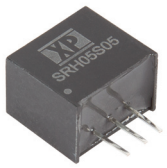
SRH05 Series

DC-DC Converter

XP Power

0.5 Amp

- 3 Pin Switching Regulator
- SIP Package
- Ultra Wide Input Range to 72 V
- -40 °C to +85 °C Operation
- Full Load to 60 °C Ambient
- Class B Conducted & Radiated Emissions
- MTBF >4.5 MHrs
- 3 Year Warranty



The SRH05 series of switching regulators provides a convenient cost effective solution to non-isolated DC-DC regulated voltage conversation applications. Operating from a wide DC input the SRH05 will step down to voltages from 3.3V to 15V DC. Features include continuous short circuit protection, high efficiency and an industrial operating temperature range.

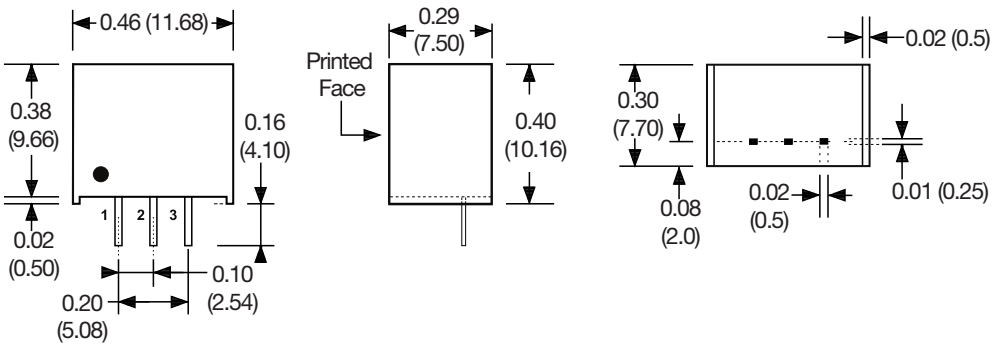
Dimensions:

SRH05:
0.46 x 0.29 x 0.4" (11.68 x 7.5 x 10.16 mm)

Models & Ratings

Input Voltage	Output Voltage	Output Current	Input Current			Efficiency		Max capacitive load	Model Number
			No Load	Full Load, min Vin	Full Load, max Vin	min Vin	max Vin		
9-72 V	3.3 V	500 mA	3 mA	225 mA	30 mA	82%	75%	100 µF	SRH05S3V3
9-72 V	5.0 V	500 mA	3 mA	315 mA	45 mA	88%	80%	100 µF	SRH05S05
9-72 V	6.5 V	500 mA	3 mA	395 mA	55 mA	91%	83%	100 µF	SRH05S6V5
14-72 V	7.2 V	500 mA	3 mA	285 mA	60 mA	91%	84%	100 µF	SRH05S7V2
14-72 V	9.0 V	500 mA	3 mA	350 mA	75 mA	92%	86%	100 µF	SRH05S09
17-72 V	12.0 V	500 mA	3 mA	375 mA	95 mA	94%	89%	100 µF	SRH05S12
21-72 V	15.0 V	400 mA	3 mA	300 mA	95 mA	95%	89%	100 µF	SRH05S15

Mechanical Details



Pin Connections	
Pin	Single
1	+Vin
2	Ground
3	+Vout

Notes

1. All dimensions are in inches (mm)
2. Weight: 0.004 lbs (2.1 g) approx.
3. Pin diameter: 0.02±0.002 (0.5±0.05)
4. Pin pitch tolerance: ±0.02 (±0.5)
5. Case tolerance: ±0.02 (±0.5)

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Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	9		72	VDC	Model dependant. See Models and Ratings table
Input Filter	Capacitor				
Input Reflected Ripple			35	mA pk-pk	Through 12 µH inductor and 47 µF capacitor
Input Surge			75	VDC for 100 ms	

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	3.3		15	VDC	See Models and Ratings table
Initial Set Accuracy			3	%	At full load
Minimum Load	10			mA	Minimum load required to meet specification. Operation at no load will not cause damage.
Line Regulation			1.0	%	
Load Regulation			0.6	%	From 10% to full load
Transient Response			±3	%	For 25% load change
Ripple & Noise			75	mV pk-pk	20 MHz bandwidth
Short Circuit Protection					Continuous, with auto recovery
Maximum Capacitive Load					See Models and Ratings table
Temperature Coefficient			0.02	%/°C	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		92		%	See models and ratings table
Isolation: Input to Output	0			VDC	Non isolated
Switching Frequency	120		800	kHz	See application notes
Mean Time Between Failure	4.5			MHrs	MIL-HDBK-217F, +25 °C GB
Weight		0.004 (2.1)		lb (g)	
Soldering temp			260	°C	Waveflow. 0.05" (1.5mm) from case, 10 seconds max.
Case material	Non-conductive black plastic UL94V-0 rated				
Pin material	Solder coated C5191R-H				
Potting material	Silicon UL94V-0 rated				

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+85	°C	Derate from 100% load at +60 °C to 40% at +85 °C
Storage Temperature	-40		+125	°C	
Case Temperature			+100	°C	
Humidity			95	%RH	Non-condensing
Cooling					Natural convection

EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55032	Class B	See Application Note
Radiated	EN55032	Class B	See Application Note

EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD Immunity	EN61000-4-2	±6 kV/±8 kV	A	Contact discharge/Air discharge
Radiated Immunity	EN61000-4-3	10 Vrms	A	
EFT/Burst	EN61000-4-4	±2.0 kV	A	See Application Note
Surges	EN61000-4-5	±1.0 kV	A	See Application Note
Conducted Immunity	EN61000-4-6	10 V rms	A	
Magnetic Fields	EN61000-4-8	1 A/m	A	

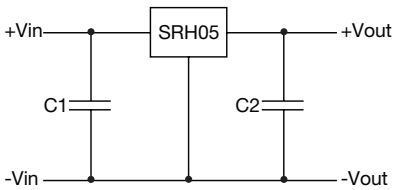
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Safety Approvals

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

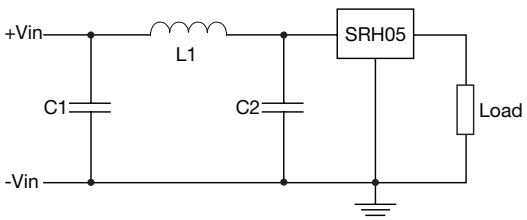
Application Note

Standard Application



C1 = 3.3 µF/100 V required if input voltage is above 50 VDC
C2 = 100 µF (optional) to improve transient response

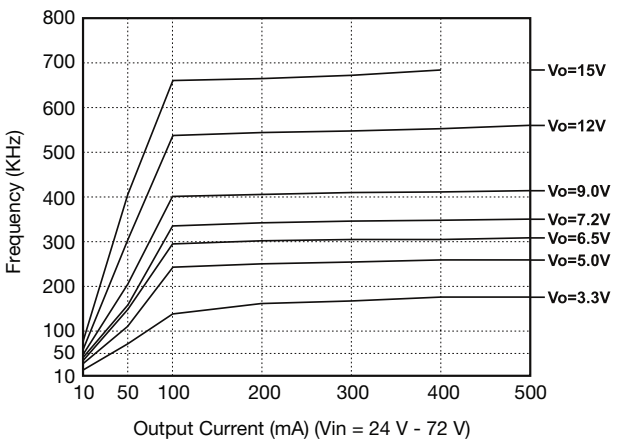
EMI & Surge/EFT Filter



C1 = 220 µF/100 V
L1 = 12 µH
C2 = 220µF/100 V

C1, C2 and L1 should be placed as close to the SRH05 as possible

Switching Frequency vs Load



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