

RSVR-78

- 3 Pin SIL
- wide Input Range
- Step-down switching
- Full SMD Technology
- Continuous Short Circuit Protection
- Pin-out compatible with LM78XX three terminals positive Regulator
- Efficiency up to 94%
- -40°C to +60°C Operating Temperature Range



RoHS

OUTPUT SPECIFICATION	ENVIRONMENTAL SPECIFICATION
Voltage accuracy: $\pm 2\%$	Operating Temperature range: -40°C ~ +60°C
Line regulation: $\pm 0.5\%$	Maximum Case Temperature: 100°C
LOAD REGULATION: $\pm 0.6\%$ max. (from 10-100% load)	Storage Temperature: -40°C ~ +125°C
Short Circuit Protection: Indefinite (Automatic Recovery)	Cooling: Nature Convection
Ripple noise (20Mhz bandwidth): 60mV pk-pk	
Temperature coefficient: $\pm 0.02\%/^{\circ}\text{C}$	
Capacitor load: See table	
INPUT SPECIFICATIONS	PHYSICAL SPECIFICATIONS:
Voltage Range: See table	Case Material: Non-conductive Black Plastic (UL94V-0 rated)
Start up Time: /	PIN Material: C5191R-H Solder-coated
Max. Input Current: See table	Weight Case- Sip: 2.0g
No-Load/Full-Load Input Current: See table	Potting Material: Epoxy (UL94V-0 rated)
Input Filter: Capacitors	Weight Case-DIP: /
Input Reflected Ripple Current: 40mA pk-pk typ.	Dimmension SIP: 0.46 x 0.29 x 0.40"
	Dimmension DIP: /
GENERAL SPECIFICATIONS	ABSOLUTE MAXIMUM RATINGS (6)
Efficiency: See table	Input Surge Voltage (100ms): 20Vdc max.
Switching Frequency: 330kHz typ.	Soldering Temperature: 260°C max.
Humidity: 95% rel H	
Reliability Calculated MTBF: >4.3Mhrs (MIL-HDBK-217 f)	
	EMC SPECIFICATIONS (2)
	Radiated-/Conducted Emissions: EN55022 Class B see EMI Filter (4)
	ESD: IEC 61000-4-2 Perf.Criteria A
	RS: IEC 61000-4-3 Perf.Criteria A
	EFT: IEC 61000-4-4 Perf.Criteria A (5)
	CS: IEC 61000-4-6 Perf.Criteria A
	PFMF: IEC 61000-4-8 Perf.Criteria A

All specifications typical at Ta = 25°C, nominal volatge and full load unless otherwise specified.

- 1) Ripple/Noise measured with 20MHz bandwidth. Load condition : 10% ~ 100%, output noise arise when load is under 10%.
- 2) Tested by minimal Vin and constant resistive load.
- 3) Measured Input reflected ripple current with a simulated source inductance of 12μH.
- 4) Input filter components (C1, C2, L) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.
- 5) An external filter capacitor is required if the module has to meet IEC61000-4-4. Suggested filter capacitor: Nippon chemi-con KY series, 220μF/100V.
- 6) Do not operate the unit(s) exceeding the absolute maximum rating, over rating causes damage to the units.
- 7) Operation under no-load conditions will not damage these devices, however they may not meet all listed specifications.

RSVR-78 Series 1A Output Current, Non-Isolated DC/DC converter

PART NUMBER STRUCTURE

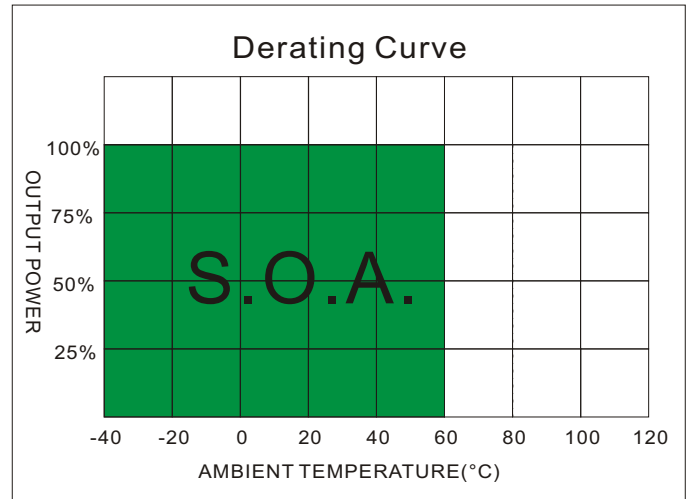
RSVR-78 XXX - 1.0

Series Name

Output Current - 1A

Output Voltage

1R5 - 1.5V
1R8 - 1.8V
2R5 - 2.5V
3R3 - 3.3V
05 - 5V



MODEL SELECTION GUIDE

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current			OUTPUT Voltage (Vdc)	OUTPUT Current		EFFICIENCY		Capacitor Load @FL (µF, max.)
		No-Load (mA, max.)	Full Load (mA, typ.)			Min. Load (mA)	Full Load (mA)	Full Load (% , typ.)		
			@Min. Vin	@Max. Vin				@Min. Vin	@Max. Vin	
RSVR-781R5-1	4.75 - 18	10	416	119	1.5	100	1000	78	72	220
RSVR-781R8-1.0	4.75 - 18	10	474	135	1.8	100	1000	82	76	220
RSVR-782R5-1.0	4.75 - 18	10	619	176	2.5	100	1000	87	81	220
RSVR-783R3-1.0	4.75 - 18	10	790	221	3.3	100	1000	90	85	220
RSVR-7805-1.0	6.5 - 18	10	836	319	5.0	100	1000	94	89	220

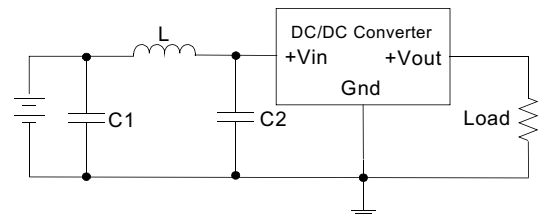
EMC COUNTERMEASURES

EMC Countermeasures

Input filter components (C1, C2, L) are used to help meet conducted emissions requirement for the module.

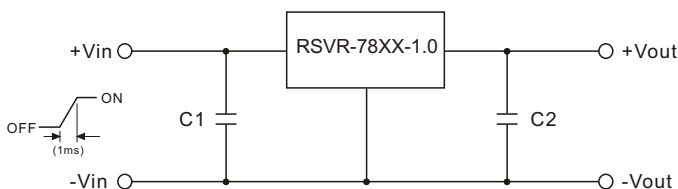
These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise. An external filter capacitor is required if the module has to meet IEC61000-4-4.

The filter capacitor RSG suggest: Nippon chemi-con KY series, 220µF/100V.



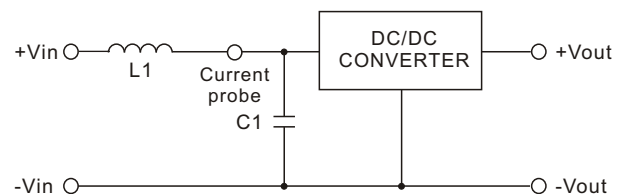
	C1	L	C2
RSVR-78XX-1.0	470µF,35V	6.4µH	470µF,35V

STANDARD APPLICATION CIRCUIT



1. To protect the converter during power-up, use soft start Vin and C1=47µF
2. C2=100µF(Optional)

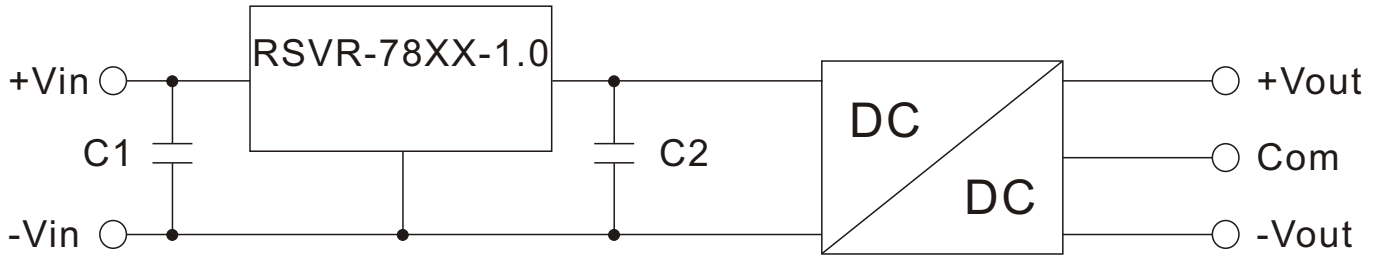
TEST CONFIGURATIONS



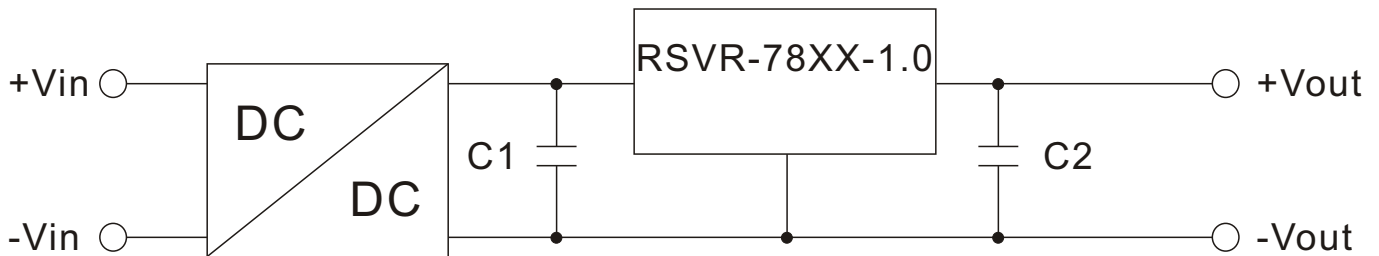
Input reflected ripple current is measured through a source inductor L1(12µH) and a source capacitor C1=47µF at nominal input and full load.

The models listed above is just for standard type. If you need the special specification product, please e-mail us at: info@rsg-electronic.de

APPLICATION EXAMPLES

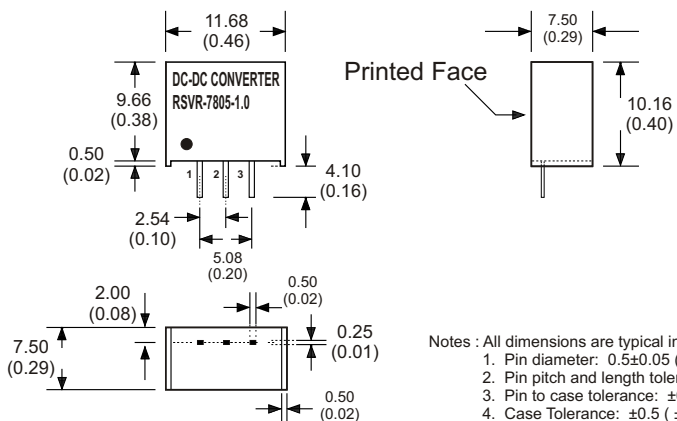


- Isolated dual outputs
- Wide input range 4.75V to 18V
- C1: Optional
- C2: Required (further decoupling filtering may be necessary between the two converters)



- High isolation voltage
- Improved loading / line regulation
- C1: Required (further decoupling filtering may be necessary between the two converters)
- C2: Optional
- Wide input voltage range
- Point-of-load Architecture

MECHANICAL SPECIFICATIONS



PIN CONNECTIONS	
PIN NUMBER	SINGLE
1	+V Input
2	GND
3	+V Output

Notes : All dimensions are typical in millimeters (inches).
 1. Pin diameter: 0.5±0.05 (0.02±0.002)
 2. Pin pitch and length tolerance: ±0.35 (±0.014)
 3. Pin to case tolerance: ±0.5 (±0.02)
 4. Case Tolerance: ±0.5 (±0.02)