

RR8-S15/D15

- 24 Pin DIL Package
- Wide 2:1 Input Range
- 1600VDC Isolation
- No Minimum Load Required
- Continuous Short Circuit Protection
- Over Voltage Protection
- Over Current Protection
- Efficiency up to 91%
- Operating Temperature Range -40° ~ +85°C
- Metal Case
- Soft Start
- Remote on/off Control



OUTPUT SPECIFICATION	ENVIRONMENTAL SPECIFICATION
Voltage accuracy: ±1.0%	Operating Temperature range: -40°C ~ +85°C (see Derating Curve)
Line regulation: Single & Dual ±0.2-0.5% max.	Maximum Case Temperature: 105°C
LOAD REGULATION: from 0% to 100% Load: ±0.5 - 1% max.	Storage Temperature : -40°C ~ +125°C
Cross Regulation (Dual Output): ± 5%	Cooling : Nature Convection
Over Voltage Protection (Zener diode clamp): Zener Diode Clamp	PHYSICAL SPECIFICATIONS:
Over Current Protection: 150% of I _L , typ..	Case Material: Nickel-coated Copper
Short Circuit Protection : Indefinite (Automatic Recovery)	PIN Material: 0.5mm Brass Solder coated
Ripple noise (20Mhz bandwidth): 60mV pk-pk	Potting Material: Epoxy (UL94V-0 rated)
Temperature coefficient: ±0.02%/°C	Weight Case-DIP: 20.0g
Capacitor load: See table	Dimmension DIP: 1.25" x 0.8" x 0.4"
Transient Recovery Time: 250us, typ.	ABSOLUTE MAXIMUM RATINGS (1)
Transient Response: (Deviation) ±3% max.	Input Surge Voltage (100ms)/
INPUT SPECIFICATIONS	12V Models: 36VDC max.
Voltage Range: See table	24V Models: 50VDC max.
Start up Time: 20ms, typ.	48V Models: 100VDC max.
Max. Input Current: See table	Soldering Temperature: 260°C max.
No-Load/Full-Load Input Current: See table	EMC SPECIFICATIONS (2)
Input Filter: PI Type	Radiated-/Conducted Emissions: EN55022 Class A see EMI Filter
Input Reflected Ripple Current : 20mA pk-pk typ.	ESD: IEC 61000-4-2 Perf.Criteria A
Remote On/Off (positive logic): On: 3.0~12VDC or open circuit,	RS: IEC 61000-4-3 Perf.Criteria A
OFF: 0~1.2VDC or	EFT: IEC 61000-4-4 Perf.Criteria B
Short circuit pin 1 and 2/3	SURGE: IEC 61000-4-5 Perf.Criteria B
OFF idle current: 5mA typ.	CS: IEC 61000-4-6 Perf.Criteria A
GENERAL SPECIFICATIONS	PFMF IEC 61000-4-8 Perf.Criteria A
Efficiency: See table typ.	
I/O Isolation Voltage (60sec): 1600VDC, Input/Output,	
Case/Input & Output	
I/O Isolation Capacitance: 2000pF typ.	
I/O Isolation Resistance: 1000M Ohm	
Switching Frequency: 250kHz-330kHz, typ.	
Humidity: 95% rel H	
Reliability Calculated MTBF : > 460KHrs	
(MIL-HDBK-217 f)	
Safety Standard: (designed to meet): IEC 60950-1	

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.

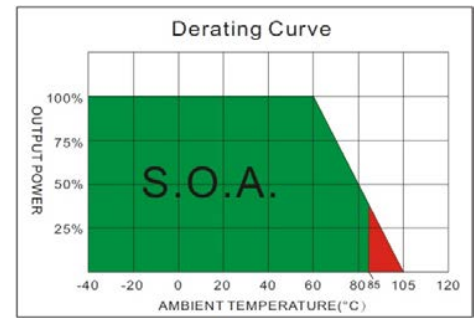
4) The information and specification contained in this data sheet are believed to be correct at time of publication.

However RSG accepts no responsibility for consequences arising from printing errors or inaccuracies. Specifications are subject to change without notice.

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NUMBER STRUCTURE

RR8 -	XX	XX	S/D	XX	A	X
Name/Package RR8=DIL24	Input 12= 9-18V 24=18-36V 48=36-75V	Output 03=3.3V 05=5.1V 05=5.0V * 12=12V 15=15V	Type S= Single-Outp. D= Dual-Outp. *Nur bei Dual	Power (W) 15=15.00	Code internal	Isolation (kVDC) 1= 1.6



MODEL SELECTION GUIDE

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current		EFFICIENCY @FL (% , typ.)	Capacitor Load @FL (µF, max.)
		No-Load (mA, max.)	Full Load (mA, typ.)		Min. load (mA)	Full load (mA)		
RR8-1203S15A1	9-18	15	1309	3.3	0	4000	86	4700
RR8-1205S15A1	9-18	15	1465	5.1	0	3000	89	3300
RR8-1212S 15A1	9-18	15	1436	12	0	1250	89	600
RR8-1215S 15A1	9-18	15	1420	15	0	1000	90	400
RR8-1205D15A1	9-18	15	1488	±5	0	±1500	86	±1500
RR8-1212D15A1	9-18	15	1420	±12	0	±625	90	±288
RR8-1215D15A1	9-18	15	1420	±15	0	±500	90	±200
RR8-2403S15A1	18-36	10	647	3.3	0	4000	87	4700
RR8-2405S15A1	18-36	10	732	5.1	0	3000	89	3300
RR8-2412S 15A1	18-36	10	710	12	0	1250	90	600
RR8-2415S 15A1	18-36	10	702	15	0	1000	91	400
RR8-2405D15A1	18-36	10	744	±5	0	±1500	86	±1500
RR8-2412D15A1	18-36	10	710	±12	0	±625	90	±288
RR8-2415D15A1	18-36	10	710	±15	0	±500	90	±200
RR8-4803S15A1	36-75	5	327	3.3	0	4000	86	4700
RR8-4805S15A1	36-75	5	370	5.1	0	3000	88	3300
RR8-4812S 15A1	36-75	5	359	12	0	1250	89	600
RR8-4815S 15A1	36-75	5	359	15	0	1000	89	400
RR8-4805D15A1	36-75	5	372	±5	0	±1500	86	±1500
RR8-4812D15A1	36-75	5	359	±12	0	±625	89	±288
RR8-4815D15A1	36-75	5	355	±15	0	±500	90	±200

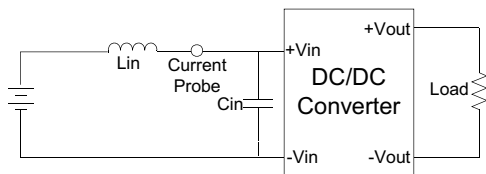
- One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
- Measured with a 1.0uF ceramic capacitor.
- Tested by minimal Vin and constant resistive load.
- Tested by normal Vin and 25% load step change (75%-50%-25% of Io).
- Measured Input reflected ripple current with a simulated source inductance of 12uHand a source capacitor Cin(47uF, ESR<1.0Ω at 100KHz).
- The remote on/off control pin is referenced to -Vin(pin2 and pin3).
- 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, 2pcs 330uF/100V parallel connection or 680uF/100V.
- Exceeding the absolute ratings of the unit could cause damage.
It is not allowed for continuous operating.
- Operation under no-load conditions will not damage these devices, however they may not meet all listed specifications.

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TEST CONFIGURATIONS

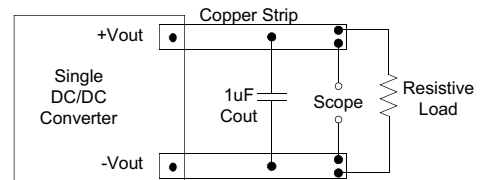
Input Reflected Ripple Current Test Step

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

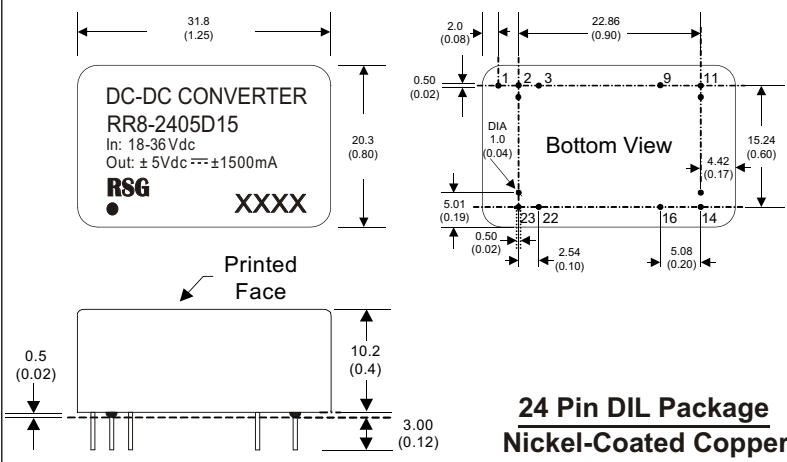


Output Ripple & Noise Measurement Test

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



MECHANICAL SPECIFICATIONS



**24 Pin DIL Package
Nickel-Coated Copper**

- 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)
 4. Stand-off tolerance: ± 0.1 (± 0.004)

PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
1	Remote On/Off	Remote On/Off
2	-V Input	-V Input
3	-V Input	-V Input
9	N.P.	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

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