

RSVR-78M

- 3 Pin SIL
- wide Input Range
- Step-down switching
- Full SMD Technology
- Continuous Short Circuit Protection
- Pin-out compatible with LM78MXX three terminals positive Regulator
- Efficiency up to 97%
- -40°C to +85°C Operating Temperature Range



RoHS

OUTPUT SPECIFICATION	ENVIRONMENTAL SPECIFICATION
Voltage accuracy: ±2%	Operating Temperature range: -40°C ~+85°C (see Derating Curve)
Line regulation: ±0.5%	Maximum Case Temperature: 100°C
LOAD REGULATION: ±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: ±0.02%/°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: 0.5mm Alloy42 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 : 35mA 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 Voltage: 34Vdc max.
Switching Frequency: 330kHz typ.	Soldering Temperature: 260°C max.
Humidity: 95% rel H	
Reliability Calculated MTBF : >4.5Mhrs (MIL-HDBK-217 f)	
	EMC SPECIFICATIONS
	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-78M Series 0.5A Output Current, Non-Isolated DC/DC converter

PART NUMBER STRUCTURE

RSVR-78M XXX

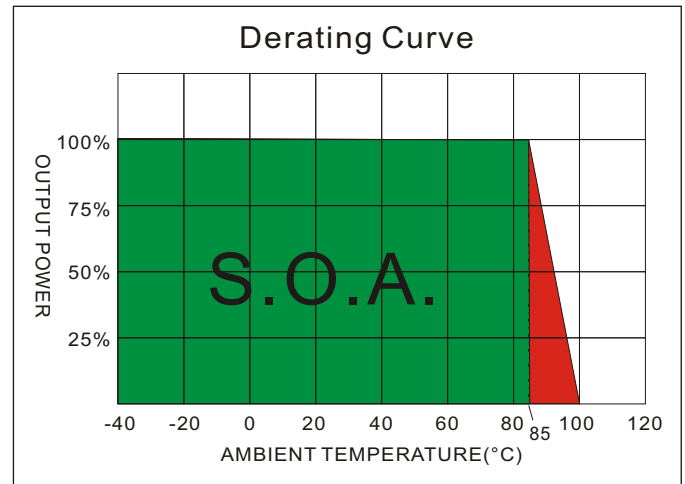
Series Name

For 78M Series Regulator I.C.

Output Current - 0.5A

Output Voltage

1R5 - 1.5V
1R8 - 1.8V
2R5 - 2.5V
3R3 - 3.3V
05 - 5V
6R5 - 6.5V
7R2 - 7.2V
09 - 9V
12 - 12V
15 - 15V



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-78M1R5	4.75 - 30	8	202	38	1.5	50	500	78	65	220
RSVR-78M1R8	4.75 - 34	8	231	38	1.8	50	500	82	70	220
RSVR-78M2R5	4.75 - 34	8	302	48	2.5	50	500	87	76	220
RSVR-78M3R3	4.75 - 34	8	381	60	3.3	50	500	91	81	220
RSVR-78M05	6.5 - 34	8	409	86	5.0	50	500	94	85	220
RSVR-78M6R5	8 - 34	8	427	108	6.5	50	500	95	88	220
RSVR-78M7R2	9 - 34	8	421	118	7.2	50	500	95	89	220
RSVR-78M09	11 - 34	8	426	144	9.0	50	500	96	92	220
RSVR-78M12	15 - 34	8	412	188	12	50	500	97	94	220
RSVR-78M15	18 - 34	8	430	232	15	50	500	97	95	220

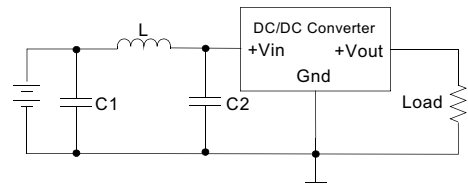
EMC COUNTERMEASURES

EMC Countermeasures

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

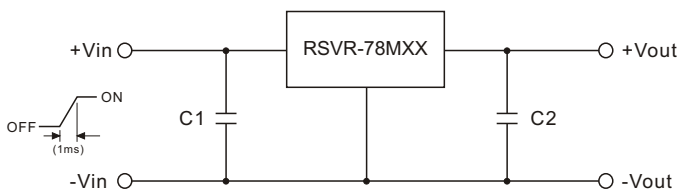
These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise. An external filter capacitor is required if the module has to meet IEC61000-4-4.

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



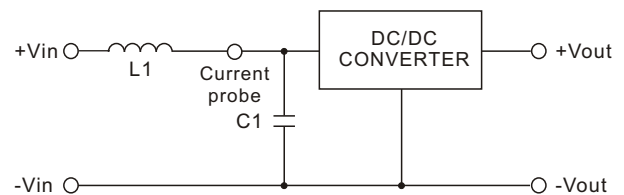
	C1	L	C2
RSVR-78MXX	470µF,35V	6.4µH	470µF,35V

STANDARD APPLICATION CIRCUIT



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

TEST CONFIGURATIONS

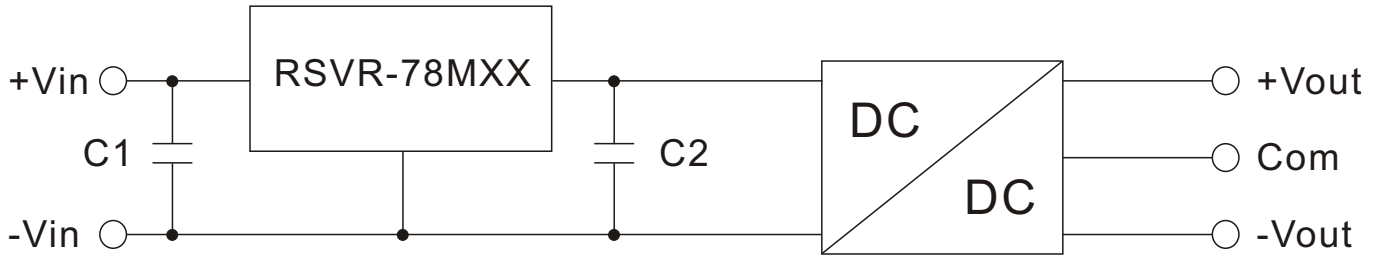


Input reflected ripple current is measured through a source inductor L1(12µH) and a source capacitor C1=47µF at nominal input and full load.

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

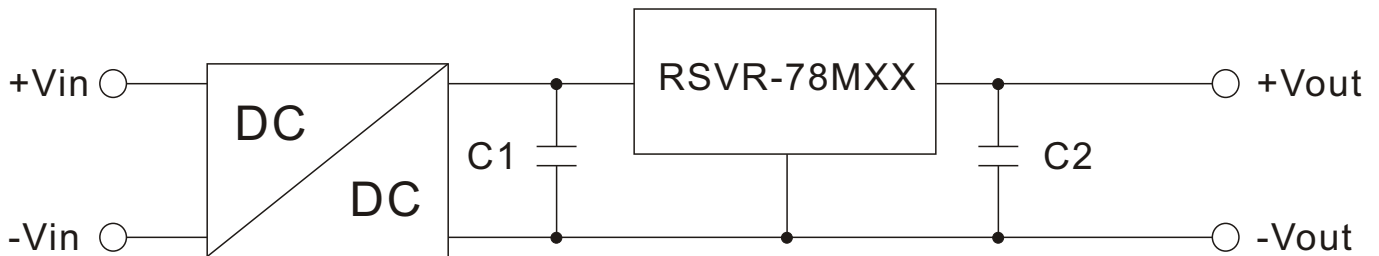
APPLICATION EXAMPLES

High efficiency, isolated, dual unregulated outputs, one economic way to build up isolated dual output



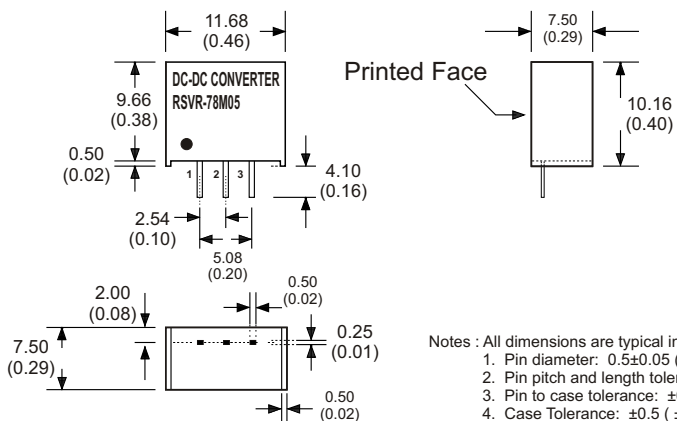
- Isolated dual outputs
- Wide input range 4.75V to 34V
- C1: Optional
- C2: Required (further decoupling filtering may be necessary between the two converters)

Isolated (up to 6KV), wide input range regulated output



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

MECHANICAL SPECIFICATIONS



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)

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