

RS7-S10/D10

- 7 Pin SIL Package
- 6000VDC High Isolation
- Physical Clearance of Isolation Barrier 2.5mm
- Long Term Short Circuit Protection
- Low Ripple and Noise
- Efficiency up to 81%
- Operating Temperature Range -40° ~ +85°C
- Non Conductive Black Plastic Case



OUTPUT SPECIFICATION

Voltage accuracy: ±3%

Line regulation: 1.2%/ per 1% Vin Change max.

LOAD REGULATION: from 10% to 100% Load: ±10%

Short Circuit Protection : Indefinite (Automatic Recovery)

Ripple noise (20Mhz bandwidth): 200mV pk-pk

Temperature coefficient: ±0.03%/°C

Capacitor load: See table

INPUT SPECIFICATIONS

Voltage Range: ±10% max.

Max. Input Current: See table

No-Load/Full-Load Input Current: See table

Input Filter: Capacitors

Input Reflected Ripple Current : 20mA rms

(rms thru 12uH inductor , 5Hz to 20MHz)

GENERAL SPECIFICATIONS

Efficiency: See table

I/O Isolation Voltage (60sec): 6000VDC

I/O Isolation Capacitance: 10pF typ.

I/O Isolation Resistance: 1000M Ohm, min

Switching Frequency: 20kHz - 50kHz

Humidity: 95% rel H

Reliability Calculated MTBF : >2.39Mhrs
(MIL-HDBK-217 f)

Safety Standard: (designed to meet): IEC 60950-1

ENVIRONMENTAL SPECIFICATION

Operating Temperature range: -40°C ~+85°C (see Derating Curve)

Maximum Case Temperature: 100°C

Storage Temperature : -40°C ~+125°C

Cooling : Nature Convection

PHYSICAL SPECIFICATIONS:

Case Material: Epoxy encapsulated (UL94V-0 rated)

Clearance Distance Inp./Outp. 2.5mm

PIN Material: 0.5mm Alloy42 Solder-coated

Weight Case- Sip: 4.2g, typ.

Potting Material: Epoxy (UL94V-0 rated)

Dimmension SIP: 0.77 x 0.39 x 0.49"

ABSOLUTE MAXIMUM RATINGS (1)

Input Surge Voltage (100ms)/

5V Models: 7VDC max

12V Models: 15VDC max

15V Models: 18VDC max

24V Models: 28VDC max

Soldering Temperature: 260°C max.

EMC SPECIFICATIONS (2)

Radiated-/Conducted Emissions: EN55022 Class B see EMI Filter

ESD: IEC 61000-4-2 Perf.Criteria A

RS: IEC 61000-4-3 Perf.Criteria A

EFT: IEC 61000-4-4 Perf.Criteria A

SURGE: IEC 61000-4-5 Perf.Criteria A

CS: IEC 61000-4-6 Perf.Criteria A

PFMF IEC 61000-4-8 Perf.Criteria A

1) These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.

2) (1.5mm from case 10sec Max.)

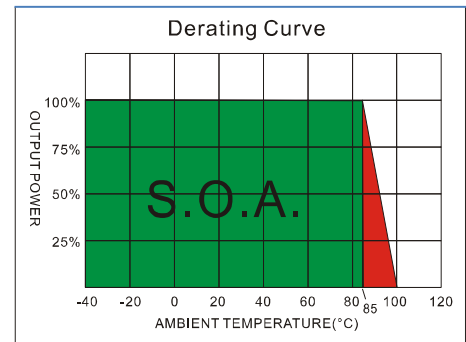
3) All specifications typical at TA= 25°C, nominal input voltage and full load unless otherwise specified.

4) 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

RS7 -	XX	XX	X	XX	A	X
Name/Package RS7=SIL7	Input 05=5.0V 09=9.0V 12=12V 15=15V 24=24V	Output 03=3.3V 05=5.0V 09=9.0V 12=12V 15=15V	Type S=Single D=Dual	Power (W) 10=1.00	Code internal	Isolation (kVDC) 6= 6.0



MODEL SELECTION GUIDE

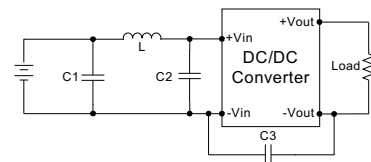
MODEL NUMBER	INPUT Voltage Range (Vdc)	OUTPUT		EFFICIENCY @FL(%)	Capacitor Load(uF)
		Voltage(Vdc)	Current(mA)		
RS7-XX03S10A6	5, 9, 12, 15, 24	3.3	303	69 - 75	220
RS7-XX05S10A6	5, 9, 12, 15, 24	5	200	70 - 77	220
RS7-XX09S10A6	5, 9, 12, 15, 24	9	111.1	70 - 80	220
RS7-XX12S10A6	5, 9, 12, 15, 24	12	83.3	70 - 80	220
RS7-XX15S10A6	5, 9, 12, 15, 24	15	66.7	70 - 80	220
RS7-XX03D10A6	5, 9, 12, 15, 24	±3.3	±151.5	68 - 75	±100
RS7-XX05D10A6	5, 9, 12, 15, 24	±5	±100	70 - 78	±100
RS7-XX09D10A6	5, 9, 12, 15, 24	±9	±55.6	70 - 81	±100
RS7-XX12D10A6	5, 9, 12, 15, 24	±12	±41.7	72 - 81	±100
RS7-XX15D10A6	5, 9, 12, 15, 24	±15	±33.3	70 - 81	±100

XX=Input Voltage

TEST CONFIGURATIONS

EMI Filter

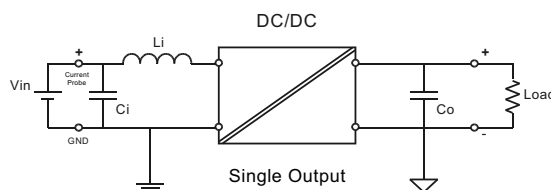
Input filter components (C1, L, C2, C3) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.



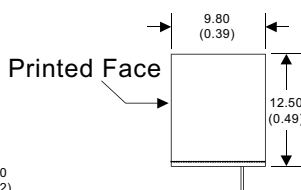
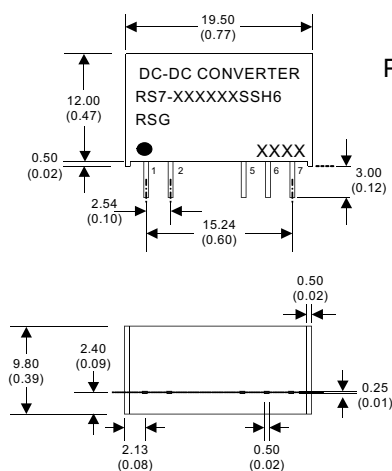
	C1	L	C2	C3
RS7-03XXXXX	1210, 2.2uF/100V	18uH		
RS7-05XXXXX	1210, 2.2uF/100V	18uH		
RS7-12XXXXX	1210, 2.2uF/100V	18uH		
RS7-15XXXXX	1210, 2.2uF/100V	18uH		
RS7-24XXXXX	1210, 2.2uF/100V	18uH	1210, 2.2uF/100V	1206, 470pF/2KV
RS7-48XXXXX	Electrolytic capacitor, 10uF/100V	18uH	1210, 2.2uF/100V	1206, 470pF/2KV

NOTE

1. Ripple/Noise measured with 20MHz bandwidth.
2. Tested by minimal V_{in} and constant resistive load.
3. Measured Input reflected ripple current with a simulated source inductance of 12uH.
4. Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.
5. Operation under no-load conditions will not damage these devices, however they may not meet all listed specifications.
6. Input filter components are required to help meet conducted emission class B,
which application refer to the EMI Filter of design & feature configuration.
7. 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, 470uF/100V.
8. For reduce converter's ripple & noise, it is recommended to add a 4.7uF~100uF ($\pm 4.7\mu F \sim \pm 68\mu F$ for dual output) capacitor in output end.
For EMI performance improvement, it is recommended to add a 12uH inductor and a 10uF~100uF capacitor in input end.



MECHANICAL SPECIFICATIONS



7 Pin SIL Package

- 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. Case Tolerance: ± 0.5 (± 0.02)

PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
1	+V Input	+V Input
2	-V Input	-V Input
5	-V Output	-V Output
6	N.P.	Common
7	+V Output	+V Output

The models listed here are just standard type. If you need a product with special specification or you have questions regarding packing standards (Tube oder Tape/Reel) as well as application support, please contact our specialists: sales@rsg-electronic.de or +49 69-984047-41/-28