

# RS5-R30W/RD30W

- 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)

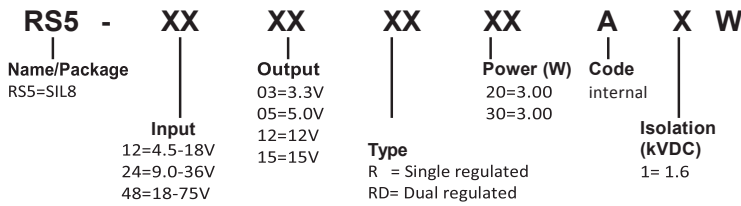
RoHS



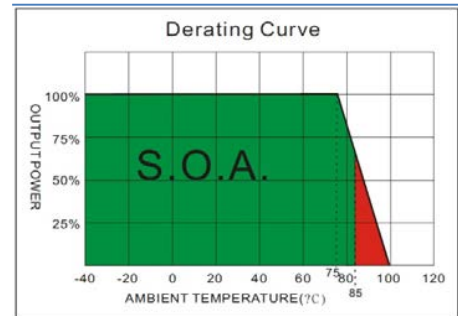
OUTPUT SPECIFICATION	ENVIRONMENTAL SPECIFICATION
Voltage accuracy: ±1%	Operating Temperature range: -40°C ~+85°C (see Derating Curve)
Maximum Output Current: See table	Maximum Case Temperature: 100°C
Line regulation: ± 0.2% max.	Storage Temperature : -40°C ~+125°C
LOAD REGULATION: Single (from 0% to 100% Load) ±1% max	Cooling : Nature Convection
Dual (from 10% to 100% Load) ±1% max	PHYSICAL SPECIFICATIONS:
Cross Regulation (Dual Output): ± 5%	Case Material: Non conductive black plastic
Short Circuit Protection : Indefinite (Automatic Recovery )	PIN Material SIP Case: C519R-H Solder -coated
Ripple noise (20Mhz bandwidth): 30mV pk-pk max.	Potting Material: Silicon (UL94V-0 rated)
Temperature coefficient: ±0.02%<>°C	Weight Case- Sip: 4.8g, typ.
Capacitor load: See table	Dimmension SIP: 0.86" x 0.36" x 0.44"
Transient Recovery Time: 250us, typ.	ABSOLUTE MAXIMUM RATINGS
Transient Response: ( Deviation) ±3% max.	Input Surge Voltage (100ms)/
INPUT SPECIFICATIONS	12 V Models: 25VDC max.
Voltage Range: See table	12V Models: 50VDC max.
Start up Time: 30ms, typ.	48V Models: 100VDC max.
Max. Input Current: See table	Soldering Temperature: 260°C max. <sup>(2)</sup>
No-Load/Full-Load Input Current: See table	EMC SPECIFICATIONS
Input Filter: Capacitors	Radiated-/Conducted Emissions: EN55022 Class A (see EMI Filter note)
Input Reflected Ripple Current : 20mA pk-pk	ESD: IEC 61000-4-2 Perf.Criteria A
GENERAL SPECIFICATIONS	RS: IEC 61000-4-3 Perf.Criteria A
Efficiency: See table	EFT: IEC 61000-4-4 Perf.Criteria A
I/O Isolation Voltage (60sec): 1600VDC	SURGE: IEC 61000-4-5 Perf.Criteria A
I/O Isolation Capacitance: 200pF max.	CS: IEC 61000-4-6 Perf.Criteria A
I/O Isolation Resistance: 1000M Ohm, min	PFMF IEC 61000-4-8 Perf.Criteria A
Switching Frequency: 250kHz, typ.	
Humidity: 95% rel H	
Reliability Calculated MTBF : > 1.7Mhrs (MIL-HDBK-217 f)	
Safety Standard: (designed to meet): IEC 60950-1	
Remote on Controll: on: 0 open or high impedance	
Remote off Controll: Off: 2-4mA Input current (Via 1K)	
Off stand by current (Nominal Vin): 2.5mA max.	

- 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**



W = 4:1 input Range



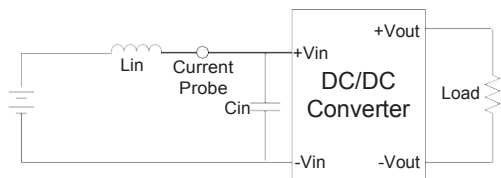
**MODEL SELECTION GUIDE**

MODEL NUMBER	INPUT Voltage Range	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current		EFFICIENCY @FL(%)	Capacitor
		No-Load (mA)	Full Load (mA)		Min. load (mA)	Full load (mA)		
RS5-1203R30A1W	4.5-18	40	268	3.3	0	700	72	1760uF
RS5-1205R30A1W	4.5-18	40	325	5	0	600	77	1000uF
RS5-1212R30A1W	4.5-18	40	309	12	0	250	81	170uF
RS5-1215R30A1W	4.5-18	40	309	15	0	200	81	110uF
RS5-1205RD30A1W	4.5-18	40	325	±5	0	±300	77	±470uF
RS5-1212RD30A1W	4.5-18	40	313	±12	0	±125	80	±100uF
RS5-1215RD30A1W	4.5-18	40	313	±15	0	±100	80	±47uF
RS5-2403R30A1W	9-36	25	129	3.3	0	700	75	1760uF
RS5-2405R30A1W	9-36	25	159	5	0	600	79	1000uF
RS5-2412R30A1W	9-36	30	153	12	0	250	82	170uF
RS5-2415R30A1W	9-36	30	153	15	0	200	82	110uF
RS5-2405RD30A1W	9-36	30	159	±5	0	±300	79	±470uF
RS5-2412RD30A1W	9-36	35	159	±12	0	±125	79	±100uF
RS5-2415RD30A1W	9-36	35	157	±15	0	±100	80	±47uF
RS5-4803R30A1W	18-75	15	66	3.3	0	700	74	1760uF
RS5-4805R30A1W	18-75	15	81	5	0	600	78	1000uF
RS5-4812R30A1W	18-75	15	79	12	0	250	80	170uF
RS5-4815R30A1W	18-75	15	78	15	0	200	81	110uF
RS5-4805RD30A1W	18-75	15	80	±5	0	±300	79	±470uF
RS5-4812RD30A1W	18-75	15	80	±12	0	±125	79	±100uF
RS5-4815RD30A1W	18-75	15	80	±15	0	±100	79	±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<1.0Ω 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 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.

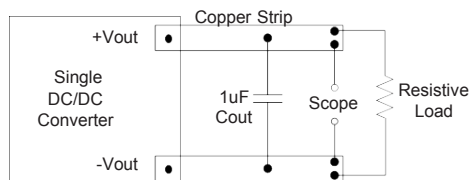
### Input Reflected Ripple Current Test Step

Input reflected ripple current is measured through a source inductor  $L_{in}$  (12 $\mu$ H) and a source capacitor  $C_{in}$  (47 $\mu$ F, ESR<1.0 $\Omega$  at 100KHz) at nominal input and full load.



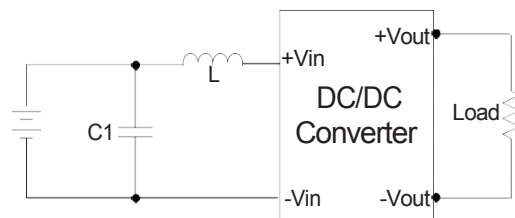
### Output Ripple & Noise Measurement Test

Use a capacitor  $C_{out}$  (1.0 $\mu$ F) measurement. The Scope measurement bandwidth is 0-20MHz.

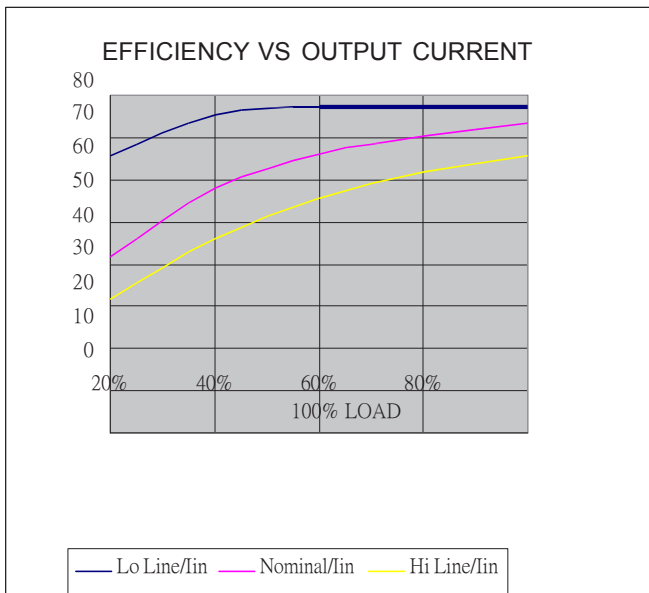


### EMI Filter

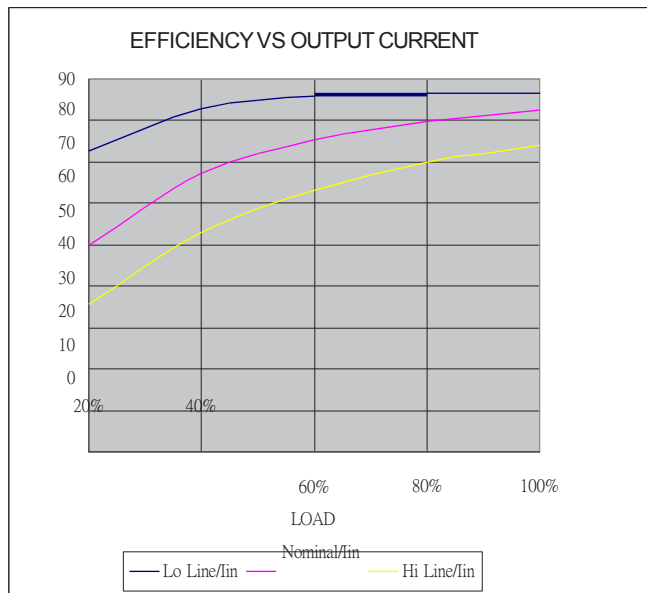
Input filter components ( $C_1$ ,  $L$ ) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.



	$C_1$	$L$
RS5-12XXR/RD30A1W	1210 10 $\mu$ F/35V	2.5 $\mu$ H
RS5-24XXR/RD30A1W	1210 2.2 $\mu$ F/100V	10 $\mu$ H
RS5-48XXR/RD30A1W	1210 2.2 $\mu$ F/100V	18 $\mu$ H

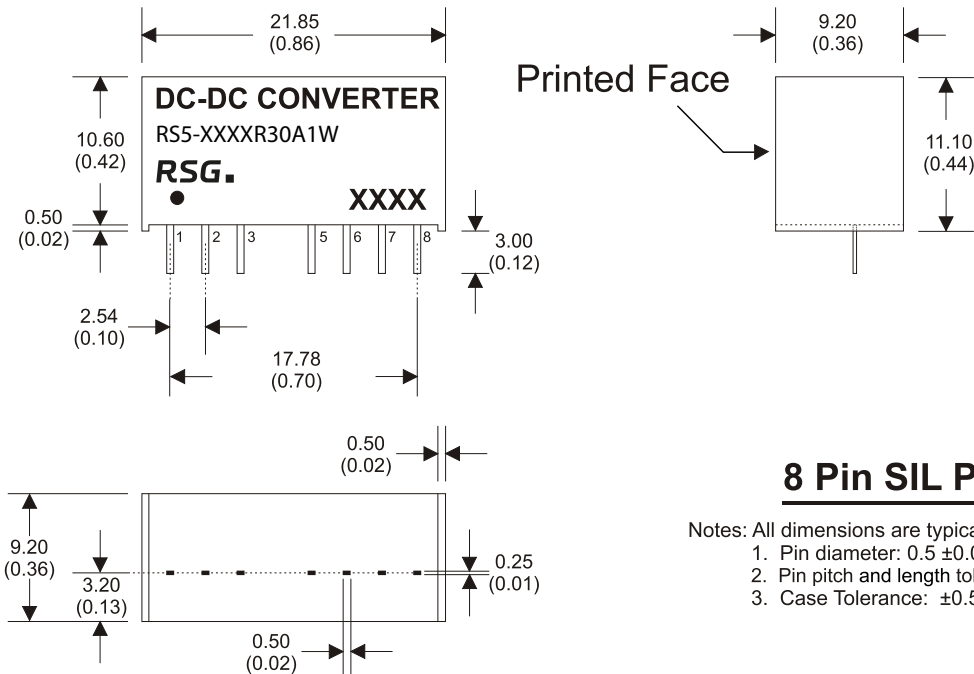


RS5-1203R30A1W



RS5-4815R30A1W

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