

RR8-S12/D12

- 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: ±1.2%	Operating Temperature range: -40°C ~+85°C (see Derating Curve)
Line regulation: Single &Dual ±0.5% max.	Maximum Case Temperature: 100°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 FI, typ..	Case Material: Nickel-coated Copper
Short Circuit Protection : Indefinite (Automatic Recovery)	PIN Material: 0.5mm Brass Solder coated
Ripple noise (20Mhz bandwidth): 85mV pk-pk	Potting Material: Epoxy (UL94V-0 rated)
Temperature coefficient: ±0.02%/°C	Weight Case-DIP: 18.0g
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 Short circuit	EFT: IEC 61000-4-4 Perf.Criteria A
pin 1 and 2/3	SURGE: IEC 61000-4-5 Perf.Criteria A
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: 1200pF typ.	
I/O Isolation Resistance: 1000M Ohm	
Switching Frequency: 330kHz, typ.	
Humidity: 95% rel H	
Reliability Calculated MTBF : > 1.00Mhrs	
(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.

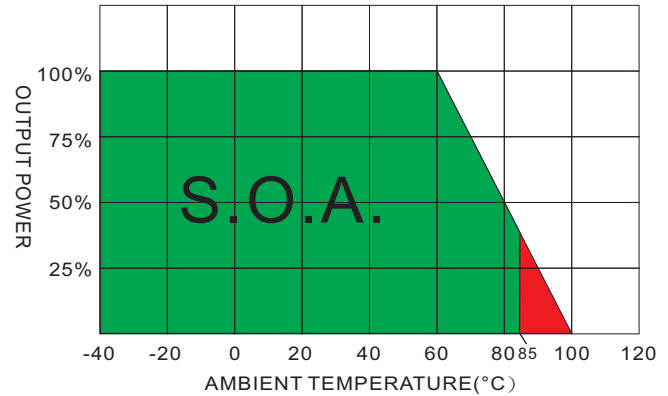
However RSG accepts no responsibility for consequences arising from printing errors or inaccuracies. Specifications are subject to change without notice.

RR8-S12/D12

NUMBER STRUCTURE

RR8 - Name/Package RR8=DIL24	XX Input 12= 9-18V 24=18-36V 48=36-75V	XX Output 02=2.5V 03=3.3V 05=5.0V 12=12V 15=15V	S/D Type S= Single-Outp. D= Dual-Outp.	XX Power (W) 12=12.00	A Code internal	X Isolation (kVDC) 1= 1.6
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Derating Curve

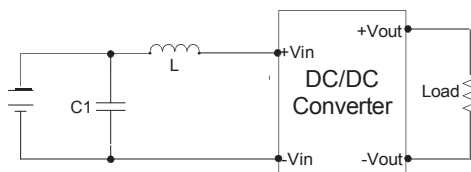


MODEL SELECTION GUIDE

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current		EFFICIENCY @FL(%)	Capacitor Load(uF)
		No-Load (mA)	Full Load (mA)		Min. load (mA)	Full load (mA)		
RR8-1202S12A1	9-18	15	889	2.5	0	3500	85	2000
RR8-1203S12A1	9-18	15	1146	3.3	0	3500	87	2000
RR8-1205S12A1	9-18	15	1163	5	0	2400	89	2000
RR8-1212S12A1	9-18	15	1149	12	0	1000	90	430
RR8-1215S12A1	9-18	15	1149	15	0	800	90	300
RR8-1212D12A1	9-18	15	1149	±12	0	±500	90	±200
RR8-1215D12A1	9-18	15	1136	±15	0	±400	91	±120
RR8-2402S12A1	18-36	15	445	2.5	0	3500	85	2000
RR8-2403S12A1	18-36	15	573	3.3	0	3500	87	2000
RR8-2405S12A1	18-36	15	581	5	0	2400	89	2000
RR8-2412S12A1	18-36	15	575	12	0	1000	90	430
RR8-2415S12A1	18-36	15	575	15	0	800	90	300
RR8-2412D12A1	18-36	15	575	±12	0	±500	90	±200
RR8-2415D12A1	18-36	15	562	±15	0	±400	91	±120
RR8-4802S12A1	36-75	15	225	2.5	0	3500	84	2000
RR8-4803S12A1	36-75	15	283	3.3	0	3500	88	2000
RR8-4805S12A1	36-75	15	291	5	0	2400	89	2000
RR8-4812S12A1	36-75	15	294	12	0	1000	88	430
RR8-4815S12A1	36-75	15	291	15	0	800	89	300
RR8-4812D12A1	36-75	15	294	±12	0	±500	88	±200
RR8-4815D12A1	36-75	15	291	±15	0	±400	89	±120

NOTE

- One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
- Maximum value at nominal input voltage, Measured with 20MHz bandwidth and 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).
- 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.
- An external filter capacitor is required if the module has to meet IEC61000-4-5.
The filter capacitor RSG suggest: Nippon - chemi - con KY series, 330uF/100V.
- Exceeding the absolute ratings of the unit could cause damage.
It is not allowed for continuous operating.



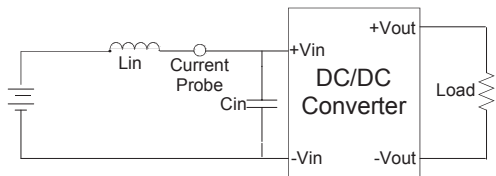
	C1	L
RR8-	100uF, 100V	12uH
RR8-	100uF, 100V	12uH
RR8-	100uF, 100V	12uH

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TEST CONFIGURATIONS

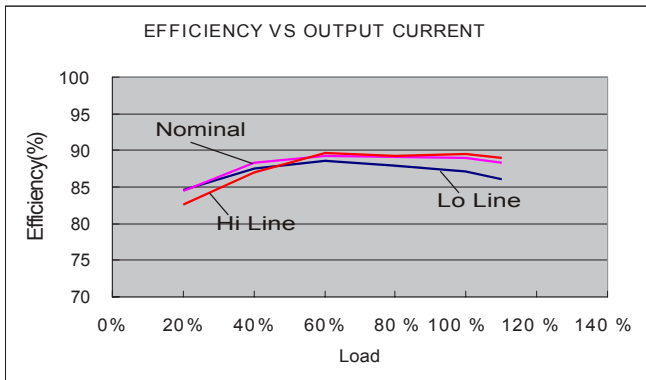
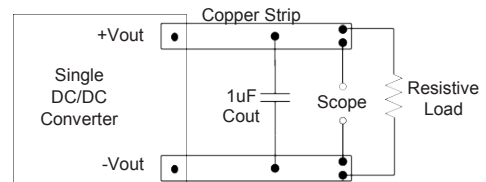
Input Reflected Ripple Current Test Step

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

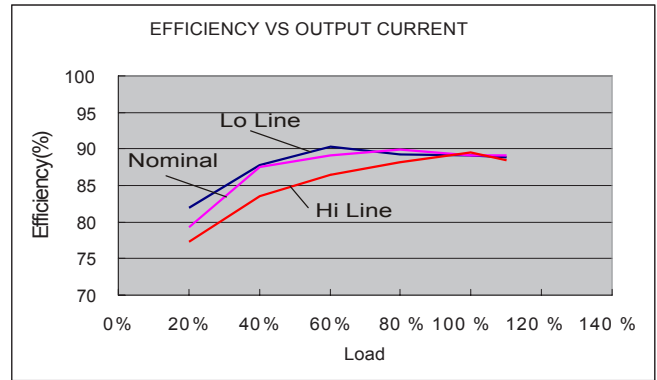


Output Ripple & Noise Measurement Test

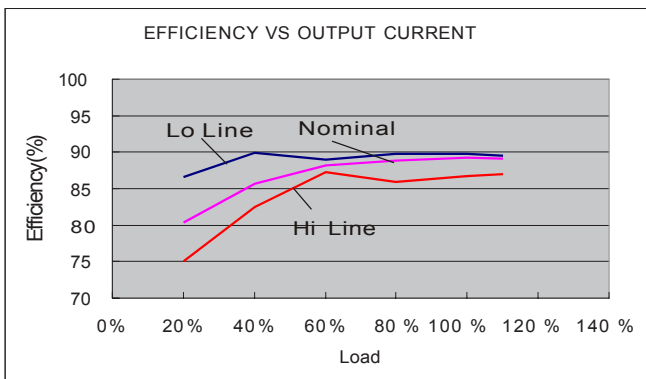
Use a capacitor C_{out} (1.0 μ F) measurement. The Scope measurement bandwidth is 0-20MHz.



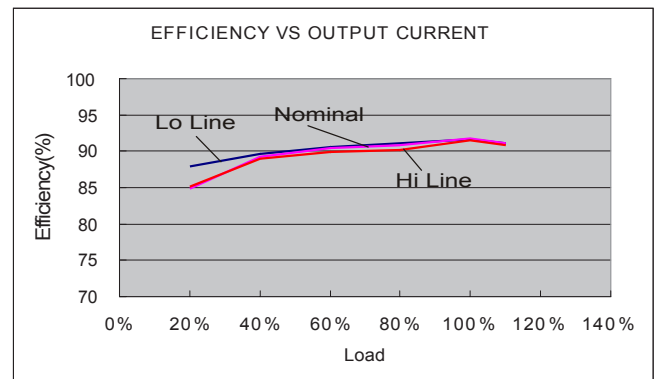
RR8-1205S12



RR8-2405S12

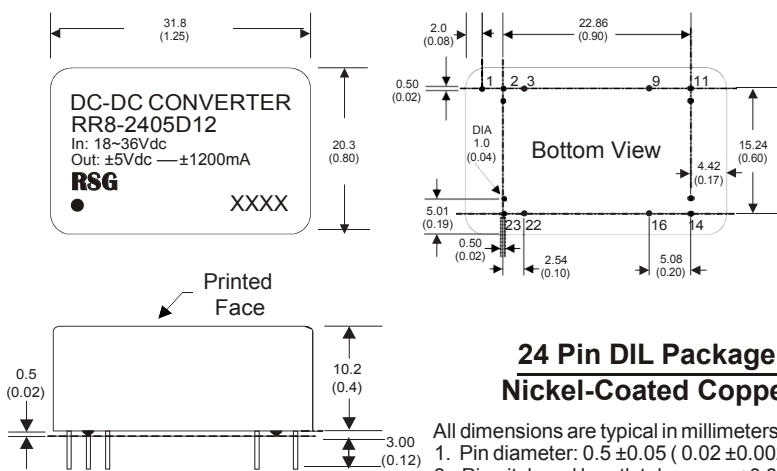


RR8-4815S12



RR8-2415D12

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 69-984047-0