

RS1-S20

- 4 Pin SIL Package
- 1000VDC Isolation
- Up to 3000VDC Isolation
- Low Ripple and Noise
- Efficiency up to 88%
- 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: ±1.2% (per 1%Vin Change)	Maximum Case Temperature: 100°C
LOAD REGULATION: ±10% (from 20 to 100%) Load	Storage Temperature : -40°C ~+125°C
Output 3.3V Model: ±20%	Cooling : Nature Convection
Ripple noise (20Mhz bandwidth): 150mV pk-pk	PHYSICAL SPECIFICATIONS:
Temperature coefficient: ±0.02% °C	Case Material: Non-conductive Black Plastic (UL94V-0 rated)
Capacitor load: see table	Nickel-coated Copper
INPUT SPECIFICATIONS	PIN Material SIP Case: Ø 0.5mm Alloy42 Solder-coated
Voltage Range: ±10%	Potting Material: Epoxy (UL94V-0 rated)
Max. Input Current: see table	Weight Case- Sip: 1.8g
No-Load/Full-Load Input Current: see table	Dimension SIP: 0.46 x 0.29 x 0.40"
Input Filter: Capacitors	ABSOLUTE MAXIMUM RATINGS (1)
Input Reflected Ripple Current : 20mA pk-pk	Input Surge Voltage (100ms)/
GENERAL SPECIFICATIONS	5 V Models: 7VDC max
Efficiency: See table	12V Models: 15VDC max
I/O Isolation Voltage (60sec): 1000 ~ 3000VDC	15V Models: 18VDC max
I/O Isolation Capacitance: 60pF typ.	24V Models: 28VDC 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	EMC SPECIFICATIONS
Reliability Calculated MTBF : >1.121Mhrs (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.)

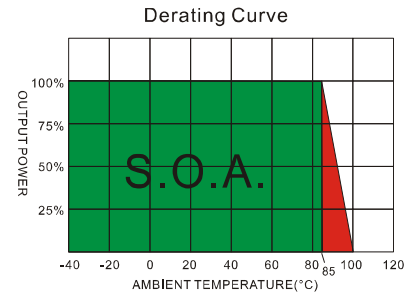
3) All specifications typical at TA= 25°C, nominal input voltage and full load unless otherwise specified.

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.

RS1-S20

NUMBER STRUCTURE

RD1 -	XX	XX	X	XX	A	X
Name/Package RS1=SIL4 RD1=DIL8	Input 03=3.3V 05=5.0V 07=7.2V 12=12V 15=15V 24=24V 48=48V	Output 03=3.3V 05=5.0V 07=7.2V 09=9.0V 12=12V 15=15V 18=18V 24=24V	Type S=Single D=Dual E= Dual separ.	Power (W) 02=0.25 05=0.50 10=1.00 15=1.50 20=2.0	Code internal	Isolation (kVDC) 1= 1.0 3= 3.0



MODEL SELECTION GUIDE

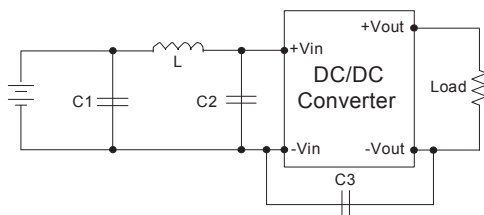
MODEL NUMBER	INPUT	INPUT Current		OUTPUT	OUTPUT Current	EFFICIENCY @FL(%)	Capacitor Load(uF)
	Voltage (Vdc)	No-Load (mA)	Full Load (mA)	Voltage (Vdc)	Full load (mA)		
RS1-0503S20AX	5	35	371	3.3	400	71	470
RS1-0505S20AX	5	35	519	5	400	77	470
RS1-0507S20AX	5	35	519	7.2	278	77	470
RS1-0509S20AX	5	35	500	9	222	80	470
RS1-0512S20AX	5	35	487	12	167	82	470
RS1-0515S20AX	5	35	487	15	133	82	470
RS1-0518S20AX	5	35	487	18	111	82	470
RS1-0524S20AX	5	35	487	24	83	82	470
RS1-1203S20AX	12	20	152	3.3	400	72	470
RS1-1205S20AX	12	20	213	5	400	78	470
RS1-1207S20AX	12	20	208	7.2	278	80	470
RS1-1209S20AX	12	20	203	9	222	82	470
RS1-1212S20AX	12	20	198	12	167	84	470
RS1-1215S20AX	12	20	198	15	133	84	470
RS1-1218S20AX	12	20	198	18	111	84	470
RS1-1224S20AX	12	25	203	24	83	82	470
RS1-1503S20AX	15	18	120	3.3	400	73	470
RS1-1505S20AX	15	18	170	5	400	78	470
RS1-1507S20AX	15	18	166	7.2	278	80	470
RS1-1509S20AX	15	18	162	9	222	82	470
RS1-1512S20AX	15	18	158	12	167	84	470
RS1-1515S20AX	15	18	158	15	133	84	470
RS1-1518S20AX	15	18	158	18	111	84	470
RS1-1524S20AX	15	18	162	24	83	82	470
RS1-2403S20AX	24	10	74	3.3	400	74	470
RS1-2405S20AX	24	10	104	5	400	80	470
RS1-2407S20AX	24	10	104	7.2	278	80	470
RS1-2409S20AX	24	10	99	9	222	84	470
RS1-2412S20AX	24	10	99	12	167	84	470
RS1-2415S20AX	24	10	99	15	133	84	470
RS1-2418S20AX	24	10	99	18	111	84	470
RS1-2424S20AX	24	10	99	24	83	84	470
RS1-4803S20AX	48	7	38	3.3	400	72	470
RS1-485S20AX	48	7	53	5	400	78	470
RS1-4807S20AX	48	7	52	7.2	278	80	470
RS1-4809S20AX	48	7	51	9	222	82	470
RS1-4812S20AX	48	7	52	12	167	80	470
RS1-4815S20AX	48	7	51	15	133	82	470
RS1-4818S20AX	48	7	51	18	111	82	470
RS1-4824S20AX	48	7	51	24	83	82	470

Suffix "3" means 3kVdc isolation

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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.

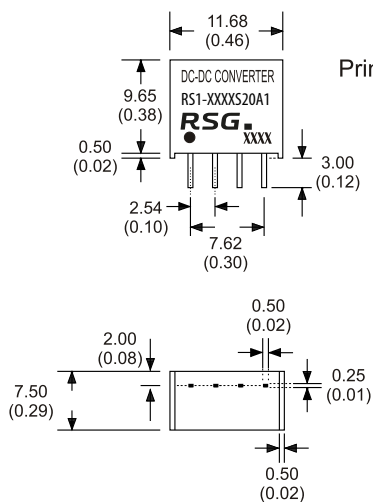


	C1	L	C2	C3
RS1-05XXS20AX	1210, 2.2uF/100V	18uH		
RS1-12XXS20AX	1210, 2.2uF/100V	18uH		
RS1-15XXS20AX	1210, 2.2uF/100V	18uH		
RS1-24XXS20AX	1210, 2.2uF/100V	18uH	1210, 2.2uF/100V	1206, 470pF/2KV
RS1-48XXS20AX	Electrolytic Capacitor, 10uF/100V	18uH	1210, 2.2uF/100V	1206, 470pF/2KV

1. Ripple/Noise measured with 20MHz bandwidth.
2. Tested by minimal Vin 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.

PIN CONNECTIONS

PIN NUMBER	SINGLE
1	-V Input
2	+V Input
3	-V Output
4	+V Output



4 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)

(The Pin Connection of high isolation one is the same with normal one).

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