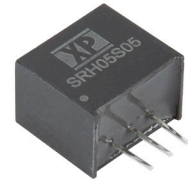


0.5A



The SRH05 series ultra-wide input voltage switching regulators are pin compatible and ideally suited to replacing 78XX positive linear regulators. With efficiency up to 95%, very little energy is wasted as heat so there is no requirement for a heatsink, giving significant space saving and providing more flexibility for the PCB design.

These non-isolated DC-DC converters offer a simple step-down voltage conversion and good line/load regulation, low ripple & noise with a low quiescent current (no load) of 5mA. The SRH05 provide a low-cost point of load (POL) solution for: 24VDC or 48VDC Distributed supply systems; Sensors; Robotics; Telecommunications; Test & measurement; Portable & battery-operated equipment.



Features

- ▶ Non-isolated 0.5A switching regulator
- ▶ Regulated single outputs 3.3 to 15VDC
- ▶ Input range up to 72VDC
- ▶ SIP3 package
- ▶ Short circuit protection
- ▶ Class B conducted & radiated emissions
- ▶ -40°C to +85°C operation
- ▶ Full load to +60°C ambient
- ▶ 3 year warranty

Applications



Robotics



Instrumentation



Technology



Industrial



Process control

Dimensions

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

Documentation

For further information click the link or scan the code

[→ xppower.com](https://www.xppower.com)


Models & ratings

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

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 12μH inductor and 47μF capacitor
Input surge			75	VDC for 100ms	

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	20MHz 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	330	800	kHz	See application notes
Mean time between failure	4.5			Mhrs	MIL-HDBK-217F, +25°C GB
Weight		2.1 (0.004)		g (lb)	
Soldering temp			260	°C	Waveflow. 1.5mm (0.05") 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	
Cooling	Natural convection				

Safety approvals

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

EMC: emissions

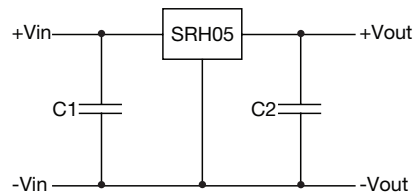
Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55032	Class B	See application notes
Radiated	EN55032	Class B	

Emissions - immunity

Phenomenon	Standard	Test level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2	±6kV/±8kV	A	Contact discharge/air discharge
Radiated immunity	EN61000-4-3	10Vrms	A	
EFT/burst	EN61000-4-4	±2.0kV	A	See application notes
Surge	EN61000-4-5	±1.0kV	A	See application notes
Conducted	EN61000-4-6	10Vrms	A	
Magnetic fields	EN61000-4-8	1A/m	A	

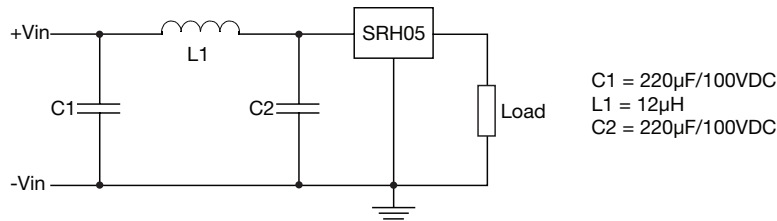
Application notes

Standard application



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

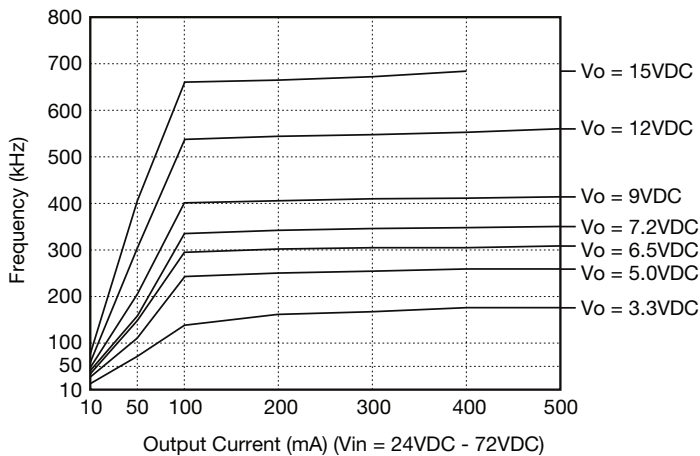
EMI & surge/EFT filter



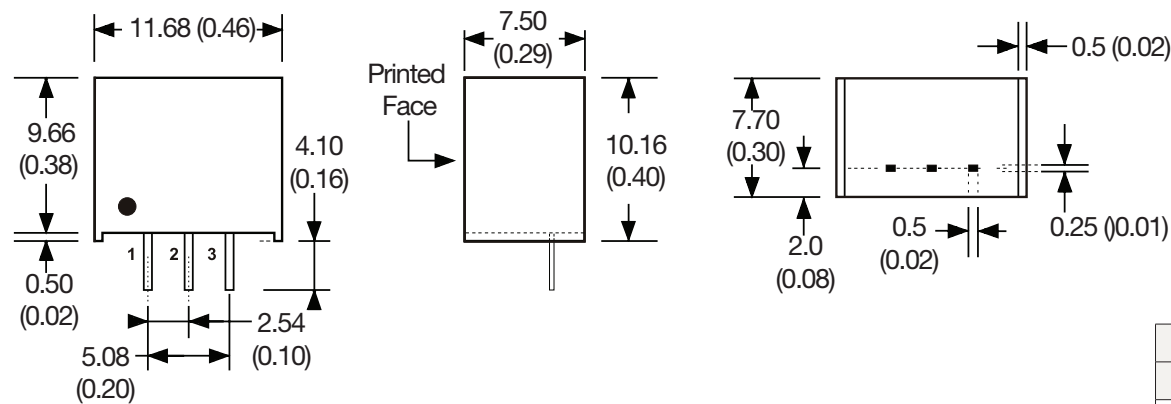
C1 = 220µF/100VDC
L1 = 12µH
C2 = 220µF/100VDC

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

Standard application



Mechanical details



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

Notes:

1. All dimensions are in mm (inches).
2. Weight: 2.1g (0.004lbs) typical.
3. Pin diameter 0.5 ±0.05 (0.02 ±0.002)
4. Pin pitch tolerance: ±0.35 (±0.014).
5. Case tolerance: ±0.5 (±0.02).