



## Features

- SIP (Single In-line Package)
- Output voltage programmable from 0.75 V<sub>dc</sub> to 5.5 V<sub>dc</sub> via external resistor
- 5 A output current
- Up to 92 % efficiency
- Small size, low profile
- Cost-efficient
- Low output ripple and noise
- High reliability
- Remote on/off
- Output overcurrent protection (non-latching)

## SX5A-12SA SIP Non-Isolated Power Module

### Description

Bourns® SX5A-12SA is a non-isolated DC-DC converter offering designers a cost and space-efficient solution with standard features such as remote on/off, precisely regulated programmable output voltage and overcurrent protection.

### Specifications

Parameter	Min.	Nom.	Max.	Units	Notes
<b>INPUT</b>					
Voltage	10	12	14	V <sub>dc</sub>	
Current			3.5	A <sub>dc</sub>	
Remote ON/OFF: Low or Open = On High = Off	2.4		0.4 V <sub>in</sub>	V <sub>dc</sub> V <sub>dc</sub>	10 µA max. 1 mA max.
<b>OUTPUT</b>					
Voltage Adjustment Range	0.75		5.5	V <sub>dc</sub>	
Current	0.0		5.0	A <sub>dc</sub>	
Voltage Setpoint Accuracy	-2.0		2.0	% V <sub>o,set</sub>	
Line Regulation		0.3		% V <sub>o,set</sub>	
Load Regulation		0.4		% V <sub>o,set</sub>	
Temperature Regulation		0.4		% V <sub>o,set</sub>	0 to +85 °C
Ripple (pk-pk) (20 MHz Bandwidth)		50	75	mVpk-pk	1 µF ceramic//10 µF tantalum capacitors
Ripple (rms)		15	30	mVrms	1 µF ceramic//10 µF tantalum capacitors
Dynamic Load Response: 50 % to 100 % Load or 100 % to 50 % Load; (Δi/Δt = 2.5 A/µs; 25 °C)		200 25		mV µs	1 µF ceramic//10 µF tantalum capacitors
50 % to 100 % Load or 100 % to 50 % Load; (Δi/Δt = 2.5 A/µs; 25 °C)		50 50		mV µs	2 x 150 µF polymer capacitors
<b>GENERAL</b>					
MTBF		10,000		kHrs	
Operating Temperature	-40		+85	°C	
Storage Temperature	-55		+125	°C	
Switching Frequency		300		kHz	
Efficiency (V <sub>in</sub> = 12 V <sub>dc</sub> , T <sub>A</sub> = 25 °C, Full Load)		81.5		%	V <sub>o,set</sub> = 1.2 V <sub>dc</sub>
		84.0		%	V <sub>o,set</sub> = 1.5 V <sub>dc</sub>
		85.0		%	V <sub>o,set</sub> = 1.8 V <sub>dc</sub>
		87.0		%	V <sub>o,set</sub> = 2.5 V <sub>dc</sub>
		89.0		%	V <sub>o,set</sub> = 3.3 V <sub>dc</sub>
		92.0		%	V <sub>o,set</sub> = 5.0 V <sub>dc</sub>

### Applications

- Intermediate Bus architecture
- Distributed power applications
- Workstations and servers
- Telecom equipment
- Enterprise networks including LANs/WANs
- Latest generation ICs (DSP, FPGA, ASIC) and microprocessor powered applications

\*RoHS Directive 2002/95/EC Jan 27 2003 including Annex.  
Specifications are subject to change without notice.  
Customers should verify device performance in their specific applications.

