

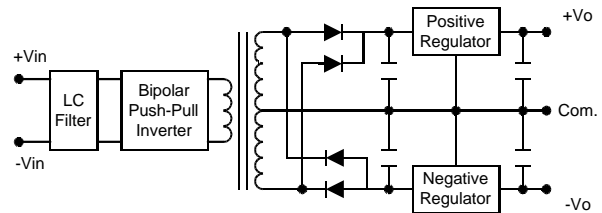
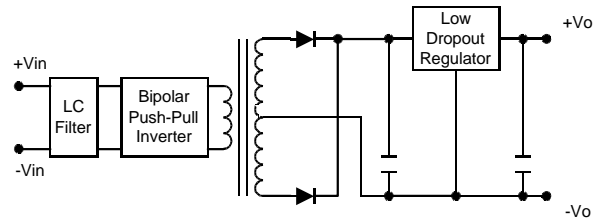
TOTAL POWER INT'L

S2A00R Series 3 Watt Low Cost DIP DC/DC Converters

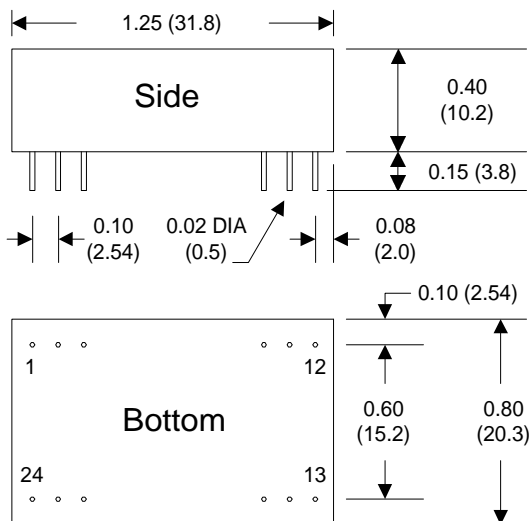
Single & Dual Output

Key Features

- Low Cost
- Regulated Outputs
- 40mV P-P Ripple and Noise
- I / O Isolation 500VDC
- Short Circuit Protected
- MTBF > 600,000 Hours



Mechanical Configuration



All dimensions typical in inches (mm). Tolerance= +/- 0.01 (+/- 0.25)

Pin Connections

Pin	Single Output	Dual Output
1,24	+Input	+Input
2,23	NC	-Output
3,22	NC	Common
10,15	-Output	Common
11,14	+Output	+Output
12,13	-Input	-Input
NC:No Connection.		

Physical Characteristics

Case Size	31.8×20.3×10.2 mm 1.25×0.8×0.4 inches
Case Material	Black Coated Metal
Weight	14g

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Absolute Maximum Ratings

Exceeding these values can damage the module. These are not continuous operating ratings.

Parameter		Min.	Max.	Unit.
Input Surge Voltage (1000 mS)	5VDC Input Models	-0.7	7.5	VDC
	12VDC Input Models	-0.7	15	VDC
	24VDC Input Models	-0.7	30	VDC
	48VDC Input Models	-0.7	55	VDC
Internal Power Dissipation		---	3000	mW

Environmental Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating Temperature		-25	---	+71	°C
Storage Temperature		-40	---	+125	°C
Humidity		---	---	95	%
Cooling	Free-Air Convection				

Model Selection Guide

Model Number	Input voltage VDC	Output Voltage VDC	Output Current mA (Max.)	Output Current mA (Min.)	Input Current Max. Load mA (Typ.)	Input Current No Load mA (Typ.)	Reflected Ripple Current mA (Typ.)	Efficiency % (Typ.)
S2A01R	5 (4.5 ~ 5.5)	5	600	0	1000	100	100	60
S2A02R		12	250		960			62
S2A03R		15	200		960			62
S2A04R		±12	±125		1000			60
S2A05R		±15	±100		1000			60
S2A06R	12 (10.8 ~ 13.2)	5	600	0	420	50	40	60
S2A07R		12	250		400			62
S2A08R		15	200		400			62
S2A09R		±12	±125		420			60
S2A10R		±15	±100		420			60
S2A11R	24 (21.6 ~ 26.4)	5	600	0	210	25	25	60
S2A12R		12	250		195			64
S2A13R		15	200		195			64
S2A14R		±12	±125		210			60
S2A15R		±15	±100		210			60
S2A16R	48 (43.2 ~ 52.8)	5	600	0	105	15	10	60
S2A17R		12	250		100			62
S2A18R		15	200		100			62
S2A19R		±12	±125		105			60
S2A20R		±15	±100		105			60

Specifications typical at Ta=+25] , resistive load, nominal input voltage, rated output current unless otherwise noted.

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Input Specifications

Parameter	Model	Min.	Typ.	Max.	Unit
Input Voltage Range	5V Input Models	4.5	5	5.5	VDC
	12V Input Models	10.8	12	13.2	
	24V Input Models	21.6	24	26.4	
	48V Input Models	43.2	48	52.8	
Reverse Polarity Input Current	All Models	----	----	0.5	A
Short Circuit Input Power		----	----	2500	mW
Input Filter		Pi Filter			

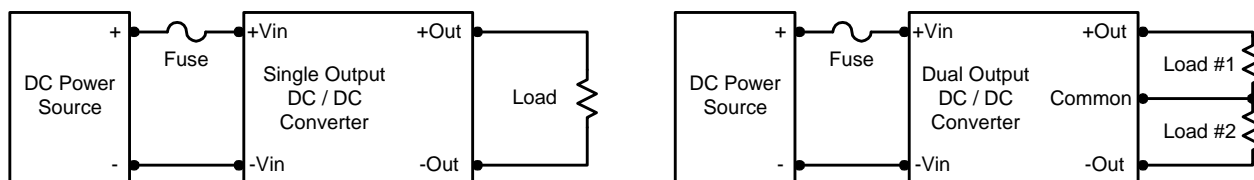
Output Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy		----	±2.0	±4.0	%
Output Voltage Balance	Dual Output Balance Load	---	±1.0	±3.0	%
Line Regulation	Vin=Min. to Max.	----	±0.2	±0.5	%
Load Regulation	Io=10% to 100%	----	±0.2	±0.5	%
Ripple & Noise (20MHz)		----	40	50	mV P-P
Ripple & Noise (20MHz)	Over Line, Load & Temp.	----	----	75	mV P-P
Ripple & Noise (20MHz)		----	----	5	mV rms.
Over Load		120	----	----	%
Transient Recovery Time	50% Load Step Change	----	----	50	uS
Transient Response Deviation		----	----	±6	%
Temperature Coefficient		----	±0.01	±0.02	%/°C
Output Short Circuit	Continuous				

General Specification

Parameter	Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	60 Seconds	500	----	----	VDC
Isolation Resistance	500VDC	1000	----	----	MΩ
Isolation Capacitance	100KHz, 1V	----	100	150	pF
Switching Frequency		40	80	----	KHz

Typical Applications



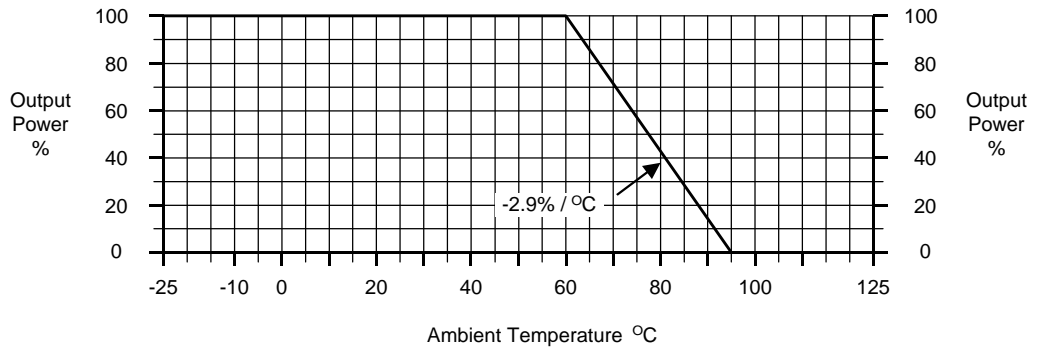
Input Fuse Selection Guide

5V Input Models	12V Input Models	24V Input Models	48V Input Models
2000mA Slow – Blow Type	1000mA Slow – Blow Type	500mA Slow – Blow Type	200mA Slow – Blow Type

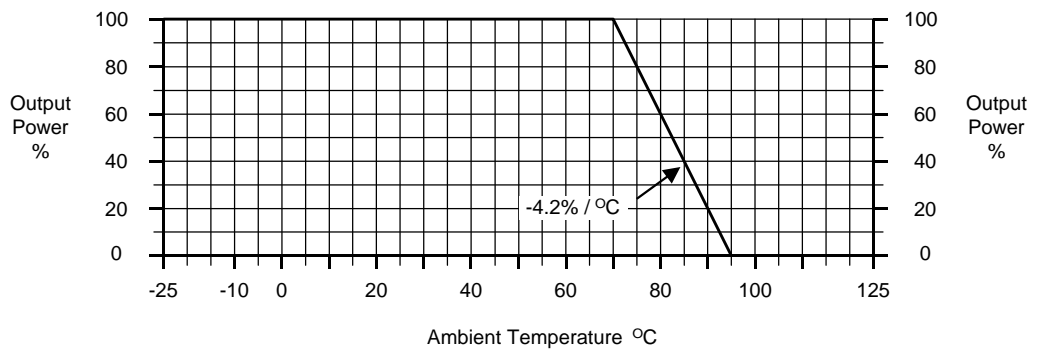
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Derating Curve

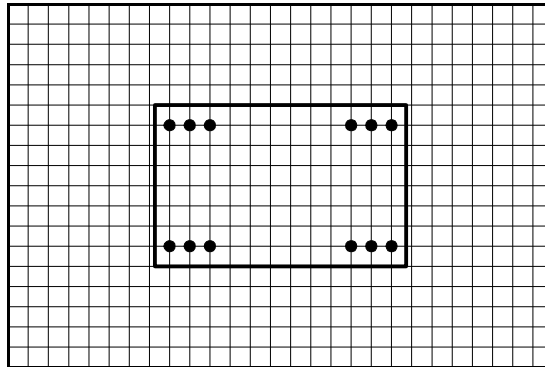
Dual Output



Single Output



Connecting Pin Patterns (2.54 mm / 0.1 inch grids)



NOTE:

1. Specifications typical at $T_a = +25^\circ\text{C}$, resistive load, nominal input voltage, rated output current unless otherwise noted.
2. Transient recovery time is measured to within 1% error band for a step change in output load of 50% to 100%.
3. Other input and output voltage may be available, Please contact factory.
4. Specifications subject to change without notice.