RS5-RS20W/RD20W

- 8 Pin SIL Package
- Wide 4:1 Input Range
- 1600VDC Isolation
- Continuous Short Circuit Protection
- Efficiency up to 82%
- Operating Temperature Range
  -40° ~ +85°C
- Non Conductive Black Plastic Case
- Remote on/off Control(Optional)

RoHS

OUTPUT SPECIFICATION

Voltage accuracy:	±1%
Maximum Output Current:	See table
Line regulation:	± 0.2% max.
LOAD REGULATION:	Single (from 0% to 100% Load) ±1% max.
	Dual (from 10% to 100% Load) ±1% max.
Cross Regulation (Dual Output):	± 5%
Short Circuit Protection :	Indefinite (Automatic Recovery)
Ripple noise (20Mhz bandwidth):	30mV pk-pk max.
Temperature coefficient:	±0.02%<>°C
Capacitor load:	See table
Transient Recovery Time:	250us, typ.
Transient Response:	(Deviation) ±3% max.

INPUT SPECIFICATIONS

Voltage Range:	See table
Start up Time:	30ms, typ.
Max. Input Current:	See table
No-Load/Full-Load Input Current:	See table
Input Filter:	Capacitors
Input Reflected Ripple Current :	20mA pk-pk

GENERAL SPECIFICATIONS

Efficiency:	See table
I/O Isolation Voltage (60sec):	1600VDC
I/O Isolation Capacitance:	200pF max.
I/O Isolation Resistance:	1000M Ohm, min
Switching Frequency:	100kHz, typ.
Humidity:	95% rel H
Reliability Calculated MTBF : (MIL-HDBK-217 f)	> 1.7MHrs
Safety Standard: (designed to meet):	IEC 60950-1
Remote on Controll:	on: open or high impedance
Remote off Controll:	2-4mA Input current (via 1K)
Off stand by current (Nominal Vin):	2.5mA max.

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:	Non conductive black plastic
PIN Material SIP Case:	C519R-H Solder -coated
Potting Material:	Silicon (UL94V-0 rated)
Weight Case- Sip:	4.8g, typ.
Dimmension SIP:	0.86 x 0.36 x 0.44“

ABSOLUTE MAXIMUM RATINGS (1)

Input Surge Voltage (100ms)/max.	
12 V Models:	25VDC max
24 V Models:	50VDC max.
48 V Models:	100VDC max.
Soldering Temperature:	260°C max.(2)

EMC SPECIFICATIONS

Radiated-/Conducted Emissions:	EN55022 Class A (see EMI Filter note)
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.

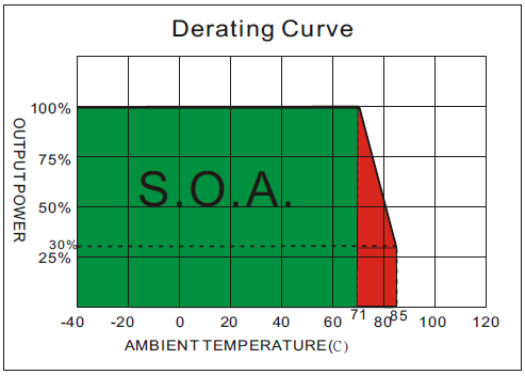
STAND März 2017 Rev 01

RS5-RS20W/RD20W

NUMBER STRUCTURE

RS5 - XX XX XX XX A X W

- RS5 - Name/Package: RS5=SIL8
- XX - Input: 12=4.5-18V, 24=9.0-36V, 48=18-75V
- XX - Output: 03=3.3V, 05=5.0V, 12=12V, 15=15V
- XX - Type: RS=Regulated Single, RD=Regulated Dual
- XX - Power (W): 20=3.00, 30=3.00
- A - Code: internal
- X - Isolation (kVDC): 1= 1.6
- W = 4:1 input Range



MODEL SELECTION GUIDE

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current No-Load (mA)	INPUT Current Full Load (mA)	OUTPUT Voltage (Vdc)	OUTPUT Current Min. load (mA)	OUTPUT Current Full load	EFFICIENCY @FL(%)	Capacitor Load(uF)
RS5-1203RS20A1W	4.5-18	40	196	3.3	0	500	70	1000uF
RS5-1205RS20A1W	4.5-18	40	225	5	0	400	74	1000uF
RS5-1212RS20A1W	4.5-18	40	213	12	0	167	78	220uF
RS5-1215RS20A1W	4.5-18	40	213	15	0	133	78	100uF
RS5-1205RD20A1W	4.5-18	30	219	±5	0	±200	77	±470uF
RS5-1212RD20A1W	4.5-18	30	213	±12	0	±83	78	±100uF
RS5-1215RD20A1W	4.5-18	40	216	±15	0	±66	77	±47uF
RS5-2403RS20A1W	9-36	25	96	3.3	0	500	71	1000uF
RS5-2405RS20A1W	9-36	20	106	5	0	400	78	1000uF
RS5-2412RS20A1W	9-36	30	105	12	0	167	79	220uF
RS5-2415RS20A1W	9-36	30	105	15	0	133	79	100uF
RS5-2405RD20A1W	9-36	30	111	±5	0	±200	75	±470uF
RS5-2412RD20A1W	9-36	30	108	±12	0	±83	77	±100uF
RS5-2415RD20A1W	9-36	30	106	±15	0	±66	78	±47uF
RS5-4803RS20A1W	18-75	10	47	3.3	0	500	72	1000uF
RS5-4805RS20A1W	18-75	15	55	5	0	400	75	1000uF
RS5-4812RS20A1W	18-75	15	55	12	0	167	75	220uF
RS5-4815RS20A1W	18-75	15	54	15	0	133	76	100uF
RS5-4805RD20A1W	18-75	15	56	±5	0	±200	74	±470uF
RS5-4812RD20A1W	18-75	15	56	±12	0	±83	74	±100uF
RS5-4815RD20A1W	18-75	15	55	±15	0	±66	75	±47uF

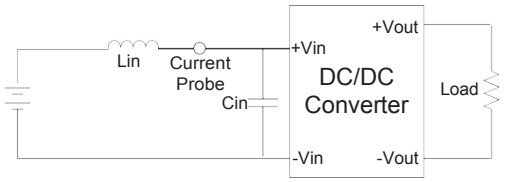
1. One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
2. Measured with a 1uF ceramic capacitor.
3. Test by minimal Vin and constant resistive load.
4. Test by normal Vin and 100%-25% load,25% load step change.
5. Measured Input reflected ripple current with a simulated source inductance of 12uH and a source capacitor Cin(47uF, ESR<1.0© at 100KHz).
6. Exceeding the absolute ratings of the unit could cause damage. It's not allowed for continuous operating ratings.
7. Input filter components are be required to help meet conducted emission class A, which application refer to the EMI Filter of design & feature configuration.
8. An external filter capacitor is required if the module has to meet IEC61000-4-4 and IEC61000-4-5. The filter capacitor RSG suggest: Nippon - chemi - con KY series, 220uF/100V.

STAND März 2017 Rev 01

RS5-RS20W/RD20W

Input Reflected Ripple Current Test Step

Input reflected ripple current is measured through a source inductor Lin(12uH) and a source capacitor Cin(47uF, ESR<1.0© at 100KHz) at nominal input and full load.

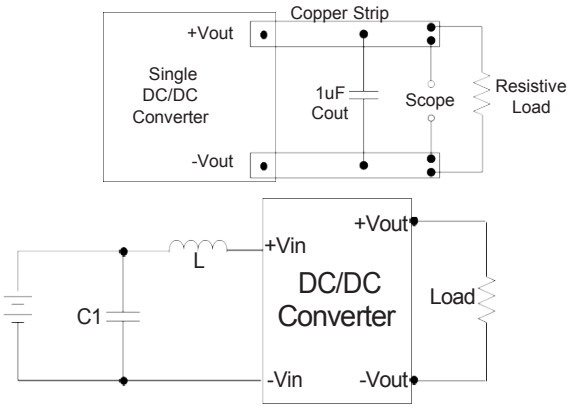


EMI Filter

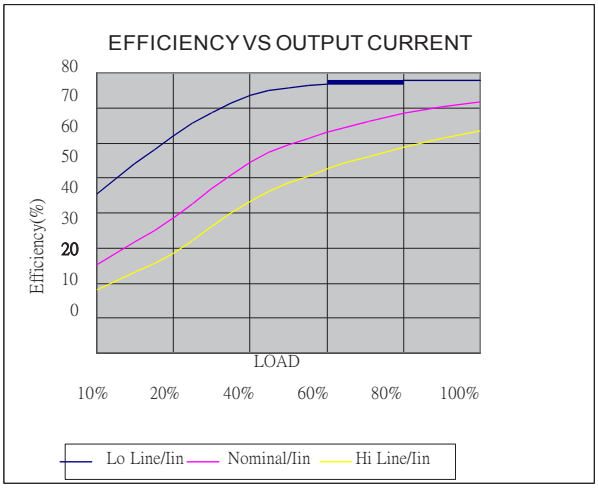
Input filter components (C1, L) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.

Output Ripple & Noise Measurement Test

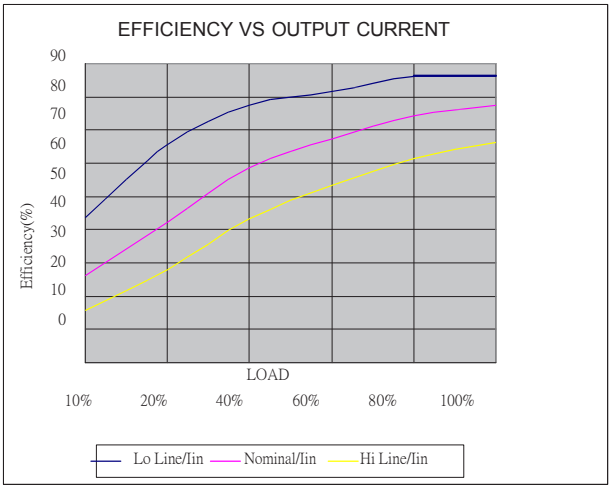
Use a capacitor Cout(1.0uF) measurement.
The Scope measurement bandwidth is 0-20MHz.



	C1	L
RS5-12XXRS/RD20A1W	1210 10uF/35V	2.5uH
RS5-24XXRS/RD20A1W	1210 2.2uF/100V	10uH
RS5-48XXRS/RD20A1W	1210 2.2uF/100V	18uH

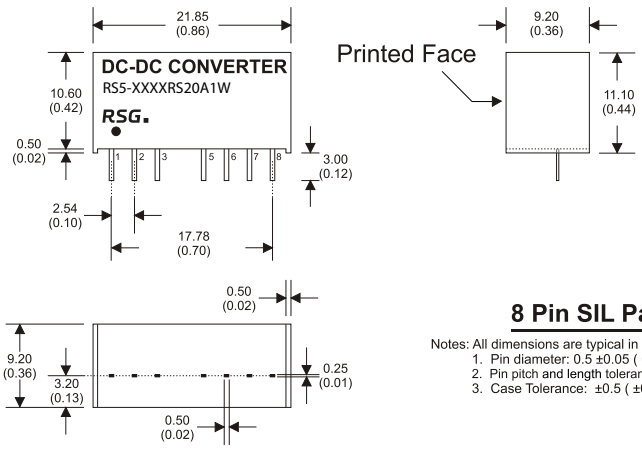


RS5-1203RS20A1W



RS5-4815RD20A1W

MECHANICAL SPECIFICATIONS



8 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
3	Remote On/Off	Remo te On/ Off
5	N.C.	N.C.
6	+V Output	+V Output
7	-V Output	Common
8	N.C	-V Output

The models listed above are standard types. If you need special specifications or have questions regarding packing (Tube or Tape&Reel) or need application support, please contact our specialists: sales@rsg-electronic.de or +49 69-984047-0

STAND März 2017 Rev 01