

POWER MANAGEMENT**PRELIMINARY****Description**

The SC1105 is an asynchronous voltage mode PWM controller for applications that require an option of two voltages. An input is provided to select either the input voltage (VIN) or a user programmed voltage at the output.

When the PWM is enabled the 200kHz fixed frequency PWM regulates the output to either a fixed voltage of 1.5V (SC1105) or a user programmed voltage (SC1106). When the PWM is disabled the high side MOSFET gate is turned on to deliver the input voltage directly to the output.

The SC1105/6 internal architecture and functional blocks are based on the SC1101 integrated circuit, therefore, the layout guidelines and reference circuits can be readily applied.

Features

- ◆ Low cost / small size
- ◆ Switch mode efficiency $\geq 85\%$
- ◆ 1% reference voltage accuracy
- ◆ 500mA output drive
- ◆ SO-8 package

Applications

- ◆ Switchable AGP supply 1.5V or 3.3V
- ◆ Peripheral card supplies (backward compatibility)
- ◆ User selectable edge connectors
- ◆ PCMCIA cards

POWER MANAGEMENT
PRELIMINARY
Absolute Maximum Ratings

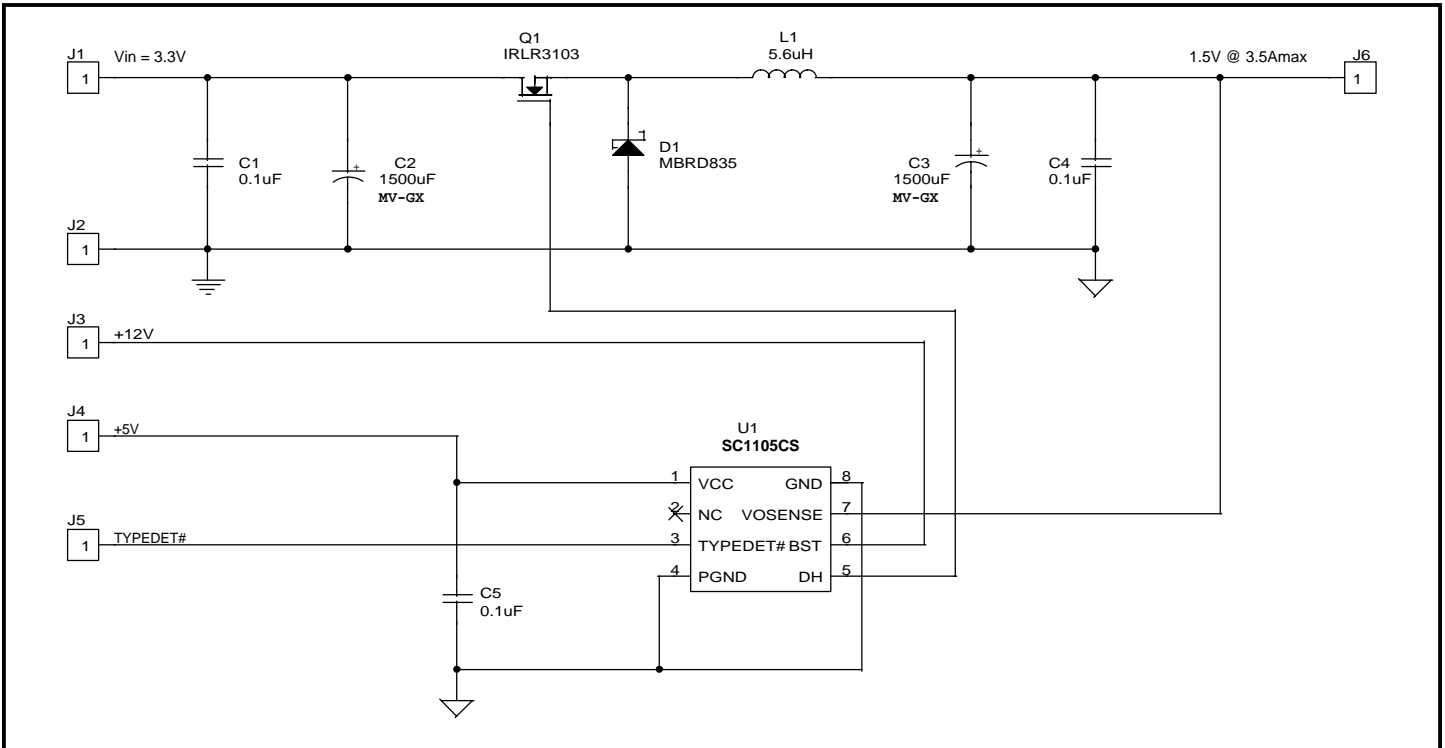
Parameter	Symbol	Maximum	Units
Input Voltage	V_{CC} to GND	-0.3 to +7	V
Ground Differential	P_{GND} to GND	+1	V
Boost Input Voltage	BST to GND	-0.3 to +15	V
Operating Temperature	T_A	0 to +70	°C
Storage Temperature Range	T_{STG}	-45 to +125	°C
Lead Temperature (Soldering) 10 Sec.	T_L	300	°C
Thermal Resistance, Junction to Ambient	θ_{JA}	165	°C/W
Thermal Resistance, Junction to Case	θ_{JC}	40	°C/W
ESD Rating (Human Body Model)	ESD	2	kV

Electrical Characteristics
 $V_{CC} = 4.75V$ to $5.25V$; $GND = P_{GND} = 0V$; $V_O = 1.5V$; $T_A = 25^\circ C$; $BST = 12V$; $2A$; $V_{IN} = 3.3V \pm 5\%$.

Per test circuit, unless otherwise specified.

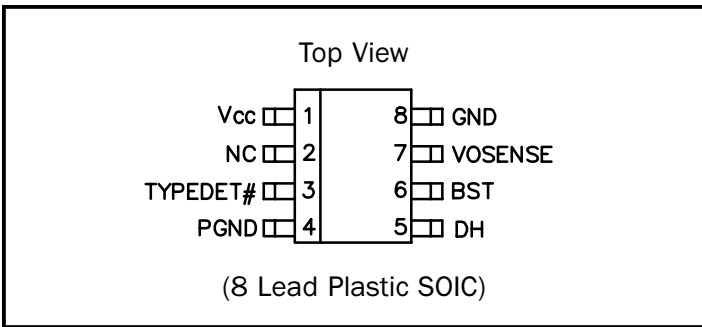
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reference	V_{REF}		1.238	1.250	1.263	V
		Over Temp	1.225	1.250	1.275	
VOSENSE Bias Current	I_B	SC1106		2.0	8.0	μA
Quiescent Current	I_Q	Current into V_{CC} pin		5.0	8.0	mA
Regulation Load	REG_{LOAD}	$I_O = 1A$ to $8A$		0.5	1.0	%
Regulation Line	REG_{LINE}				0.1	%
Oscillator Frequency	OSC		180	200	220	kHz
Max Duty Cycle	d.c.		90	95		%
DH Sink/Source Current	I_O	$V_{BST} - DH = 4.5V$ ($V_{DH} - V_{PGND} = 2V$)	500			mA

Test Circuit



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Pin Configuration



Ordering Information

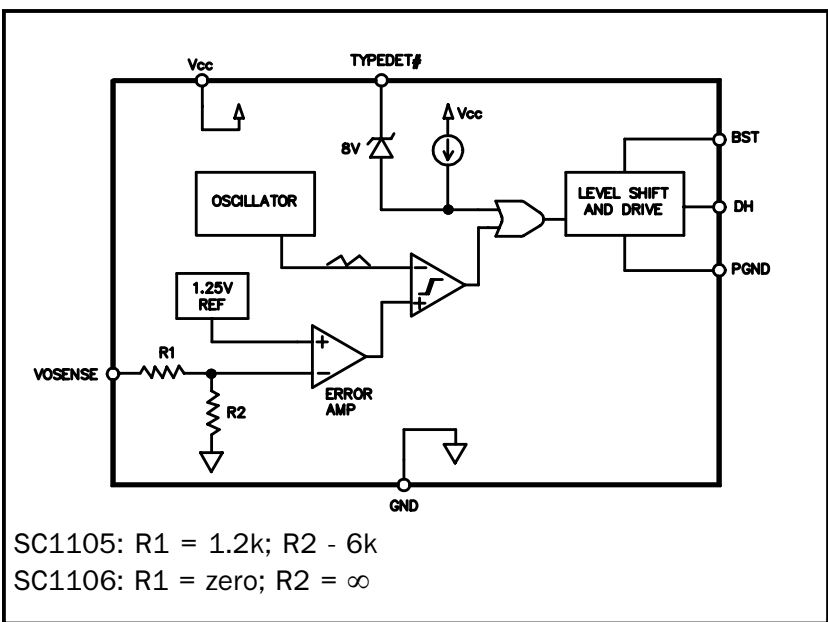
Device ⁽¹⁾	Package	Temp Range (T _j)
SC1105CS.TR	SO-8	0° to 125°C
SC1106CS.TR	SO-8	0° to 125°C

Note:
 (1) Only available in tape and reel packaging. A reel contains 2500 devices.

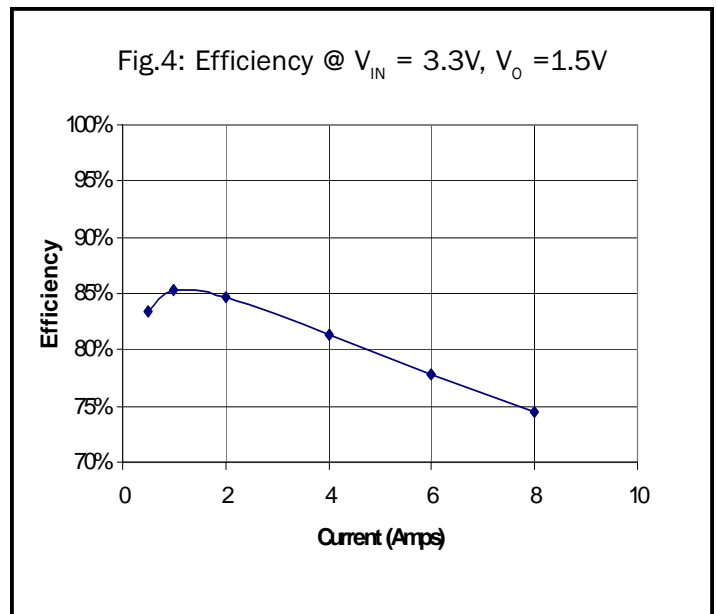
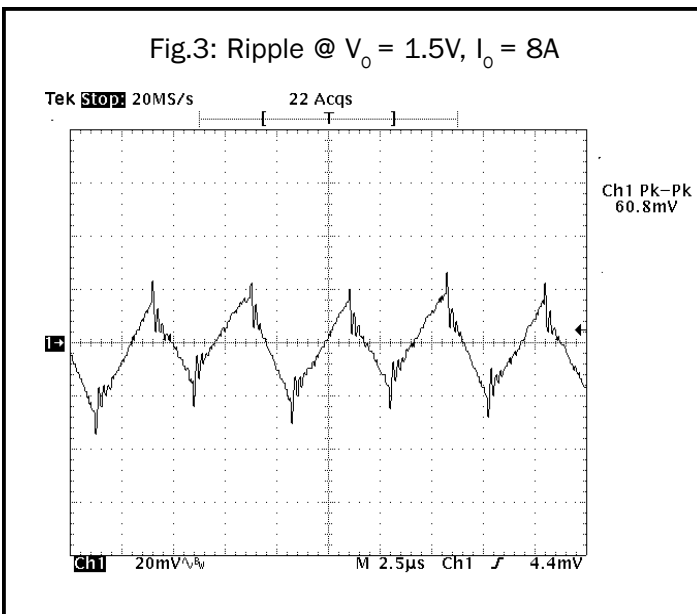
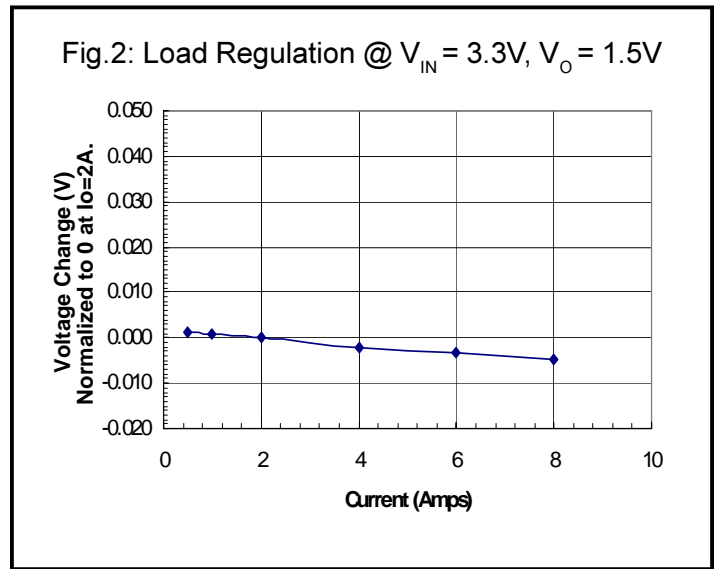
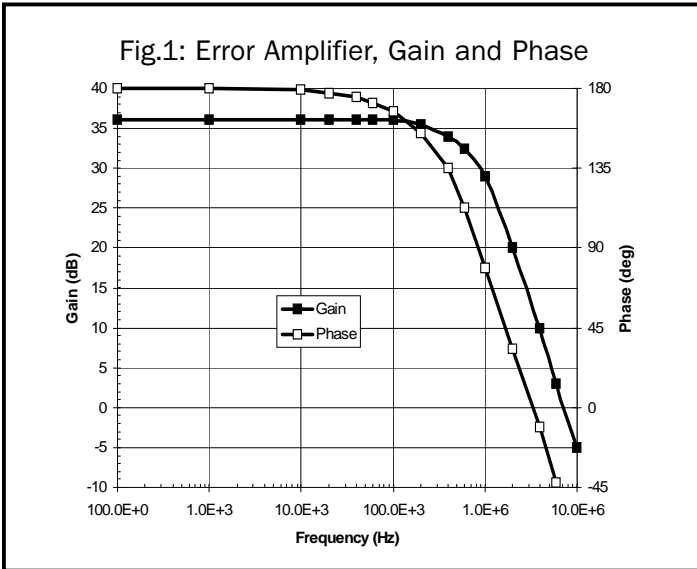
Pin Descriptions

Pin #	Pin Name	Pin Function
1	V _{CC}	Device supply voltage.
2	NC	No connection.
3	TYPEDET#	Output voltage select, Hi = 3.3V; Lo = 1.5V. Logic level input - TTL compatible.
4	PGND	Device power ground.
5	DH	High side driver output.
6	BST	12V Supply for high side driver.
7	VOSENSE	Top end of internal feedback chain.
8	GND	Small signal ground.

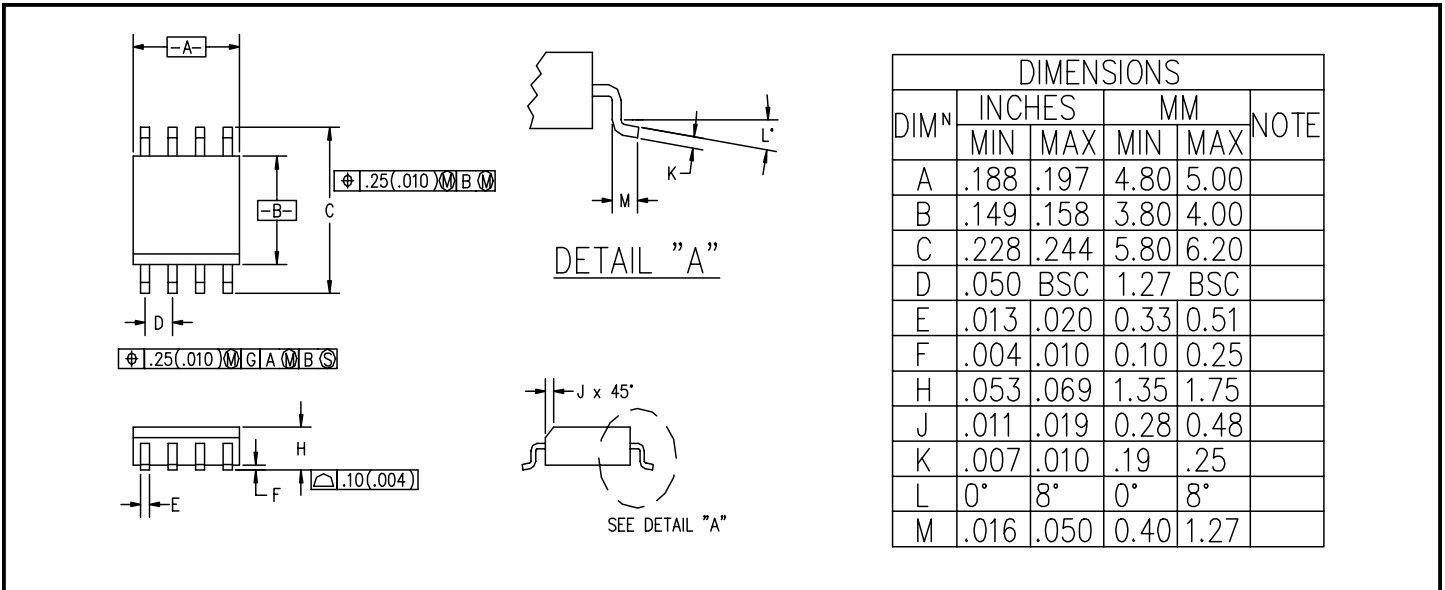
Block Diagram



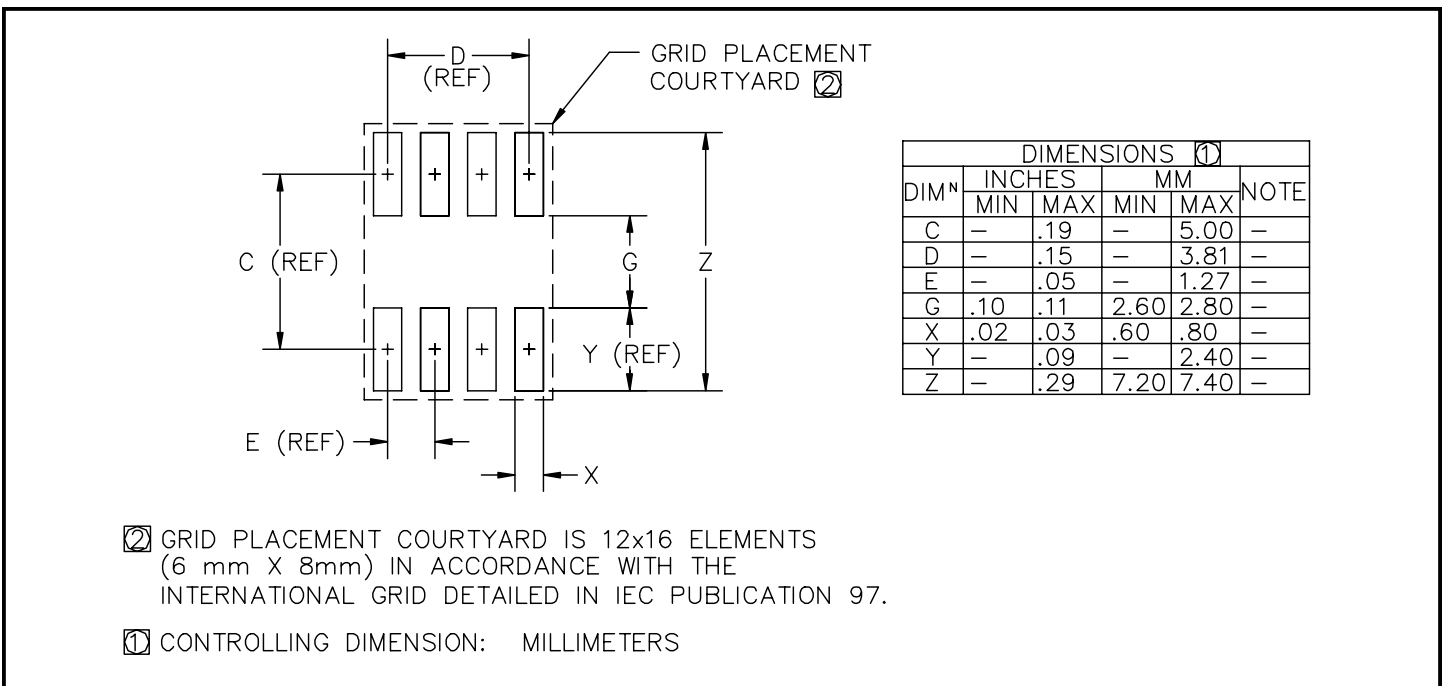
Typical Characteristics



Outline Drawing



Land Pattern - S0-8



Contact Information

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