

The SR10 series switching regulators are pin compatible, efficient, replacement for the 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.

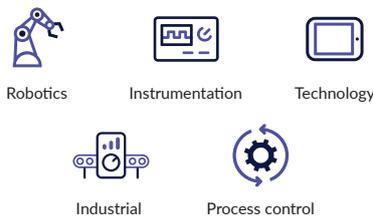
These non-isolated DC-DC converters offer a simple step-down voltage conversion and good line/load regulation, low ripple & noise with a low quiescent current (no load) of 10mA. The SR10 provide a low-cost point of load (PoL) solution for portable & battery-operated equipment and a multitude of other applications.



Features

- ▶ Non-isolated 0.5A switching regulators
- ▶ Regulated single outputs 1.5 to 15VDC
- ▶ Wide input range
- ▶ SIP3 package
- ▶ Pin compatible with LM78XX
- ▶ Continuous short-circuit protection
- ▶ Efficiency up to 97%
- ▶ -40°C to +60°C operating temperature
- ▶ 3 year warranty

Applications



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
SR10S1V5	4.75-18VDC	1.5VDC	1000mA	71-78%	15mA
SR10S1V8	4.75-18VDC	1.8VDC	1000mA	75-82%	15mA
SR10S2V5	4.75-18VDC	2.5VDC	1000mA	80-87%	15mA
SR10S3V3	4.75-18VDC	3.3VDC	1000mA	83-90%	15mA
SR10S05	6.50-18VDC	5.0VDC	1000mA	88-93%	15mA

Notes:

1. Efficiency range given for maximum V_{in} to minimum V_{in} .

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		40		mA pk-pk	Through 12 μ H 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 47 μ F 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		μ F	
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

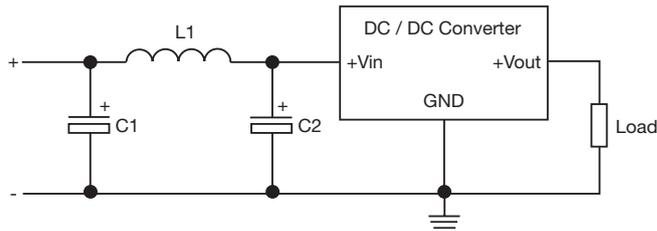
Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-40		+60	°C	
Storage temperature	-40		+125	°C	
Case temperature			+100	°C	
Humidity			95	%RH	
Cooling	Convection cooled				

Safety approvals

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

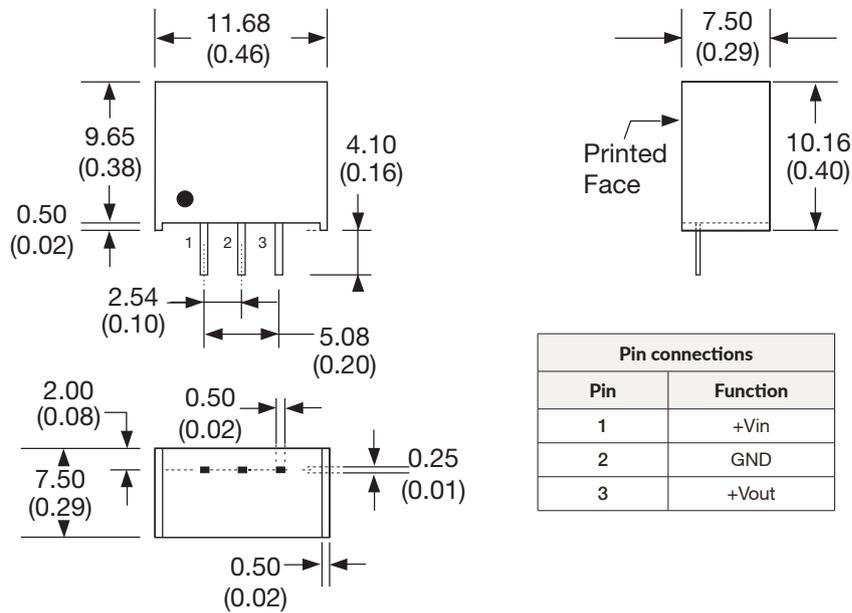
Application notes

Input filter to meet Class B conducted emissions



C1	L1	C2
470 μ F, 35VDC	6.4 μ H	470 μ F, 35VDC

Mechanical details



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

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).