

# RS2-S10M/D10M

## FEATURES

- 7 Pin SIL Package
- 1000VDC Isolation
- Up to 3000VDC Isolation
- Low Ripple and Noise
- Efficiency up to 89%
- Operating Temperature Range:  
-40° ~ +85°C
- Non Conductive Black Plastic Case
- EMI Complies with EN55022 Class B

RoHS



OUTPUT SPECIFICATION	ENVIRONMENTAL SPECIFICATION
Voltage accuracy: ±3%	Operating Temperature range: -40°C ~+85°C (see Derating Curve)
Line regulation: per 1%Vin Change: ±1.2%	Maximum Case Temperature: 100°C
LOAD REGULATION: from 10% to 100% Load: see table	Storage Temperature : -40°C ~+125°C
Ripple & Noise: 50mV pk-pk	Cooling : Nature Convection
Temperature coefficient: ±0.02% °C	<b>PHYSICAL SPECIFICATIONS:</b>
Capacitor load: See table	Case Material: Non-conductive Black Plastic (UL94V-0 rated)
<b>INPUT SPECIFICATIONS</b>	PIN Material: CS191R-H Solder coated
Voltage Range: ±10%	Potting Material: Epoxy (UL94V-0 rated)
Max. Input Current: See table	Weight Case- Sip: 2.4 ~ 2.8g
No-Load/Full-Load Input Current: See table	Dimension SIP: 0.76 x 0.24 (28") x 0.39"
Input Filter: Capacitors	<b>ABSOLUTE MAXIMUM RATINGS (1)</b>
Input Reflected Ripple Current : 20-50mA pk-pk by 5V-48V	Input Surge Voltage (100ms)/
<b>GENERAL SPECIFICATIONS</b>	5 V Models: 9VDC max
Efficiency: See table	12V Models: 18VDC max
I/O Isolation Voltage (60sec): 1000 ~ 3000VDC	15V Models: 20VDC max
I/O Isolation Capacitance: 60pF typ.	24V Models: 30VDC max
I/O Isolation Resistance: 1000M Ohm	48V Models: 54VDC max
Switching Frequency: Variable 70kHz	Soldering Temperature (2): 260°C max.
Humidity: 95% rel H	<b>EMC SPECIFICATIONS</b>
Reliability Calculated MTBF : >2.0Mhrs (MIL-HDBK-217 f)	Radiated-/Conducted Emissions: EN55022 Class B
Safety Standard: (designed to meet): IEC 60950-1	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.

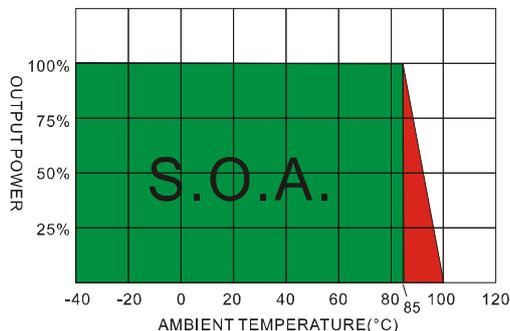
2) (1.5mm from case 10sec Max.)

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								
<b>RS2</b>	-	<b>XX</b>	<b>XX</b>	<b>X</b>	<b>XX</b>	<b>A</b>	<b>X</b>	<b>M</b>
Name/Package RS2=SIL7		Input 05=5.0V 12=12V 15=15V 24=24V 48=48V	Output 05=5.0V 09=9.0V 12=12V 15=15V	Type S=Single D=Dual	Power (W) 10=1.00 20=2.00	Code internal	Isolation (kVDC) 1= 1.0 3= 3.0	

Derating Curve



MODEL SELECTION GUIDE

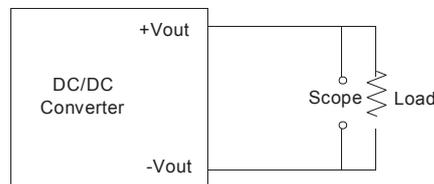
MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current Full load (mA)	LOAD Regulation %	EFFICIENCY @FL(%)	Capacitor Load(µF)
		No-Load (mA)	Full Load (mA)					
RS2-0505D10AXM	5	20	230	±5	±100	6	84	±100
RS2-0509D10AXM	5	30	230	±9	±55.55	5.5	86	±100
RS2-0512D10AXM	5	20	228	±12	±41.67	5.5	87	±47
RS2-0515D10AXM	5	20	228	±15	±33.33	5	87	±47
RS2-1205D10AXM	12	15	98	±5	±100	4	85	±100
RS2-1209D10AXM	12	15	95	±9	±55.55	3.5	86	±100
RS2-1212D10AXM	12	15	94	±12	±41.67	3.5	87	±47
RS2-1215D10AXM	12	15	94	±15	±33.33	3.5	87	±47
RS2-1505D10AXM	15	10	78	±5	±100	3.5	85	±100
RS2-1509D10AXM	15	10	76	±9	±55.55	2.5	87	±100
RS2-1512D10AXM	15	10	76	±12	±41.67	2.5	87	±47
RS2-1515D10AXM	15	10	75	±15	±33.33	2.5	88	±47
RS2-2405D10AXM	24	7	51	±5	±100	3.5	82	±100
RS2-2409D10AXM	24	7	49	±9	±55.55	2.5	85	±100
RS2-2412D10AXM	24	7	48	±12	±41.67	2.5	87	±47
RS2-2415D10AXM	24	7	48	±15	±33.33	2.5	87	±47
RS2-4805D10AXM	48	5	27	±5	±100	3	77	±100
RS2-4809D10AXM	48	5	26	±9	±55.55	3	81	±100
RS2-4812D10AXM	48	5	26	±12	±41.67	3	82	±47
RS2-4815D10AXM	48	5	26	±15	±33.33	2	81	±47
RS2-0505S10AXM	5	20	250	5	200	6	83	220
RS2-0509S10AXM	5	20	230	9	111.1	5.5	86	220
RS2-0512S10AXM	5	20	230	12	83.3	5.5	87	100
RS2-0515S10AXM	5	20	230	15	66.7	5	87	100
RS2-1205S10AXM	12	15	98	5	200	4	84	220
RS2-1209S10AXM	12	15	96	9	111.1	3.5	86	220
RS2-1212S10AXM	12	15	95	12	83.3	3.5	88	100
RS2-1215S10AXM	12	15	95	15	66.7	3	88	100
RS2-1505S10AXM	15	10	79	5	200	4	84	220
RS2-1509S10AXM	15	10	77	9	111.1	3.5	86	220
RS2-1512S10AXM	15	10	76	12	83.3	3.5	87	100
RS2-1515S10AXM	15	10	76	15	66.7	3	89	100
RS2-2405S10AXM	24	7	51	5	200	4	81	220
RS2-2409S10AXM	24	7	50	9	111.1	3.5	84	220
RS2-2412S10AXM	24	7	49	12	83.3	3.5	85	100
RS2-2415S10AXM	24	7	49	15	66.7	2.5	86	100
RS2-4805S10AXM	48	5	27	5	200	4	78	220
RS2-4809S10AXM	48	5	26	9	111.1	3.5	80	220
RS2-4812S10AXM	48	5	26	12	83.3	3	81	100
RS2-4815S10AXM	48	5	26	15	66.7	3	81	100

Suffix "3" means 3 K Vdc isolation Type M = Semi regulated

1. Ripple/Noise measured with 20MHz bandwidth.
2. Tested by minimal  $V_{in}$  and constant resistive full load.
3. 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.
4. 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, 220uF/100V.
5. Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.
6. Operation under no-load conditions will not damage these devices, however they may not meet all listed specifications.

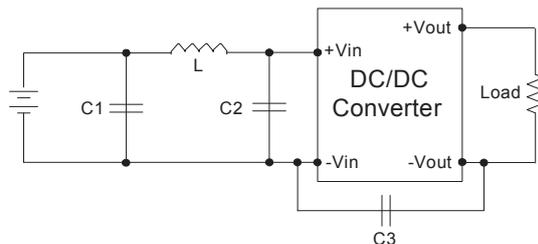
## Output Ripple & Noise Measurement Test

The Scope measurement bandwidth is 0-20MHz.

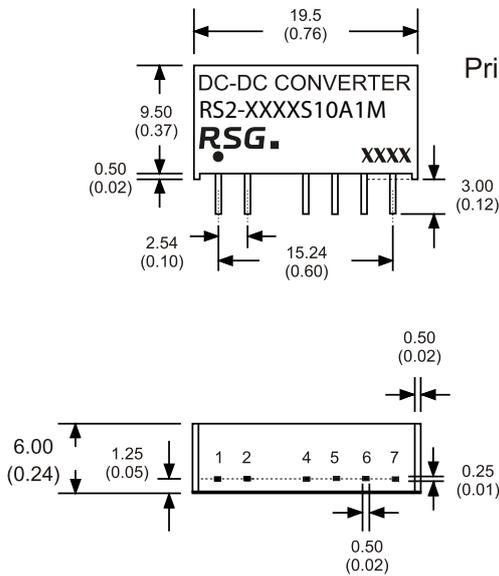


## EMI Filter

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
RS2-05XXS/D10AXM	1210, 2.2uF/100V	18uH		
RS2-12XXS/D10AXM	1210, 2.2uF/100V	18uH		
RS2-15XXS/D10AXM	1210, 2.2uF/100V	18uH		
RS2-24XXS/D10AXM	1210, 2.2uF/100V	18uH	1210, 2.2uF/100V	1206, 470pF/2KV
RS2-48XXS/D10AXM	1210, 2.2uF/100V	18uH	1210, 2.2uF/100V	1206, 470pF/2KV



Printed Face

\* The thickness of 48V input voltage model is 7.20(0.28)

## 7 Pin SIL Package

- Notes : All dimensions are typical in millimeters ( inches ).
1. Pin diameter:  $0.5 \pm 0.05$  (  $0.02 \pm 0.002$  )
  2. Pin pitch and length tolerance:  $\pm 0.35$  (  $\pm 0.014$  )
  3. Case Tolerance:  $\pm 0.5$  (  $\pm 0.02$  )

PIN CONNECTIONS				
PIN NUMBER	SINGLE	DUAL	SINGLE-H	DUAL-H
1	+V Input	+V Input	+V Input	+V Input
2	-V Input	-V Input	-V Input	-V Input
4	-V Output	-V Output	N.P.	N.P.
5	N.P.	Common	-V Output	-V Output
6	+V Output	+V Output	N.P.	Common
7	N.P.	N.P.	+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](mailto:sales@rsg-electronic.de) or +49 69-984047-41/-28