperature	T_{stg}	-40 to +150	°C
Thermal Resistance (Junction to Case)	θ_{j-c}	6	°C/W
Thermal Resistance (Junction to Ambient Air)	θ_{j-a}	66.7	°C/W

■Applications

- AV equipment
- OA equipment
- Gaming equipment
- Onboard local power supplies

■Recommended Operating Conditions

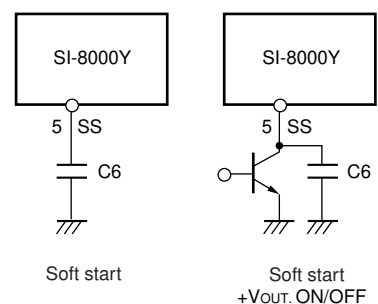
Parameter	Symbol	Raings		Unit
		SI-8010Y	SI-8050Y	
Input Voltage Range	V_{IN}	8 or V_o+3^* to 43	8 to 43	V
Output Voltage Range	V_o	1 to 15	5	V
Output Current Range	I_o	0 to 8.0		A
Operating Junction Temperature Range	T_{jop}	-30 to +135		°C
Operating Temperature Range	T_{op}	-30 to +85		°C

*: The minimum value of the input voltage range is 8 V or $V_o + 3V$, whichever is higher.

■Electrical Characteristics

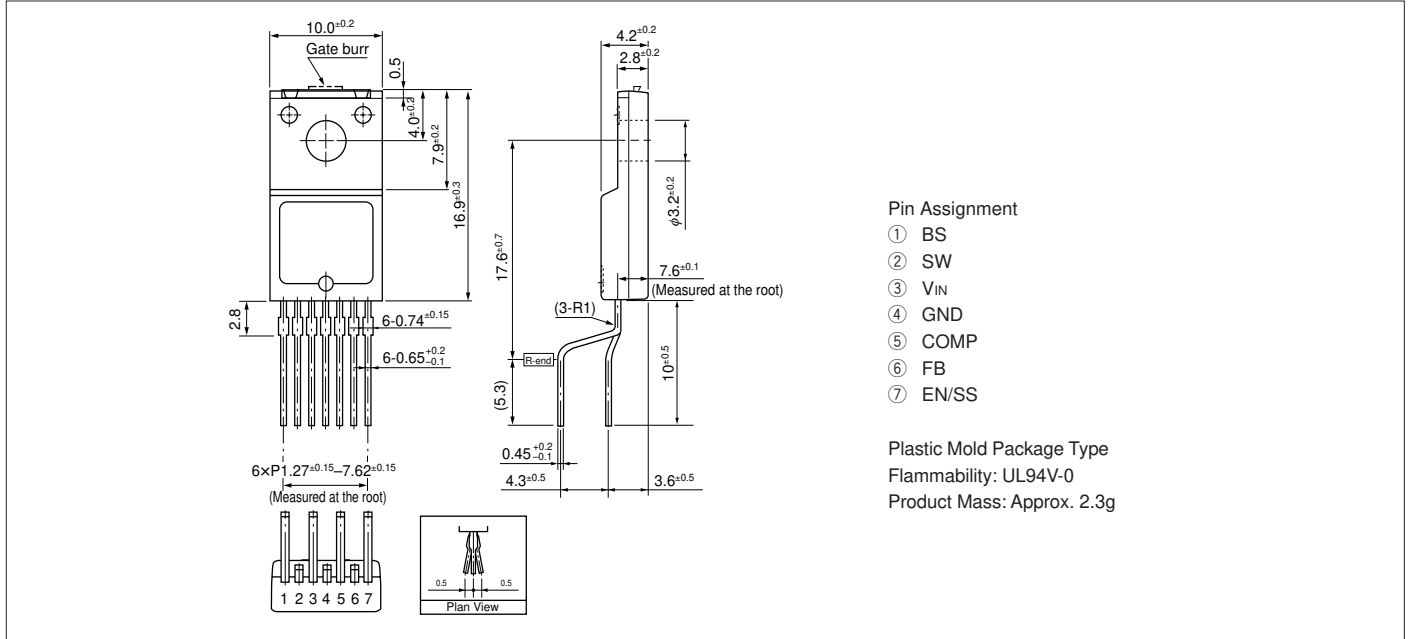
Parameter	Symbol	Ratings						Unit
		SI-8010Y*			SI-8050Y			
		min.	typ.	max.	min.	typ.	max.	
Output Voltage (Reference voltage for SI-8010Y)	$V_o(V_{REF})$	0.98	1.00	1.02	4.90	5.00	5.10	V
Temperature Coefficient of Output Voltage (Reference voltage temperature coefficient for SI-8010Y)	$\Delta V_o/\Delta T(\Delta V_{REF}/\Delta T)$	± 0.1			± 0.5			mV/°C
	Conditions	$V_{IN}=30V, I_o=0.1A, T_a=0 \text{ to } 100^\circ C$			$V_{IN}=30V, I_o=0.1A, T_a=0 \text{ to } 100^\circ C$			
Efficiency	η	86			86			%
	Conditions	$V_{IN}=30V, I_o=3A$			$V_{IN}=30V, I_o=3A$			
Oscillation Frequency	f_o	130			130			kHz
	Conditions	$V_{IN}=30V, I_o=3A$			$V_{IN}=30V, I_o=3A$			
Line Regulation	ΔV_{OLINE}	30			30			mV
	Conditions	$V_{IN}=10 \text{ to } 43V, I_o=3A$			$V_{IN}=10 \text{ to } 43V, I_o=3A$			
Load Regulation	ΔV_{LOAD}	30			30			mV
	Conditions	$V_{IN}=30V, I_o=0.1 \text{ to } 8A$			$V_{IN}=30V, I_o=0.1 \text{ to } 8A$			
Overcurrent Protection Starting Current	I_s	8.1			8.1			A
	Conditions	$V_{IN}=20V$			$V_{IN}=20V$			
Quiescent Circuit Current	I_q	8			8			mA
	Conditions	$V_{IN}=30V, I_o=0A, EN/SS=open$			$V_{IN}=30V, I_o=0A, EN/SS=open$			
	$I_{q(OFF)}$	200			200			
EN/SS Pin*	Outflow Current at Low Voltage	I_{SSL}	10		10		30	μA
		Conditions	$V_{IN}=30V, EN/SS=0V$			$V_{IN}=30V, EN/SS=0V$		
	Low Level Voltage	V_{SSL}	0.5		0.5		V	
Error Amplifier Voltage Gain	AEA	300			300			V/V
Error Amplifier Transformer Conductance	GEA	800			800			$\mu A/V$
Current Sense Amplifier Impedance	1/GCS	0.16			0.16			V/A
Maximum ON Duty	DMAX	92			92			%
Minimum ON Time	DMIN	200			200			nsec

*: $R1=8k\Omega, R2=2k\Omega$ when $T_a=25^\circ C$ and $V_o=5V$

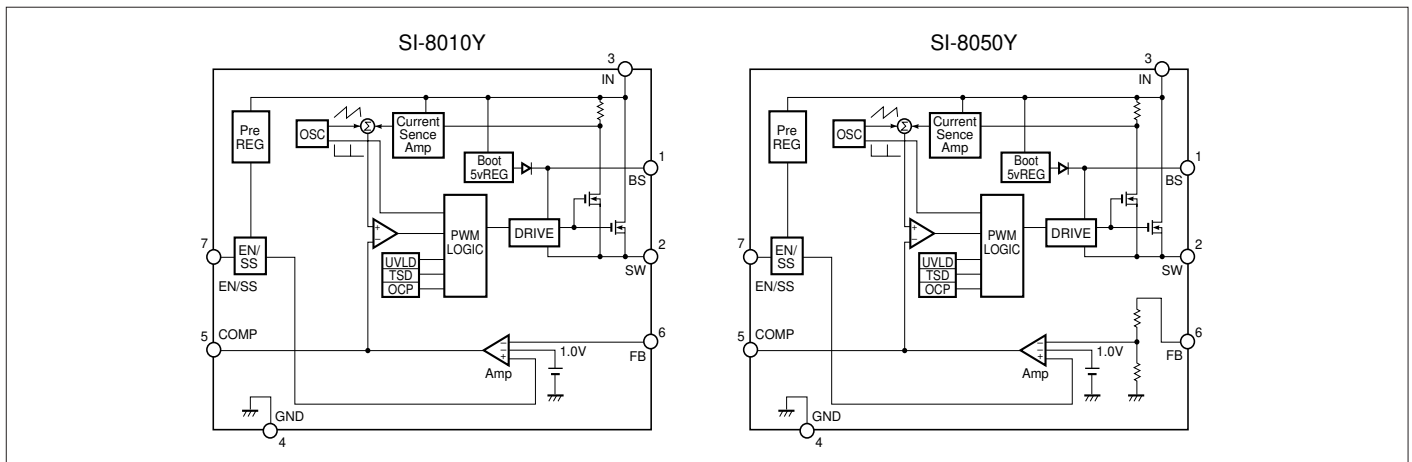


External Dimensions (TO220F-7)

(Unit : mm)



Block Diagram



Typical Connection Diagram

