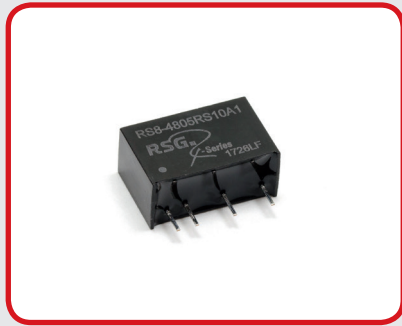


RS8-RS/RD10

1.0W Regulated Single & Dual Output DC/DC Converter



Picture similar



- 6 Pin SIL Package
- Wide 2:1 Input Range
- 1500VDC Isolation
- no minimum Load required
- Efficiency up to 81%
- Operating Temperature Range -40°C ~ +85°C
- Continuous Short Circuit Protection
- Low Ripple and Noise
- Non Conductive Black Plastic Case

Output Specifications	
Voltage Accuracy	±2%, max.
Output Voltage Adjustability (Trim)	–
Maximum Output Current	See table
Line Regulation	±0.2% max.
Load Regulation	from 0% to 100% Load (Single/Dual Outp.): ±1% max./±2% max. 5 ~ 100% (Dual Outp.): ±1% max.
Cross Regulation (Dual Output)	±5%
Over Voltage Protection	–
Over Current Protection	–
Short Circuit Protection	Continuous (Automatic Recovery)
Ripple & Noise (20 MHz bandwidth)	50mV pk-pk max.
Temperature Coefficient	±0.02%/°C
Transient Recovery Time	500µs typ.
Transient Response Deviation	±3% max.

Input Specifications	
Voltage Range	See table
Start-up Time	–
No-Load/Full-Load Input Current	See table
Input Filter	C/L (see filter details on following pages)
Input Reflected Ripple Current	35mA pk-pk typ.
Remote ON	–
Remote OFF	–
OFF Idle Current	–
Surge Voltage (100 ms) ¹⁾	
5V Models	15VDC max.
12V Models	25VDC max.
24V Models	50VDC max.
48V Models	100VDC max.

General Specifications	
I/O Isolation Voltage (60 sec)	1500VDC
Isolation Voltage Metal Case/Input&Output	–
I/O Isolation Capacitance	70pF typ.
I/O Isolation Resistance	1000M Ohm, min
Switching Frequency	150 ~ 550kHz
Humidity	95% rel H
Reliability Calculated MTBF	>2.8Mhrs (MIL-HDBK-217 f)
Safety Standard(s)	UL60950-1 (approval), UL62368-1 (meet)

Environmental Specifications	
Operating Temperature Range	-40°C ~ +85°C (see Derating Curve)
Maximum Case Temperature	105°C
Storage Temperature	-55°C ~ +125°C
Cooling	Natural Convection
Soldering Profile and Peak Temperature	Wave Flow: 260°C (1.5 mm from case), 10s, max.

Physical Specifications	
Case Material	Non-conductive Black Plastic (UL94V-0 rated)
Pin Material	–
Pin Material	C5191T-H Solder-coated
Potting Material	Epoxy (UL94V-0 rated)
Weight	3.0g
Case Dimensions	0.67" x 0.30" x 0.43"

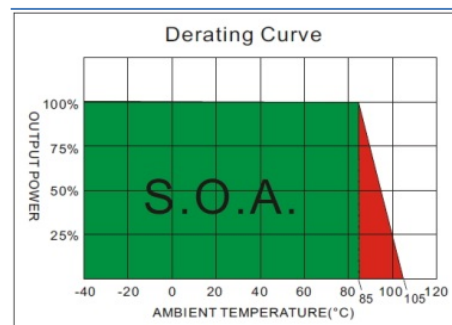
EMC Specifications	
Radiated / Conducted Emissions	EN55032 Class A see EMI Filter
ESD	IEC 61000-4-2 Perf.Criteria B
Rad. RF	IEC 61000-4-3 Perf.Criteria A
EFT	IEC 61000-4-4 Perf.Criteria B
Surge	IEC 61000-4-5 Perf.Criteria B
Cond. RF	IEC 61000-4-6 Perf.Criteria A
PFMF	IEC 61000-4-8 Perf.Criteria A
VD/SI/VV	–

¹⁾ These are stress ratings; exposure of devices to any of these conditions may adversely affect long-term reliability.
All specifications typical at T_A = 25 °C, nominal input voltage and full load, unless otherwise specified.

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

RS8	-	XX	XX	XX	XX	A	X
Name/Package		Input	Output	Type	Power (W)	Code	Isolation
RS8=SIL6		05=5.0V 12=12V 24=24V 48= 48V	05=5.0V 12=12V 15=15V 24=24V	RS=Regulated Single RD=Regulated Dual	10=1.00	internal	1= 1.5



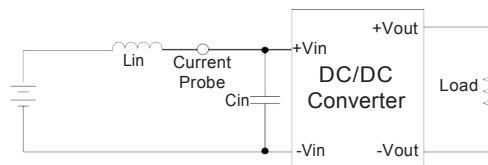
MODEL SELECTION GUIDE

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current		EFFICIENCY @FL (%)	Capacitive Load (uF)
		No-Load (mA)	Full Load (mA)		Min. load (mA)	Full load (mA)		
RS8-0505RS10A1	4.5-9	35	263	5	0	200	76	1680
RS8-0512RS10A1	4.5-9	35	253	12	0	83	79	820
RS8-0515RS10A1	4.5-9	35	250	15	0	67	80	680
RS8-0524RS10A1	4.5-9	35	250	24	0	42	80	470
RS8-1205RS10A1	9-18	20	107	5	0	200	78	1680
RS8-1212RS10A1	9-18	20	105	12	0	83	80	820
RS8-1215RS10A1	9-18	20	103	15	0	67	81	680
RS8-1224RS10A1	9-18	20	105	24	0	42	80	470
RS8-2405RS10A1	18-36	10	54	5	0	200	78	1680
RS8-2412RS10A1	18-36	10	52	12	0	83	80	820
RS8-2415RS10A1	18-36	10	52	15	0	67	80	680
RS8-2424RS10A1	18-36	10	52	24	0	42	81	470
RS8-4805RS10A1	36-75	7	28	5	0	200	76	1680
RS8-4812RS10A1	36-75	7	27	12	0	83	78	820
RS8-4815RS10A1	36-75	7	27	15	0	67	78	680
RS8-4824RS10A1	36-75	7	27	24	0	42	77	470
RS8-0512RD10A1	4.5-9	35	259	±12	0	±42	77	±470
RS8-0515RD10A1	4.5-9	35	254	±15	0	±33	79	±330
RS8-1212RD10A1	9-18	20	106	±12	0	±42	79	±470
RS8-1215RD10A1	9-18	20	105	±15	0	±33	80	±330
RS8-2412RD10A1	18-36	10	52	±12	0	±42	80	±470
RS8-2415RD10A1	18-36	10	53	±15	0	±33	79	±330
RS8-4812RD10A1	36-75	7	27	±12	0	±42	77	±470
RS8-4815RD10A1	36-75	7	27	±15	0	±33	77	±330

- One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
- Ripple/Noise measured with a 1uF ceramic capacitor.
- Tested by minimal Vin and constant resistive load.
- Tested by normal Vin and 25% load step change (75%-50%-25% of Io).
- Measured Input reflected ripple current with a simulated source inductance of 12uH.
- Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.
- Input filter components are be required to help meet conducted emission class A, which application refer to The EMI Filter of Design & feature configuration.
- An external filter capacitor is required if the module has to meet IEC61000-4-4 and IEC61000-4-5.
The filter capacitor RSG suggest: 5Vin models : Nippon - chemi - con KY series, 330uF/100V.
Other models : Nippon - chemi - con KY series, 220uF/100V.

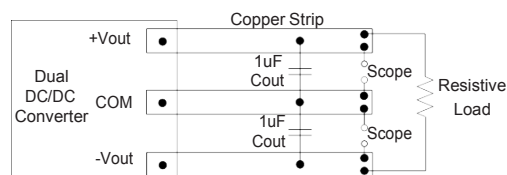
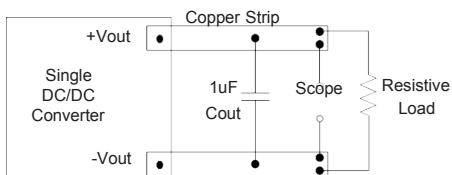
Input Reflected Ripple Current Test Step

Input reflected ripple current is measured through a source inductor L_{in} (12uH) and a source capacitor C_{in} (47uF, ESR<1.0 Ω at 100KHz) at nominal input and full load.



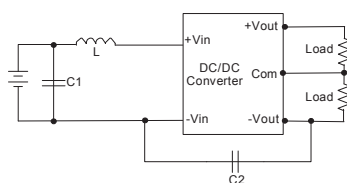
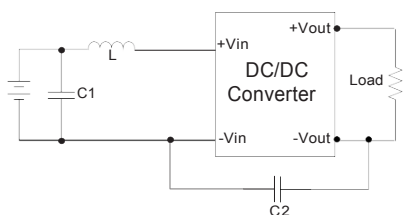
Output Ripple & Noise Measurement Test

Use a capacitor C_{out} (1.0uF) measurement. The Scope measurement bandwidth is 20MHz.



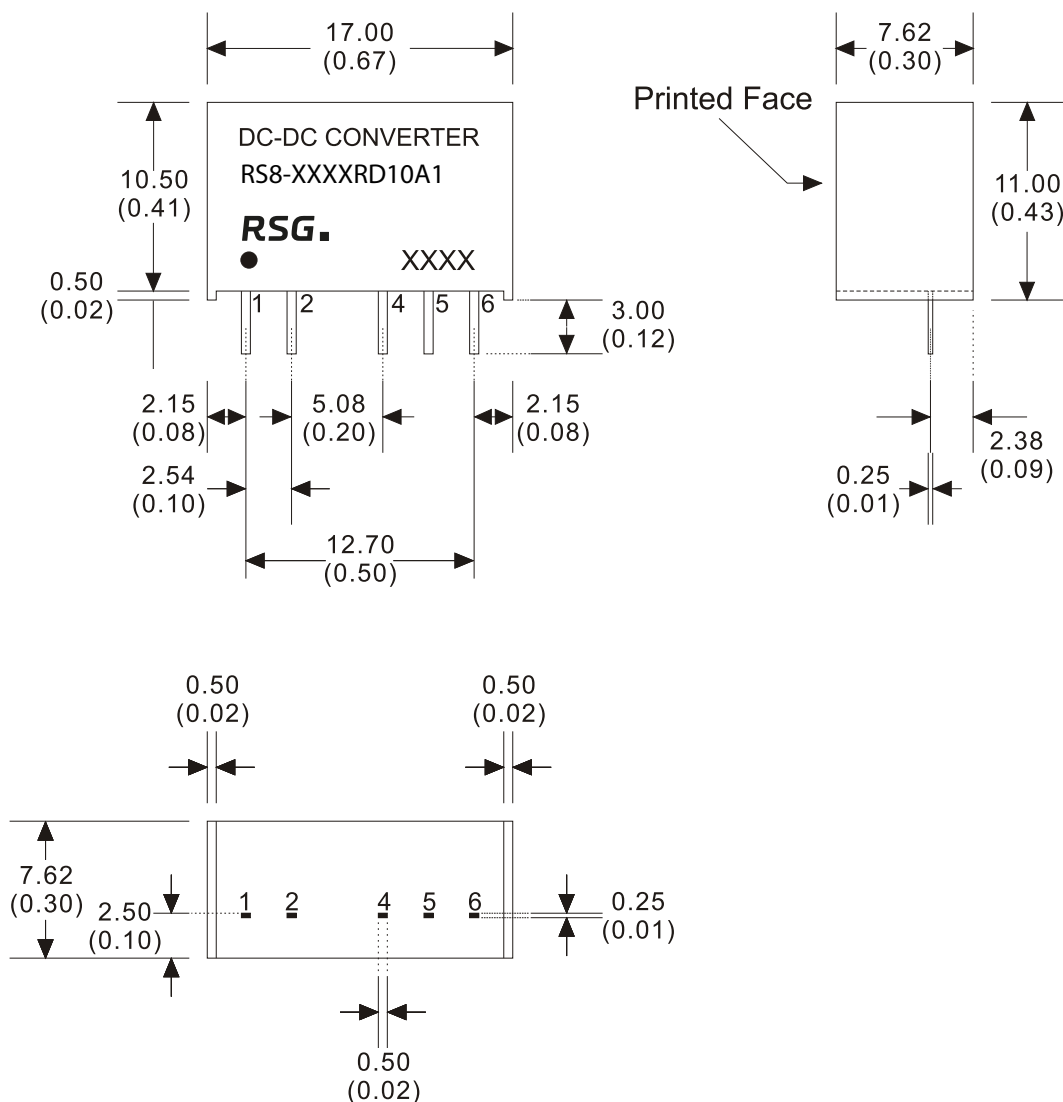
EMI Filter

Input filter components (C_1, C_2, 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.



	C1	C2	L
RS8-05XXRS/RD10A1	MLCC 4,7uF/50V	MLCC 220uF/3KV	4.7uH
RS8-12XXRS/RD10A1	MLCC 4,7uF/50V	MLCC 220uF/3KV	4.7uH
RS8-24XXRS/RD10A1	MLCC 4,7uF/50V	MLCC 220uF/3KV	18uH
RS8-48XXRS/RD10A1	MLCC 4,7uF/100V	MLCC 220uF/3KV	18uH

RS8-RS10/RD10



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

6 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. Pin to case tolerance: ±0.5 (±0.02)
 4. Case Tolerance: ±0.5 (±0.02)
 5. Stand-off tolerance: ±0.1 (±0.004)

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