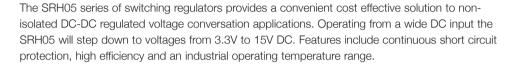
## **SRH05 Series**

## **DC-DC Converter**



## 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





#### Dimensions:

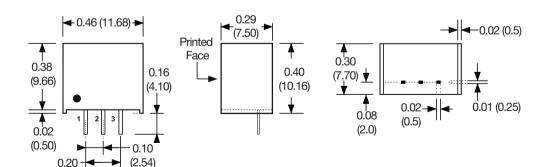
#### SRH05:

 $0.46 \times 0.29 \times 0.4$ " (11.68 x 7.5 x 10.16 mm)

## **Models & Ratings**

Input	Output Out		Output	Outpu	+	Input Curren	it	Effici	iency	Max capacitive	
Voltage	Voltage	Curren		Full Load, min Vin	Full Load, max Vin	min Vin	max Vin	load	Model Number		
9-72 V	3.3 V	500 mA	A 3 mA	225 mA	30 mA	82%	75%	100 μF	SRH05S3V3		
9-72 V	5.0 V	500 m/	A 3 mA	315 mA	45 mA	88%	80%	100 μF	SRH05S05		
9-72 V	6.5 V	500 mA	A 3 mA	395 mA	55 mA	91%	83%	100 μF	SRH05S6V5		
14-72 V	7.2 V	500 m/	3 mA	285 mA	60 mA	91%	84%	100 μF	SRH05S7V2		
14-72 V	9.0 V	500 m/	A 3 mA	350 mA	75 mA	92%	86%	100 μF	SRH05S09		
17-72 V	12.0 V	500 m/	3 mA	375 mA	95 mA	94%	89%	100 μF	SRH05S12		
21-72 V	15.0 V	400 m/	A 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)

(5.08)

- 4. Pin pitch tolerance:  $\pm 0.02$  ( $\pm 0.5$ )
- 5. Case tolerance: ±0.02 (±0.5)

# **SRH05 Series**





•					
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 (	Solder coated C5191R-H						
Potting material	Silicon UL94V-0	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	А	Contact discharge/Air discharge
Radiated Immunity	EN61000-4-3	10 Vrms	А	
EFT/Burst	EN61000-4-4	±2.0 kV	А	See Application Note
Surges	EN61000-4-5	±1.0 kV	А	See Application Note
Conducted Immunity	EN61000-4-6	10 V rms	A	
Magnetic Fields	EN61000-4-8	1 A/m	A	

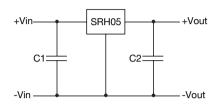


## **Safety Approvals**

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

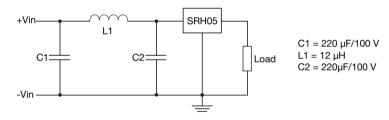
## **Application Note**

#### **Standard Application**



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

#### **EMI & Surge/EFT Filter**



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

#### **Switching Frequency vs Load**

