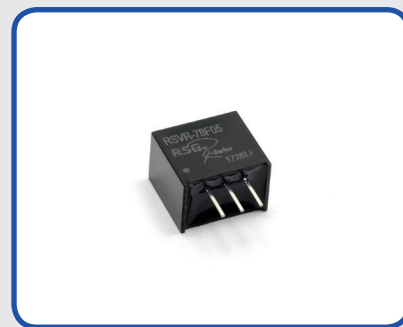


- 3 Pin SIL Package
- Wide Input Range
- Step-down switching
- Full SMD Technology
- Efficiency up to 96%
- Operating Temperature Range -40°C ~ +85°C
- Continuous Short Circuit Protection
- Pin-out compatible with LM78MXX three terminals positive Regulator
- Non Conductive Black Plastic Case

Picture similar



RoHS

Output Specifications	
Voltage Accuracy	±1.5 ~ 2% typ., ±3 ~ 4% max.
Output Voltage Adjustability (Trim)	–
Maximum Output Current	1000mA or -500mA max.
Line Regulation	±0.2% typ., ±0.4% max.
Load Regulation	from 10% to 100% Load: ±0.4% typ., ±0.8% max.
Short Circuit Protection	Continuous, self-recovery
Ripple & Noise (20 MHz bandwidth)	25mV typ., 75mV pk-pk max.
Temperature Coefficient	±0.03%/°C
Transient Recovery Time	1ms max.
Transient Response Deviation	±60mV typ., ±200mV max.

Input Specifications	
Voltage Range	See table
Start-up Time	–
No-Load/Full-Load Input Current	See table
Input Filter	C/L (see filter details on following pages)
Input Reflected Ripple Current	–
Remote ON	–
Remote OFF	–
OFF Idle Current	–
Surge Voltage (100 ms) <sup>1)</sup>	

General Specifications	
Switching Frequency	520kHz typ.
Humidity	95% rel H
Reliability Calculated MTBF	>2.0Mhrs (MIL-HDBK-217 f)
Safety Standard(s)	IEC/EN62368-1 (designed to meet)

Environmental Specifications	
Operating Temperature Range	-40°C ~ +85°C (see Derating Curve)
Maximum Case Temperature	–
Storage Temperature	-55°C ~ +125°C
Cooling	Natural Convection
Soldering Profile and Peak Temperature	Wave Flow: 260°C (1.5 mm from case), 10s, max.

Physical Specifications	
Case Material	Black flame-retardant, heat-resistant plastic (UL94 V-O)
Pin Material	–
Potting Material	–
Weight	1.9g typ.
Case Dimensions	0.46" x 0.31" x 0.41"

EMC Specifications	
Radiated / Conducted Emissions	EN55032 Class B see EMI Filter
ESD	IEC 61000-4-2 Perf.Criteria B
Rad. RF	IEC 61000-4-3 Perf.Criteria A
EFT	IEC 61000-4-4 Perf.Criteria B
Surge	IEC 61000-4-5 Perf.Criteria B
Cond. RF	IEC 61000-4-6 Perf.Criteria A
PFMF	–

<sup>1)</sup> These are stress ratings; exposure of devices to any of these conditions may adversely affect long-term reliability.

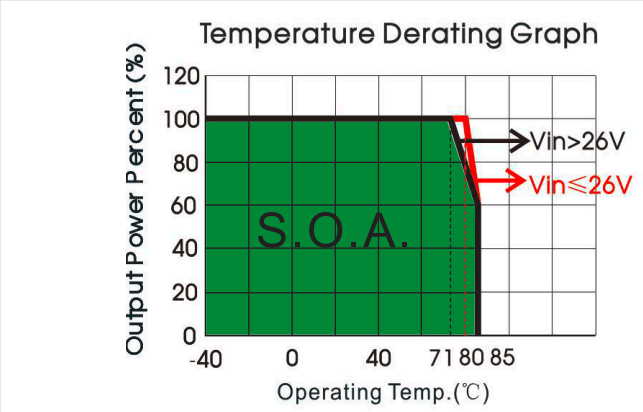
All specifications typical at T<sub>A</sub> = 25 °C, nominal input voltage and full load, unless otherwise specified.

The information and specification contained in this data sheet are believed to be correct at time of publication. However RSG accepts no responsibility for consequences arising from printing errors or inaccuracies. [Specifications are subject to change without notice.](#)

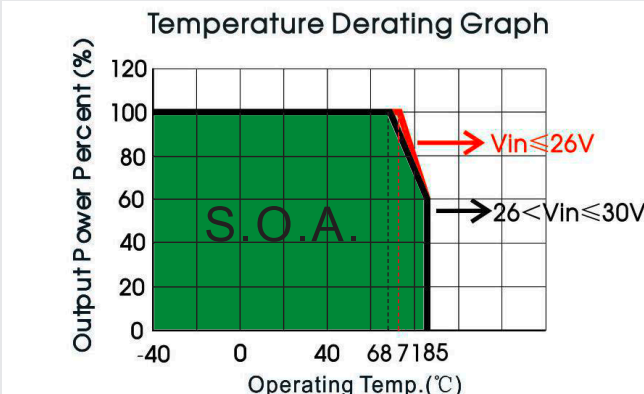
Number structure RSVR

RSVR	–	78	F	05	D	(v3)
Name /package	Compatibility	Usage / Amps	Voltage out	Int. Code		
RSVR = SIL3	78 = LM78xx	M = Mid-Amp (0.5 A) F = Full-Amp (1.0 A) D = Double-Amp (2.0 A) W = Wide-Input (0.5 A)	00 = 1.5 V 01 = 1.8 V 02 = 2.5 V ... 15 = 15 V	Logistics Code		

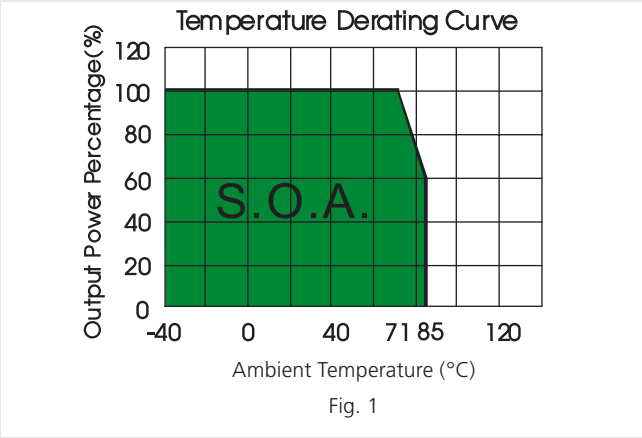
3.3V/5V output



9V/12V/15V output



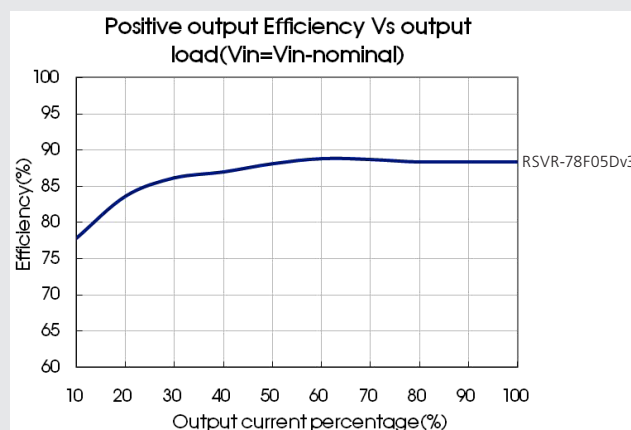
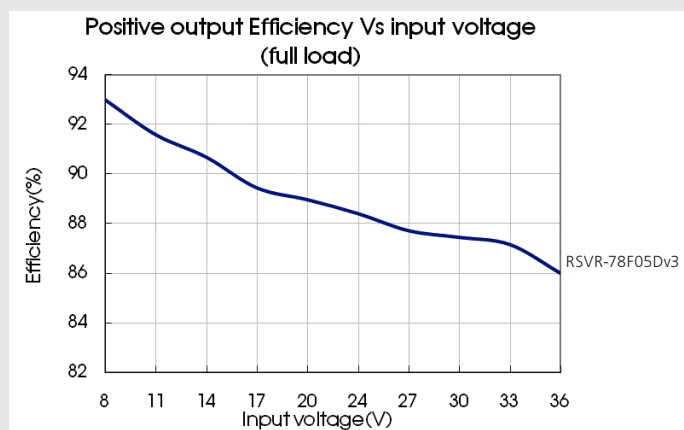
Negative output



Model Selection Guide

Model Number	Input Voltage (VDC)	Output		Efficiency (%/Typ.)	Max. Capacitive Load (µF)
	Nominal (Range)	Output Voltage (VDC)	Max. Output Current (mA)	(Min. Vin)/ (Max. Vin) @ Full Load	
RSVR-78F03Dv3	24 (6-36)	3.3	1000	90/80	680
RSVR-78F05Dv3	24 (8-36)	5	1000	93/85	680
	12 (8-27)	-5	-500	85/81	330
RSVR-78F09Dv3	24 (13-36)	9	1000	94/89	680
RSVR-78F12Dv3	24 (16-36)	12	1000	95/92	680
	12 (8-20)	-12	-300	88/87	330
RSVR-78F15Dv3	24 (20-36)	15	1000	96/93	680
	12 (8-18)	-15	-300	87/88	330

Note:For input voltage higher than 30 VDC, a 22µF/50V input capacitor is required.



## Typical Application Circuit

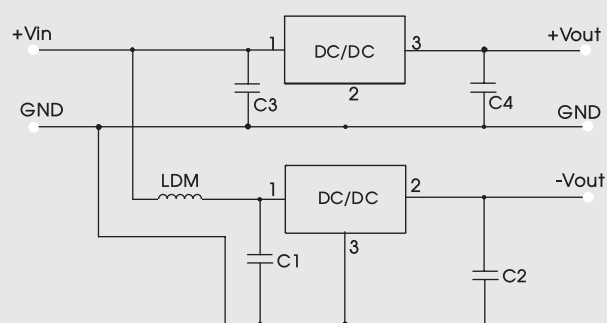
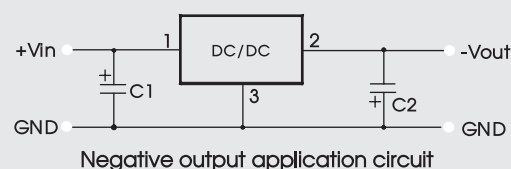
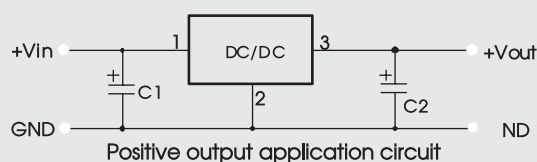


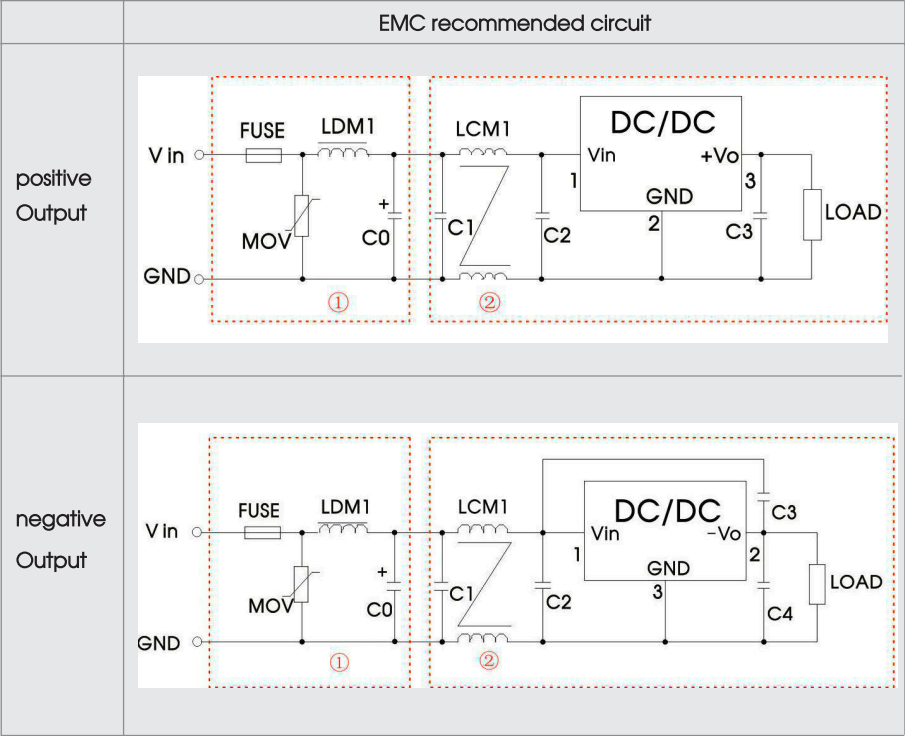
Fig. 3 Positive and Negative output parallelling application circuit

Part No.	C1/C3 (ceramic capacitor)	C2/C4 (ceramic capacitor)
RSVR-78F03Dv3	10μF/50V	22μF/10V
RSVR-78F05Dv3		22μF/10V
RSVR-78F09Dv3		22μF/16V
RSVR-78F12Dv3		22μF/25V
RSVR-78F15Dv3		22μF/25V

### Note:

1. C1 and C2 (C3 and C4) are required and should be connected close to the pin terminal of the module.
2. The capacitance of C1 and C2 (C3 and C4) refer to Sheet 1.
3. To reduce the output ripple furtherly, C2 and C4 can be increased properly if required, tantalum capacitor and aluminum electrolytic capacitor of low ESR may also suffice.
4. When the products used as the circuit like figure 3, an inductor named as LDM up to 10μH is recommended in the circuit to reduce the mutual interference.
5. Cannot be used in parallel to enlarge the power for output and hot swap.

EMC solution-recommended circuit



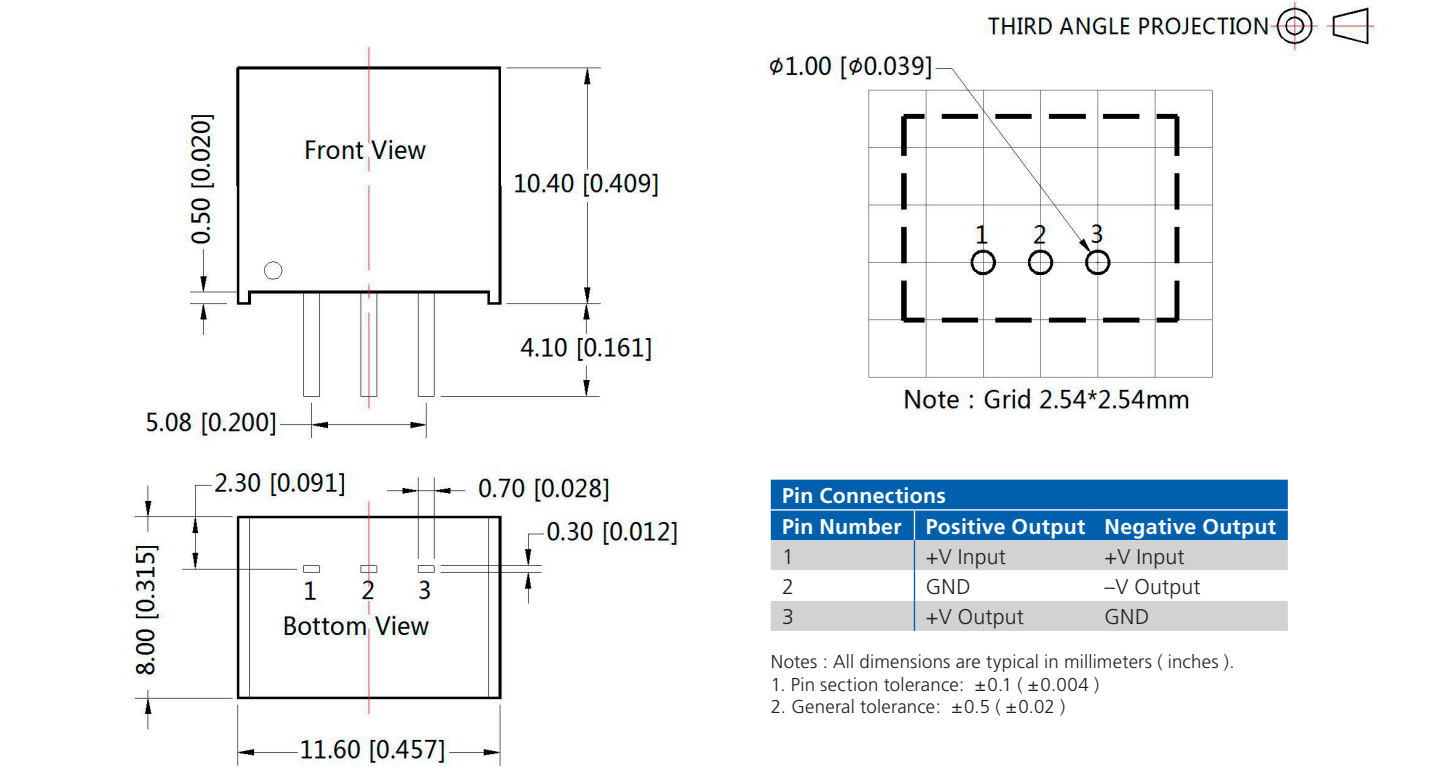
Parameter description

FUSE	According to the customer actual input current choice
MOV	20D470K
LDM1	82μH
C0	680μF /50V
LCM1	4.7mH
C1/C2	4.7μF /50V
C3	Refer to the Cout in Sheet 1

FUSE	According to the customer actual input current choice
MOV	20D470K
LDM1	82μH
C0	680μF /50V
LCM1	4.7mH
C1/C3/C4	4.7μF /50V
C2	10μF /50V

Fig. 4 EMC recommended circuit  
Note: Part ① in the Fig. 4 is for EMS test, part ② is for EMI filtering; parts ① and ② can be added based on actual requirement.

Mechanical Specifications



Notes

- 1. The maximum capacitive load offered were tested at input voltage range and full load;
- 2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25 , humidity<75%RH with nominal input voltage and rated output load.