

**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**

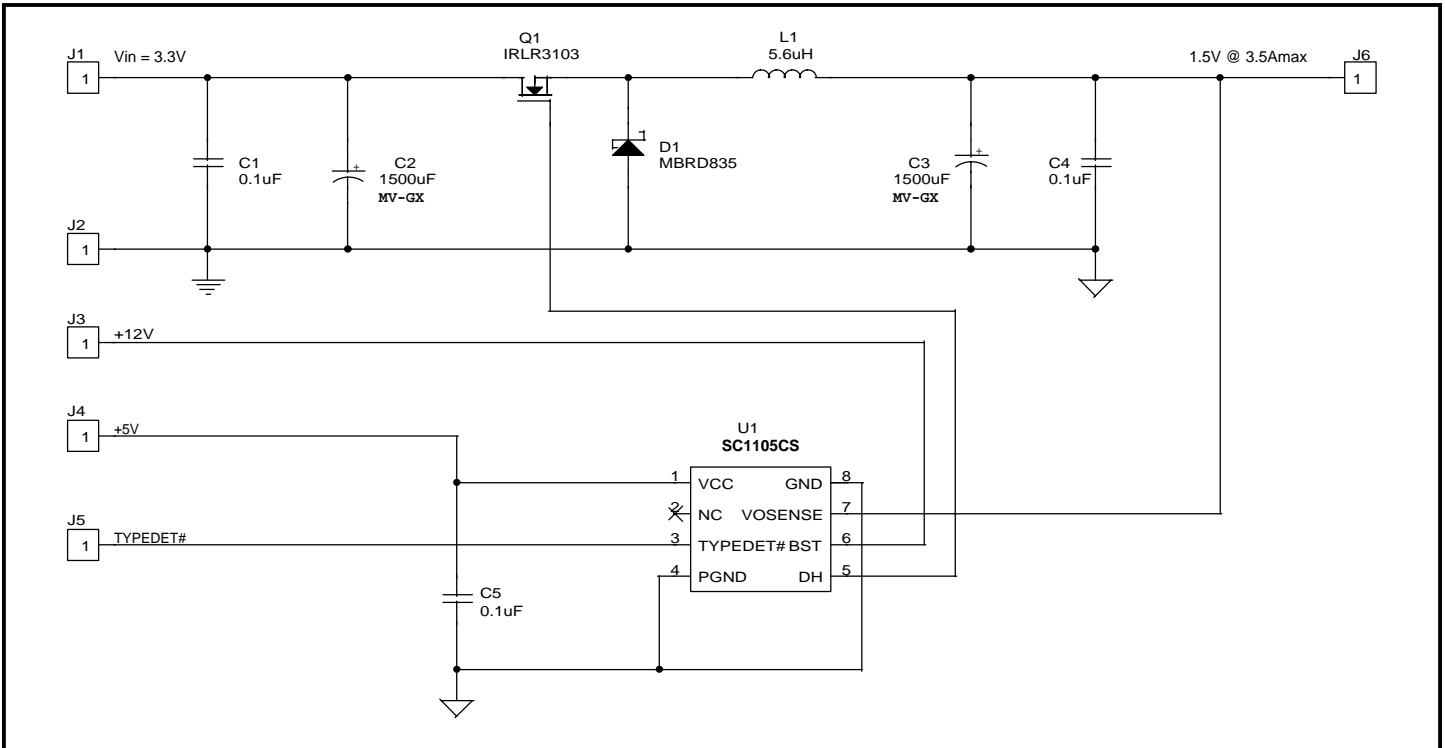
Parameter	Symbol	Maximum	Units
Input Voltage	$V_{CC}$ to GND	-0.3 to +7	V
Ground Differential	$P_{GND}$ to GND	+1	V
Boost Input Voltage	BST to GND	-0.3 to +15	V
Operating Temperature	$T_A$	0 to +70	°C
Storage Temperature Range	$T_{STG}$	-45 to +125	°C
Lead Temperature (Soldering) 10 Sec.	$T_L$	300	°C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

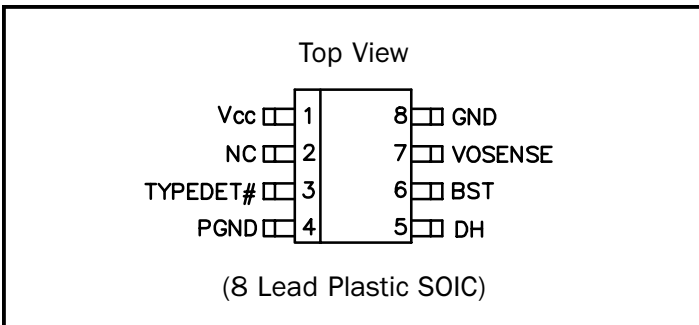
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reference	$V_{REF}$		1.238	1.250	1.263	V
		Over Temp	1.225	1.250	1.275	
VOSENSE Bias Current	$I_B$	SC1106		2.0	8.0	$\mu A$
Quiescent Current	$I_Q$	Current into $V_{CC}$ pin		5.0	8.0	mA
Regulation Load	$REG_{LOAD}$	$I_O = 1A$ to $8A$		0.5	1.0	%
Regulation 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



**POWER MANAGEMENT** **PRELIMINARY**

**Pin Configuration**



**Ordering Information**

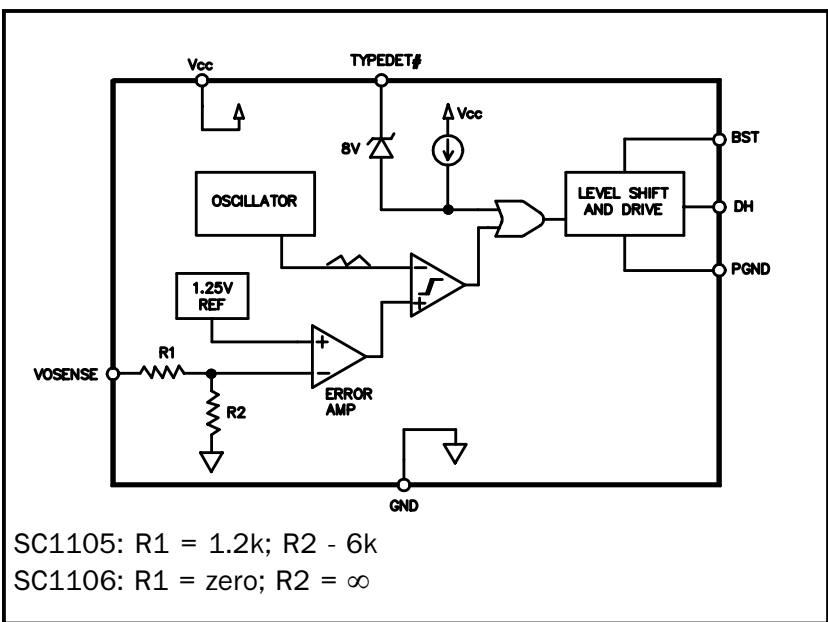
Device <sup>(1)</sup>	Package	Temp Range (T <sub>j</sub> )
SC1105CS.TR	SO-8	0° to 125°C
SC1106CS.TR	SO-8	0° to 125°C

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

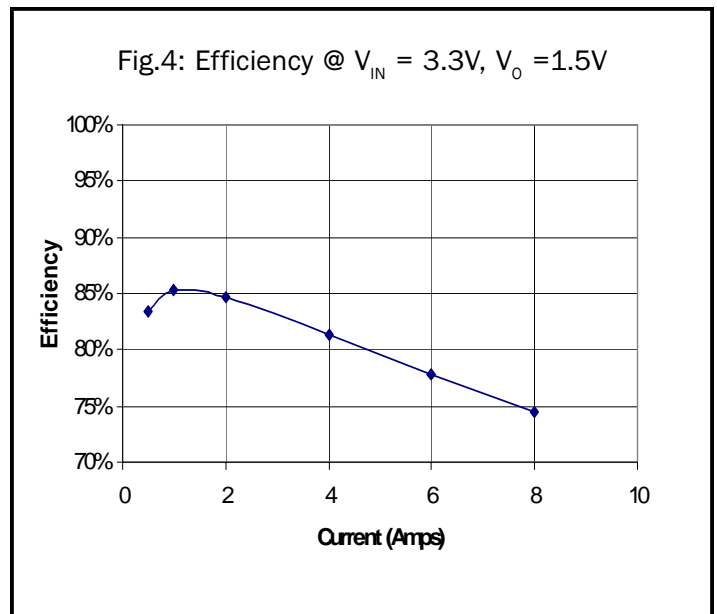
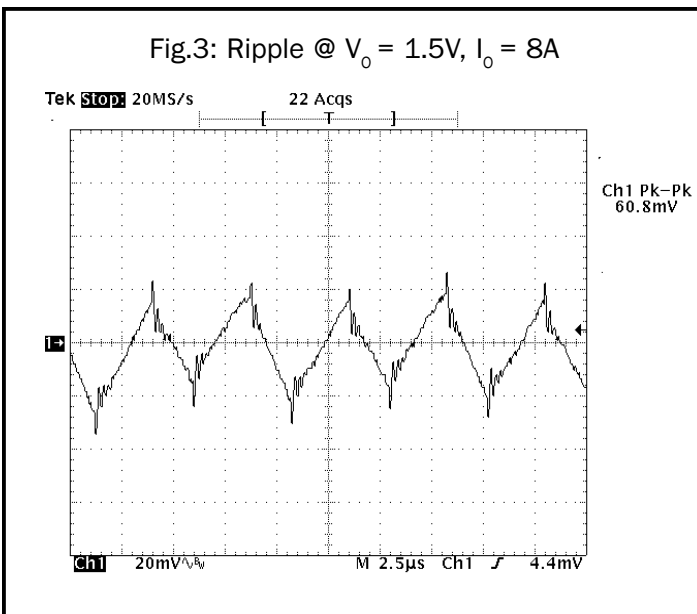
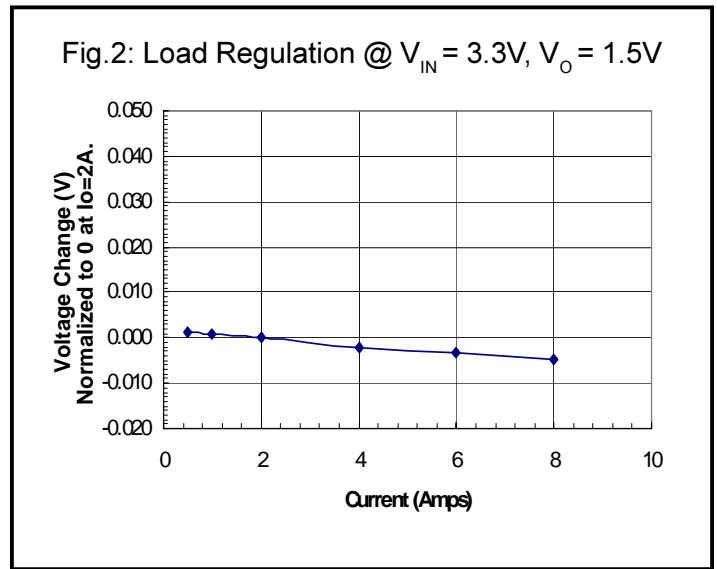
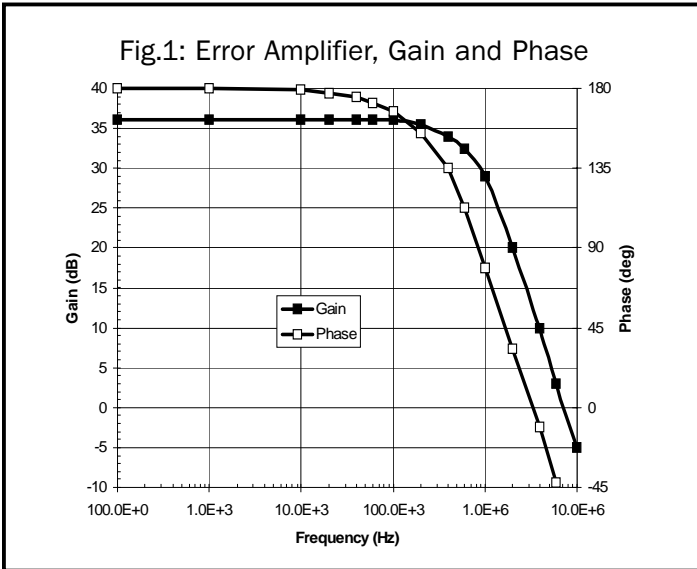
**Pin Descriptions**

Pin #	Pin Name	Pin Function
1	V <sub>CC</sub>	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.

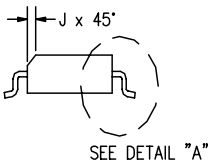
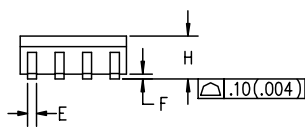
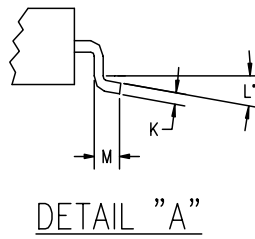
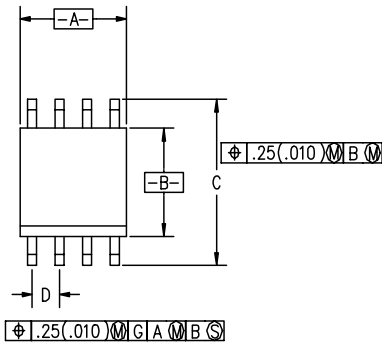
**Block Diagram**



Typical Characteristics

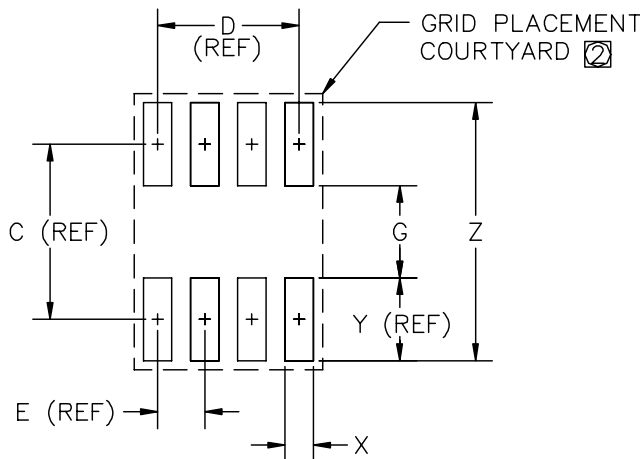


Outline Drawing



DIM <sup>N</sup>	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.188	.197	4.80	5.00	
B	.149	.158	3.80	4.00	
C	.228	.244	5.80	6.20	
D	.050	BSC	1.27	BSC	
E	.013	.020	0.33	0.51	
F	.004	.010	0.10	0.25	
H	.053	.069	1.35	1.75	
J	.011	.019	0.28	0.48	
K	.007	.010	.19	.25	
L	0°	8°	0°	8°	
M	.016	.050	0.40	1.27	

Land Pattern - S0-8



DIM <sup>N</sup>	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
C	-	.19	-	5.00	-
D	-	.15	-	3.81	-
E	-	.05	-	1.27	-
G	.10	.11	2.60	2.80	-
X	.02	.03	.60	.80	-
Y	-	.09	-	2.40	-
Z	-	.29	7.20	7.40	-

② GRID PLACEMENT COURTYARD IS 12x16 ELEMENTS (6 mm X 8mm) IN ACCORDANCE WITH THE INTERNATIONAL GRID DETAILED IN IEC PUBLICATION 97.

① CONTROLLING DIMENSION: MILLIMETERS

Contact Information

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