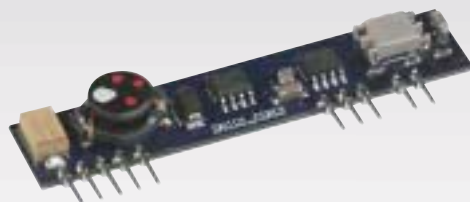


SC5A SERIES

HDLV
Family

Description

The SC5A is a 5-amp, full-featured, non-isolated DC-DC converter. Designed for 12 V distributed power systems, the SC5A comes in a SIP form factor to minimize board space and maximize power density. It combines an industry-standard pin-out with a mounted height of only 0.5 inches. Using Bourns Switch Power's proprietary V²™ architecture with a 12 V input, the SC5A provides ultrafast transient response, improved line and load regulation, and very high efficiency.



Features

- 5-amp Output Current
- 94 % Efficiency
- Industry-standard Pin-out
- Low 0.5 " Profile
- Non-isolated Output
- Remote Sense
- Remote Enable
- Short-Circuit Protection with Auto restart
- Trim Function
- Fast Transient Response
- High-temperature Operation
- 60 W/in³ Power Density

Patents 5,770,940
5,978,195

Common Specifications

	Min	Nom	Max	Units	Notes
Input					
Voltage	9	12	16	Vdc	10-16 V for SC5A-12S5
Current			3	A	
Remote Enable					
High = Disable	2.4		5.5	Vdc	Source 500 μA
Low = Enable			0.7	Vdc	Open=Enable
Current			20	mA	Disabled
Output					
Current	0		5	A	
Sense Compensation			50	mV	
Voltage Setpoint Accuracy		±1.4	±2.3	%V _{nom}	
Voltage Trim Range	-10		+10	%V _{nom}	
Line Regulation		±0.2		%V _{nom}	
Load Regulation		±0.1		%V _{nom}	
Temp Regulation		.005		%V _{nom} /°C	
Current Limit	6			A	
Dynamic Response					
0 to 100 % load		200		mV	Δi/Δt = 3 A/μs
		19		μs	
100 to 0 % load		200		mV	Δi/Δt = 3 A/μs
		19		μs	
Temperature Regulation			±0.02	%V _{out} /°C	
General					
MTBF		1,878		k Hrs	25°C, 80 % load, 100 lfm
Operating Temperature	-25		85	°C	
Storage Temperature	-55		125	°C	
Switching Frequency		500		kHz	



Reliable Electronic Solutions

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www.bourns.com

Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

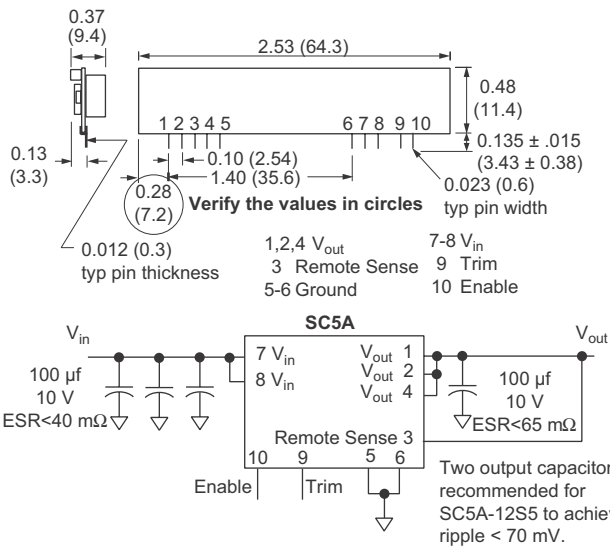
Electrical Specifications

	Nominal Input (V)	Output Voltage (V)	Output Current (A)	Ripple (mV pp) typ	Efficiency (%) typ
SC5A-12S5	12	5.0	5	120	93
SC5A-12S3.3	12	3.3	5	100	90
SC5A-12S2.5	12	2.5	5	100	88
SC5A-12S1.8	12	1.8	5	100	85

Standard Options

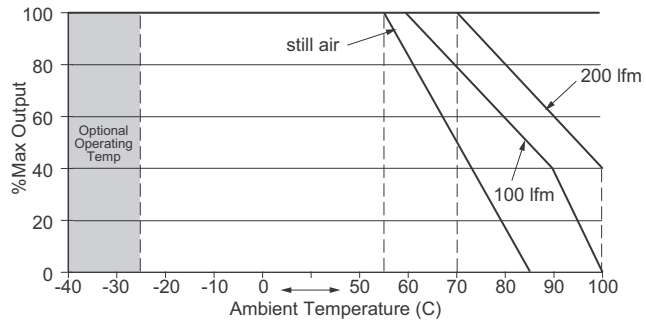
Add option designators to the end of the part number. Example; SC5A-12S3.3-Z

Option	Description
Z	-40 °C Operation

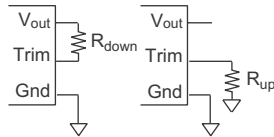


inches (mm)
0.xx ±0.01 inches
0.xxx ±0.005 inches

SC5A Temperature Derating



SC5A Trim Circuits



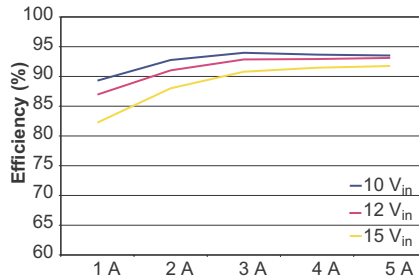
$$R_{down} (\Omega) = \frac{[(1000V_{out} - 1300) * (R_1 + R_2)] - (R_1 * R_2)}{1300 - 1000V_{out} + R_1}$$

$$R_{up} (\Omega) = \frac{R_1 * 1690}{1300V_{out} - 1690 - 1.3R_1} - R_2$$

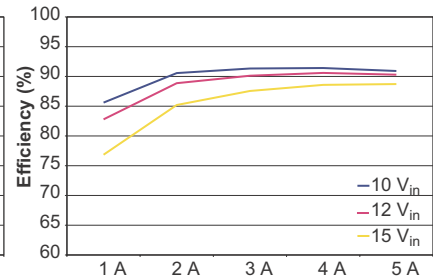
V_{out} = Desired output voltage

V_{nom}	R_1 (Ω)	R_2 (Ω)
5.0	3,740	10,000
3.3	2,000	4,120
2.5	1,210	2,550
1.8	499	432

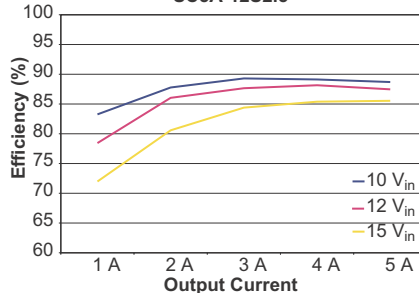
SC5A-12S5



SC5A-12S3.3



SC5A-12S2.5



SC5A-12S1.8

