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SR05 series

XP Power

0.5A

DC-DC converters

The SR05 series of 1W DC-DC converters are an ideal solution for isolating voltage rails in a distributed power supply architecture such as analog, digital, data and relay circuits.

The SR05 offers high efficiency, ITE safety approvals, short circuit protection and a wide operating temperature range in a compact SIP4 design, allowing easy integration into industrial, instrumentation and technology applications.



Features

- Non-isolated 0.5A switching regulators
- Regulated single outputs 1.5 to 15VDC
- Wide input range
- SIP3 package
- Pin compatible with LM78MXX
- Continuous short-circuit protection
- Efficiency up to 97%
- -40°C to +85°C operating temperature
- 3 year warranty

Applications

Robotics
Instrumentation
Technology
Industrial
Process control

Dimensions

11.6 x 10.1 x 7.5mm (0.46" x 0.40" x 0.29")

Documentation

For further information click the link or scan the code

→ xppower.com

Models & ratings

Model number	Input voltage	Output voltage	Output current	Efficiency(1)	No load input current
SR05S1V5	4.75-34VDC	1.5VDC	500mA	64-79%	10mA
SR05S1V8	4.75-34VDC	1.8VDC	500mA	66-82%	10mA
SR05S2V5	4.75-34VDC	2.5VDC	500mA	72-87%	10mA
SR05S3V3	4.75-34VDC	3.3VDC	500mA	77-91%	10mA
SR05S05	6.50-34VDC	5.0VDC	500mA	83-94%	10mA
SR05S6V5	8.00-34VDC	6.5VDC	500mA	85-95%	10mA
SR05S7V2	9.00-34VDC	7.2VDC	500mA	86-95%	10mA
SR05S09	11.00-34VDC	9.0VDC	500mA	88-96%	10mA
SR05S12	15.00-34VDC	12.0VDC	500mA	91-96%	10mA
SR05S15	18.00-34VDC	15.0VDC	500mA	92-97%	10mA

Notes:

1. Efficiency range given for maximum Vin to minimum Vin.

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Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage range	See models and ratings table				
Input current	See models and ratings table				
Input reflected ripple		35		mA pk-pk	Through 12µH inductor, 5Hz to 20MHz
Input filter	External capacitor (see application notes)				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	See models & ratings table				
Minimum load					No minimum load required
Line regulation			±0.5	%	
Load regulation		±0.6		%	From 10% to 100% load
Setpoint accuracy		±2		%	
Turn on time	For maximum reliability, ensure turn on time is >1 ms by placing a 47µF capacitor between +Vin and GND as a minimum. Otherwise apply the suggested EMC circuit as shown.				
Ripple & noise		60		mV pk-pk	With 10% minimum load, 20MHz bandwidth
Short circuit protection	Continuous, with autorecovery				
Maximum capacitive load		220		µF	
Temperature coefficient		±0.02		%/ °C	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	See models & ratings table				
Isolation voltage	Non-isolated				
Switching frequency		330		kHz	
Package style	3 pin SIP				
Mean time between failure		>4.5		Mhrs	MIL-HDBK-217F, +25°C GB

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-40		+85	°C	
Storage temperature	-40		+125	°C	
Case temperature			+100	°C	
Humidity			95	%RH	
Cooling	Convection cooled				

Safety approvals

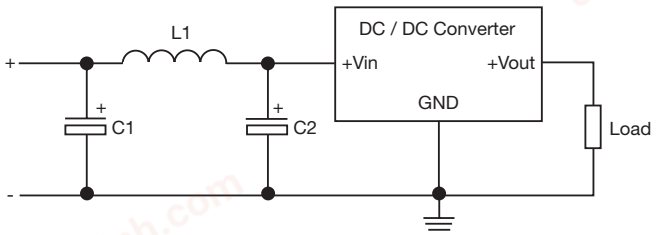
Safety Agency	Standard	Notes & Conditions
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

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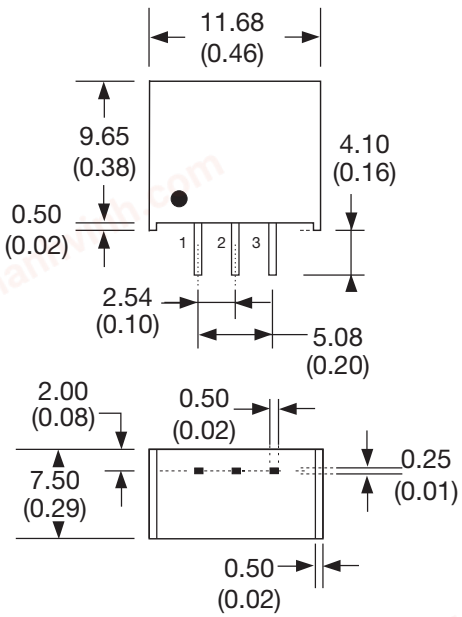
Application notes

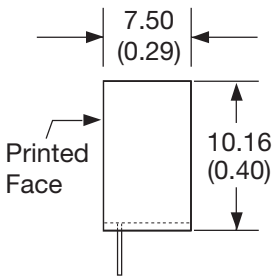
Input filter to meet Class B conducted emissions



Pin connections	
Pin	**Function**
1	+Vin
2	GND
3	+Vout

Mechanical details





C1	L1	C2
470µF, 35VDC	6.4µH	470µF, 35VDC

Notes:

1. All dimensions are in mm (inches).
2. Weight: 1.8g (0.004lbs) typical.
3. Pin pitch tolerance: ±0.35 (±0.014).
4. Case tolerance: ±0.5 (±0.02).