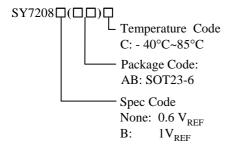


High Efficiency 1MHz, 2A Step Up Regulator

General Description

The SY7208 and SY7208B are high efficiency boost regulators targeted for general step-up applications. SY7208B incorporates input over-voltage protection and turn off the regulator when the input voltage exceeds 7V.

Ordering Information



Features

- wide input range: 3-25V bias input, 25Vout max
- 1MHz switching frequency
- Minimum on time: 100ns typical
- Minimum off time: 100ns typical
- Low Rdson: 0.2ohm
- Programmable softstart: SY7208B
- 7V input OVP protection: SY7208B
- Accurate Reference:
 - o SY7208, 0.6V_{REF}
 - o SY7208B: 1V_{REF}
- Compact package: SQT23 6 pins

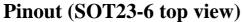
Applications

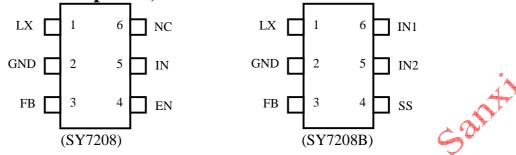
- WLED Drivers
- Networking cards powered from PCI or PCIexpress slots

Typical Applications Viv IN1,2 LX GND FB R₁ Cour

Fig. 1 Typical Schematic Diagram







Top Mark: CAxyz for SY7208 BLxyz for sy7208B

(Device code: CAfor SY7208 and BL for SY7208B, x=year code, y=week code, z=Wafer lot number code)

Pin Name	SOT23-6	Pin Description
IN(SY7208)	5	Input pin. Decouple this pin to GND pin with 1µF ceramic cap.
IN1,2(SY7208B)	6,5	Input pins. Decouple this pin to GND pin with 1uF ceramic cap.
GND	2	Ground pin
LX	1	Inductor node. Connect an inductor between IN pin and LX pin.
FB	3	Feedback pin. Connect a resistor R1 between V _{OUT} and FB, and a resistor R2 between FB and GND to program the output voltage: V _{OUT} =0.6V*(R1/R2+1)—SY7208; VOUT=1V*(R1/R2+1)—SY7208B.
SS (SY7208B)	4	External softstart pin. Add a capacitor to this pin to program the softstart time to limit the inrush current. For SY7208B, pull this pin to IN can disable the mput OVP.
EN (SY7208)	4	Enable control. High to turn on the part. Don't leave it floated.

Absolute Maximum Ratings (Note 1)

OUT, LX, IN, SEN	- 26V
All other pins	- 6V
Power Dissipation, PD @ TA = 25°C SOT-23-6,	0.4W
Package Thermal Resistance (Note 2)	
heta JA	- 250°C/W
θ ις	- 130°C/W
Junction Temperature Range	
Lead Temperature (Soldering, 10 sec.)	
Storage Temperature Range	65°C to 150°C
ESD Susceptibility (Note 2)	
HBM (Human Body Mode)	
MM (Machine Mode)	- 200V

Recommended Operating Conditions (Note 3)

IIN 1,2	, LX	- 3 V to 23 V
All of	ner pins	- 0-5.5V
	1	
Ambi	ent Temperature Range	-40°C to 85°C



Electrical Characteristics

(VIN = 5V, Vout=12V, Iout=100mA, TA = 25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	1	Min	Тур	Max	Unit
Input Voltage Range	VIN		3	3		25	V
Quiescent Current	IQ	FB=0.66V			100		μA
Low Side Main FET	RDS(ON)1				200		$m\Omega$
RON						A.	J. 1
Main FET Current	I_{LIM1}		2	2		2.6	A
Limit							
Switching Frequency	Fsw		(8.0	1	1.2	MHz
Feedback Reference	VREF	SY7208	(0.588	0.6	0.612	V
Voltage		SY7208B	(0.98	X	1.02	V
IN OVP rising	$V_{IN,OV}$	SY7208B only	7	7			V
threshold					7		
IN OVP hysteresis	$V_{OV,HYS}$	SY7208B only			0.3		V
IN UVLO rising	$V_{\rm IN, UVLO}$		A			2.7	V
threshold				1			
UVLO hysteresis	UVLO,HYS				0.1		V
Thermal Shutdown	TSD				150		°C
Temperature							

Note 1: Stresses listed as the above "Absolute Maximum Ratings" may cause permanent damage to the device. These are for stress ratings. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may remain possibility to affect device reliability.

Note 2: θ JA is measured in the natural convection at TA = 25°C on a low effective single layer thermal conductivity test board of JEDEC 51-3 thermal measurement standard.

Note 3: The device is not guaranteed to function outside its operating conditions.



SOT23-6 Package outline & PCB layout design

