RR4-S08/D08

- 24 Pin DIL Package
- Wide 2:1 Input Range
- 1500VDC Isolation
- High Power Density
- Continuous Short Circuit Protection
- Low Ripple and Noise
- Efficiency up to 85%
- Operating Temperature Range -40° ~ +85°C
- Metal Case

CE

OUTPUT SPECIFICATION	
Voltage accuracy:	±1%
Line regulation:	Single &Dual ±0.5% max.
LOAD REGULATION:	from 0% to 100% Load: ±0.5 - 1% max.
	Output 3.3V Model: ±1.5%
Cross Regulation (Dual Output):	± 5%
Over Current Protection:	150%of Fl, typ..
Short Circuit Protection :	Indefinite (Automatic Recovery)
Ripple noise (20Mhz bandwidth):	75mV pk-pk
Temperature coefficient:	±0.02%/°C
Capacitor load:	See table

INPUT SPECIFICATIONS	
Voltage Range:	See table
Max. Input Current:	See table
No-Load/Full-Load Input Current:	See table
Input Filter:	PI Type
Input Reflected Ripple Current :	35mA pk-pk typ.

GENERAL SPECIFICATIONS	
Efficiency:	See table typ.
I/O Isolation Voltage (60sec):	1500VDC
I/O Isolation Voltage Metal Case:	1000VDC
I/O Isolation Capacitance:	1000pF typ.
I/O Isolation Resistance:	1000M Ohm
Switching Frequency:	330kHz, typ.
Humidity:	95% rel H
Reliability Calculated MTBF : (MIL-HDBK-217 f)	> 0.91MHrs
Safety Standard: (designed to meet):	IEC 60950-1

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:	Nickel-coated Copper
PIN Material:	0.5mm Brass Solder coated
Potting Material:	Epoxy (UL94V-0 rated)
Weight Case-DIP:	17.0g
Dimmension DIP:	1.25“ x 0.8“ x 0.4“

ABSOLUTE MAXIMUM RATINGS (1)	
Input Surge Voltage (100ms)/	
12V Models:	25VDC max.
24V Models:	50VDC max.
48V Models:	100VDC max.
Soldering Temperature:	260°C max.

EMC SPECIFICATIONS (2)	
Radiated-/Conducted Emissions:	EN55022 Class A see EMI Filter
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.

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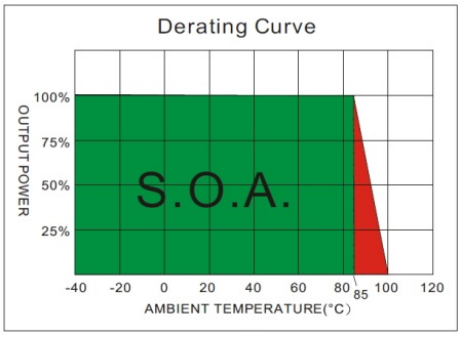
NUMBER STRUCTURE

RR4 - XX XX S/D XX A X

- **RR4** — Name/Package: RR4=DIL24
- **XX** — Input: 12= 9-18V; 24=18-36V; 48=36-72 V
- **XX** — Output: 03=3.3V; 05=5.0V; 12=12V; 15=15V
- **S/D** — Type: S= Single-Outp.; D= Dual-Outp.
- **XX** — Power (W): 08=8.00
- **A** — Code: internal
- **X** — Isolation (kVDC): 1= 1.5

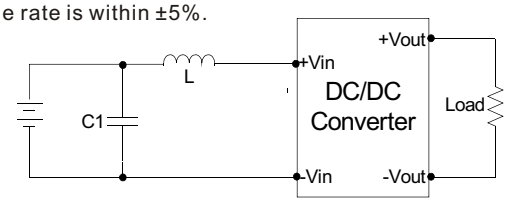


MODEL SELECTION GUIDE

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 (mA)	EFFICIENCY @FL(%)	Capacitor Load(uF)
RR4-1203S08A1	9-18	20	687	3.3	0	2000	80	3300
RR4-1205S08A1	9-18	20	762	5	0	1500	82	2200
RR4-1212S08A1	9-18	20	784	12	0	665	85	470
RR4-1215S08A1	9-18	20	803	15	0	535	83	220
RR4-1205D08A1	9-18	20	813	±5	0	±800	82	±1000
RR4-1212D08A1	9-18	20	794	±12	0	±335	84	±220
RR4-1215D08A1	9-18	20	794	±15	0	±265	84	±100
RR4-2403S08A1	18-36	15	344	3.3	0	2000	80	3300
RR4-2405S08A1	18-36	15	381	5	0	1500	82	2200
RR4-2412S08A1	18-36	15	392	12	0	665	85	470
RR4-2415S08A1	18-36	15	397	15	0	535	84	220
RR4-2405D08A1	18-36	15	407	±5	0	±800	82	±1000
RR4-2412D08A1	18-36	15	402	±12	0	±335	83	±220
RR4-2415D08A1	18-36	15	392	±15	0	±265	85	±100
RR4-4803S08A1	36-72	15	172	3.3	0	2000	80	3300
RR4-4805S08A1	36-72	15	191	5	0	1500	82	2200
RR4-4812S08A1	36-72	15	198	12	0	665	84	470
RR4-4815S08A1	36-72	15	198	15	0	535	84	220
RR4-4805D08A1	36-72	15	203	±5	0	±800	82	±1000
RR4-4812D08A1	36-72	15	196	±12	0	±335	85	±220
RR4-4815D08A1	36-72	15	196	±15	0	±265	85	±100

NOTE

1. One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
2. Ripple/Noise measured with a 1uF ceramic capacitor.
3. Test by nominal input voltage and constant resistor load.
4. Measured Input reflected ripple current with a simulated source inductance of 12uH.
5. Operation under no-load and 10% conditions will not damage these devices, however they may not meet all listed specifications.
6. It's necessary to add minimum capacitor in output for some models, please check single model datasheet for detail value.
7. 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.
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.
9. Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.



	C1	L
RR4-12XXXXX	100uF, 100V	12uH
RR4-24XXXXX	100uF, 100V	12uH
RR4-48XXXXX	100uF, 100V	12uH

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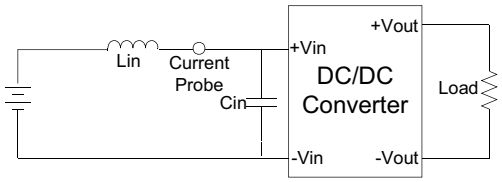
TEST CONFIGURATIONS

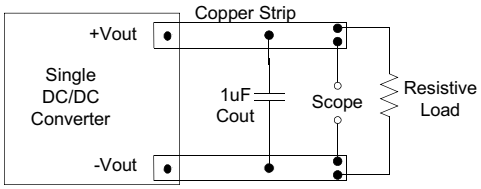
Input Reflected Ripple Current Test Step

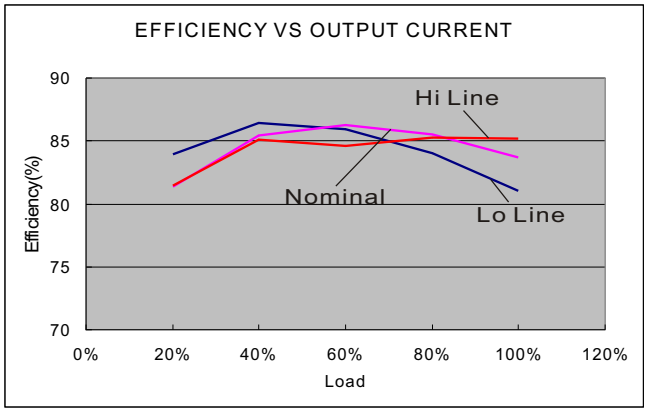
Input reflected ripple current is measured through a source inductor Lin(12uH) and a source capacitor Cin(47uF, ESR<1.0Ω at 100KHz) at nominal input and full load.



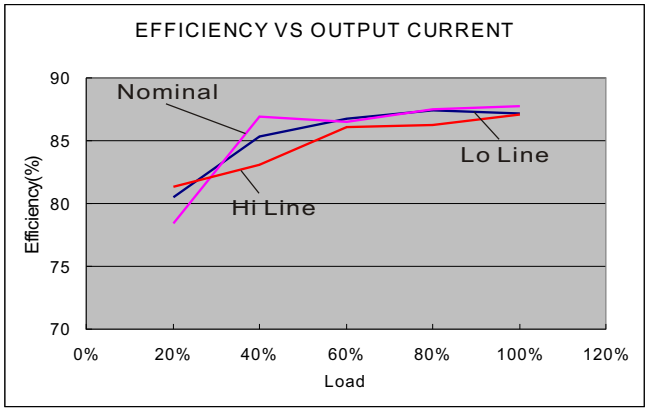
Output Ripple & Noise Measurement Test

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

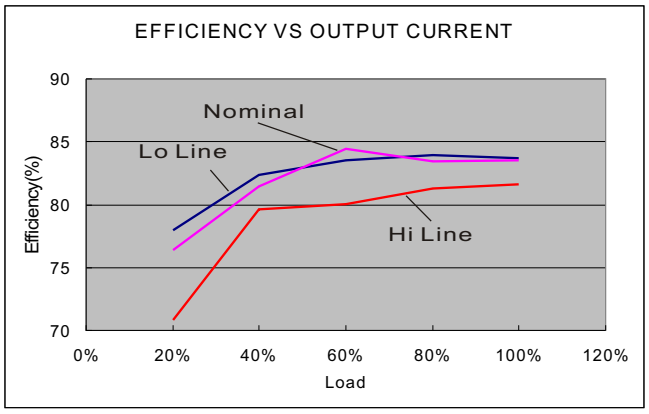




12 Models



24 Models



48 Models

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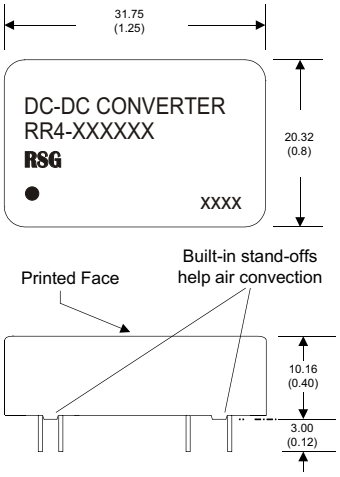
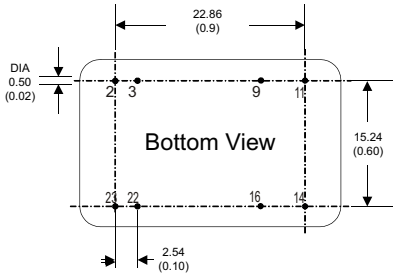
MECHANICAL SPECIFICATIONS





24 Pin DIL Package
Nickel-Coated Copper

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
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

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