

The "SB" Series of DC/DC converters feature 1 to 2 Watts of isolated power combining compact size and high efficiency. The small size of this 7 pin SIP package saves valuable board space in new product design. With single or dual outputs, the SB series is ideal for a variety of demanding requirements such as those found in the datacom/telecom, industrial control, computing, transportation, or office automation industries. Reliability Incorporated also provides custom designed DC/DC Converters to meet customer specifications, and welcomes the opportunity to design and manufacture more such solutions.

*The size and pin out conform to internationally recognized packaging that is an industry standard. Operating from a nominal 5, 12, 24 or 48 VDC input source, this PCB mountable, low profile miniature converter provides single or dual unregulated, isolated outputs varying from 5 to 15VDC. It meets or exceeds a variety of safety and emissions requirements including CE (LVD), EN 55022 "Class A", and UL 1950.*

Reliability Incorporated is based in Houston, Texas, USA and is a leading provider of semiconductor processing equipment and DC-to-DC power converters. The DC-to-DC converters are manufactured by and sold through RICR de Costa Rica, S.A., which is a wholly owned subsidiary of Reliability Incorporated. The Houston facility is ISO 9001 certified and the facilities in San Jose, Costa Rica and Singapore are both ISO 9002 certified.



### Key Features

- Standard SIP Package
- High Density / Compact size
- Efficiencies up to 80%
- Thru Hole mounting
- 1000 VDC input/output isolation
- No derating to 71°C Operating Temperature

### Applications

- Distributed Power Systems
- Datacommunications Equipment
- Telecommunications Equipment
- Computer Systems
- Industrial Control Systems

### General Electrical Specifications

(Specifications at Nominal Input and 25 C, nominal input voltage and rated output current unless otherwise noted.)

Parameter	Limits	Conditions
Output Voltage Accuracy	See selection guide column 4.	Nominal Line, Full Load
Input / Output Isolation	1000VDC	For 60 seconds
Minimum Load	10% of Full Load	
Output Ripple & Noise	<100 mV Peak to Peak (max)	20 MHz Bandwidth
Load Regulation	7% typical (varies by model, consult factory for details)	10% to 100% of Full Load, Nominal Line
Line Regulation	1.2% output change per 1% input voltage change (max.)	Full Load
Efficiency	75% typical	Nominal Line
Operating Temperature	-25° C to +85° C	Ambient Temperature
Storage Temperature	-55° C to 125° C	Ambient Temperature
Temperature Coefficient	± 0.02%/°C	Output VDC
Short Circuit Protection	Intermittent (<2 sec)	Self Recovering
CE	LVD	
EMC / RFI	Input Capacitor	

**Additional Information**  
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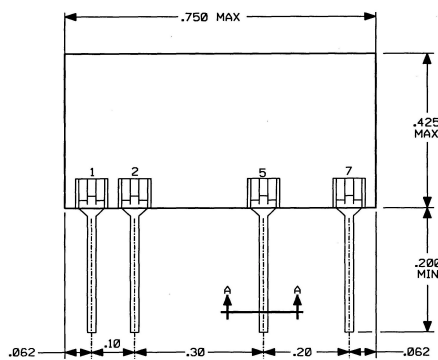
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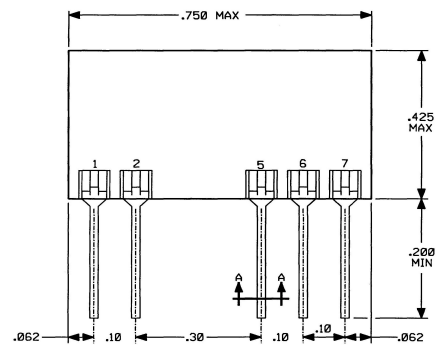
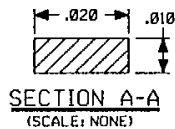
# Selection Guide

Device Type	Input Voltage Range VDC	Typical Input Current (A) @ Max Load	Output Voltage VDC	Max Output Current (A)
SB5U5	4.75-5.25	0.267	5.0±10%	0.200
SB5U12	4.75-5.25	0.270	12.0 ±10%	0.083
SB5U15	4.75-5.25	0.270	15.0 ±10%	0.067
SB12U5	10.8-13.2	0.111	5.0±10%	0.200
SB12U12	10.8-13.2	0.111	12.0 ±10%	0.083
SB12U15	10.8-13.2	0.111	15.0 ±10%	0.067
SB24U5	21.6-26.4	0.056	5.0±10%	0.200
SB24U12	21.6-26.4	0.056	12.0 ±10%	0.083
SB24U15	21.6-26.4	0.056	15.0 ±10%	0.067
SB48U5	43.2-52.2	0.028	5.0±10%	0.200
SB48U12	43.2-52.2	0.028	12.0 ±10%	0.083
SB48U15	43.2-52.2	0.028	15.0 ±10%	0.067
SB5U5-5	4.75-5.25	0.267	±5 ±10%	±0.100
SB5U12-12	4.75-5.25	0.267	±12 ±10%	±0.042
SB5U15-15	4.75-5.25	0.267	±15 ±10%	±0.033
SB12U5-5	10.8-13.2	0.110	±5 ±10%	±0.100
SB12U12-12	10.8-13.2	0.110	±12 ±10%	±0.042
SB12U15-15	10.8-13.2	0.110	±15 ±10%	±0.033
SB24U5-5	21.6-26.4	0.056	±5 ±10%	±0.100
SB24U12-12	21.6-26.4	0.056	±12 ±10%	±0.042
SB24U15-15	21.6-26.4	0.056	±15 ±10%	±0.033
SB48U5-5	43.2-52.2	0.028	±5 ±10%	±0.100
SB48U12-12	43.2-52.2	0.028	±12 ±10%	±0.042
SB48U15-15	43.2-52.2	0.028	±15 ±10%	±0.033
2SB5U9	4.9-5.1	0.480	9.0 ±3%	0.250
2SB12U9	11.64-12.36	0.200	9.0 ±3%	0.250
2SB24U9	23.3-24.7	0.110	9.0 ±3%	0.250
2SB48U9	43.2-52.2	0.055	9.0 ±10%	0.250
2SB5U9-9	4.75-5.25	0.520	±9.0 ±10%	±0.110
2SB12U9-9	10.8-13.2	0.220	±9.0 ±10%	±0.110
2SB24U9-9	21.6-26.4	0.110	±9.0 ±10%	±0.110
2SB48U9-9	43.2-52.2	0.055	±9.0 ±10%	±0.110

## Mechanical Specification (dimensions in inches)



Maximum Thickness  
0.300



## Pin Connections

Single Output Models		Dual Output Models	
1.	+ input	1.	+ input
2.	- input	2.	- input
5.	- output	5.	- output
7.	+ output	6.	Com
		7.	+ output