

RR8-S/D12W

12W Regulated Single & Dual Output DC/DC Converter



Picture similar



- 24 Pin DIL Package
- Wide 4:1 Input Range
- 1600VDC Isolation
- No Minimum Load Required
- Efficiency up to 90%
- Operating Temperature Range -40°C ~ +85°C
- Continuous Short Circuit Protection
- Over Current Protection, Over Voltage Protection
- Low no Load Input Current
- Soft Start
- Remote On/Off Control

Output Specifications	
Voltage Accuracy	±1.2%, max.
Output Voltage Adjustability (Trim)	-
Maximum Output Current	See table
Line Regulation	Single & Dual ±0.2% max.
Load Regulation	from 0% to 100% Load: ±0.5% ~ ±1% max.
Cross Regulation (Dual Output)	±5%
Over Voltage Protection	118 ~ 125% of Vout typ.
Over Current Protection	170% of FL typ.
Short Circuit Protection	Indefinite (Automatic Recovery)
Ripple & Noise (20 MHz bandwidth)	85mV pk-pk
Temperature Coefficient	±0.02%/°C
Transient Recovery Time	250µs typ.
Transient Response Deviation	±3% max.

Input Specifications	
Voltage Range	See table
Start-up Time	20ms typ.
No-Load/Full-Load Input Current	See table
Input Filter	C/L (see filter details on following pages)
Input Reflected Ripple Current	20mA pk-pk typ.
Remote ON	3.0 ~ 12VDC or open circuit
Remote OFF	0 ~ 1.2VDC or short circuit pin 1 and 2/3
OFF Idle Current	5mA typ.
Surge Voltage (100 ms) ¹⁾	
24V Models	50VDC max.
48V Models	100VDC max.

General Specifications	
I/O Isolation Voltage (60 sec)	1600VDC
Isolation Voltage Metal Case/Input&Output	1600VDC
I/O Isolation Capacitance	1500pF typ.
I/O Isolation Resistance	1000M Ohm, min
Switching Frequency	270kHz typ.
Humidity	95% rel H
Reliability Calculated MTBF	>1.00Mhrs (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	Nickel-coated Copper
Pin Material	0.5mm Brass Solder-coated
Potting Material	Epoxy (UL94V-0 rated)
Weight	18.0g
Case Dimensions	1.25" x 0.80" x 0.40"

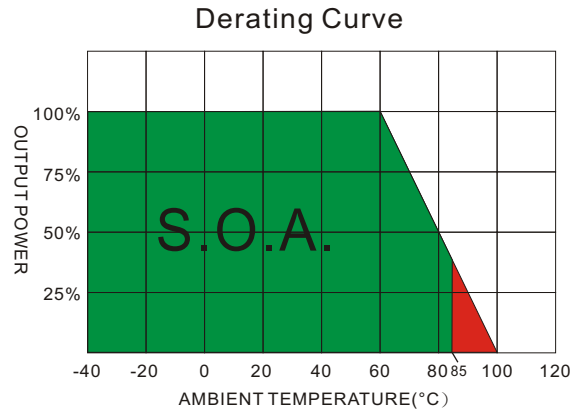
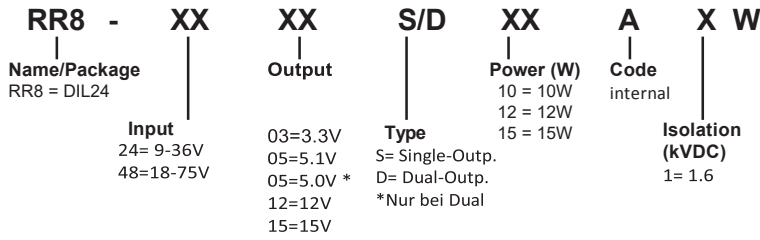
EMC Specifications	
Radiated / Conducted Emissions	EN55032 Class A see EMI Filter
ESD	IEC 61000-4-2 Perf.Criteria B
Rad. RF	IEC 61000-4-3 Perf.Criteria A
EFT	IEC 61000-4-4 Perf.Criteria A
Surge	IEC 61000-4-5 Perf.Criteria A
Cond. RF	IEC 61000-4-6 Perf.Criteria A
PFMF	IEC 61000-4-8 Perf.Criteria A
VD/SI/VV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

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.**

RR8-S/D12W

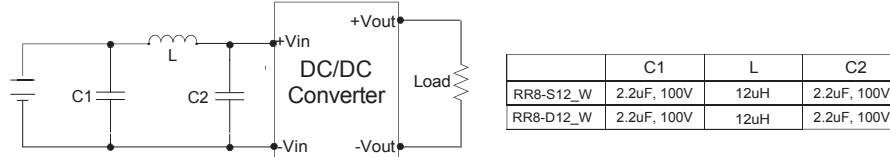
NUMBER STRUCTURE



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)		
RR8-2403S12A1W	9-36	15	573	3.3	0	3500	87	2000
RR8-2405S12A1W	9-36	15	581	5.1	0	2400	89	2000
RR8-2412S12A1W	9-36	15	574	12	0	1000	90	430
RR8-2415S12A1W	9-36	15	574	15	0	800	90	300
RR8-2405D12A1W	9-36	15	595	±5	0	±1200	87	±1250
RR8-2412D12A1W	9-36	15	574	±12	0	±500	90	±200
RR8-2415D12A1W	9-36	15	574	±15	0	±400	90	±120
RR8-4803S12A1W	18-75	15	286	3.3	0	3500	87	2000
RR8-4805S12A1W	18-75	15	290	5.1	0	2400	89	2000
RR8-4812S12A1W	18-75	15	287	12	0	1000	90	430
RR8-4815S12A1W	18-75	15	287	15	0	800	90	300
RR8-4805D12A1W	18-75	15	297	±5	0	±1200	87	±1250
RR8-4812D12A1W	18-75	15	287	±12	0	±500	90	±200
RR8-4815D12A1W	18-75	15	287	±15	0	±400	90	±120

- One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
- 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, C2) 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 IEC61000-4-4 and IEC61000-4-5 and IEC61000-4-6 . 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.

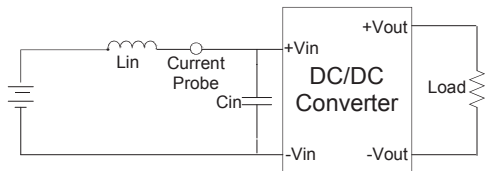


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TEST CONFIGURATIONS

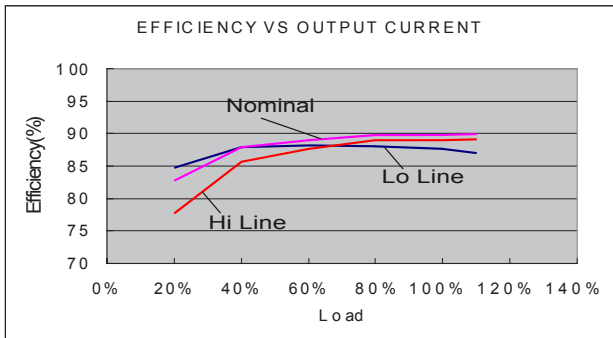
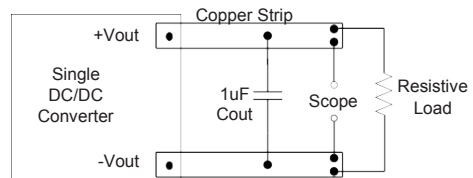
Input Reflected Ripple Current Test Step

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

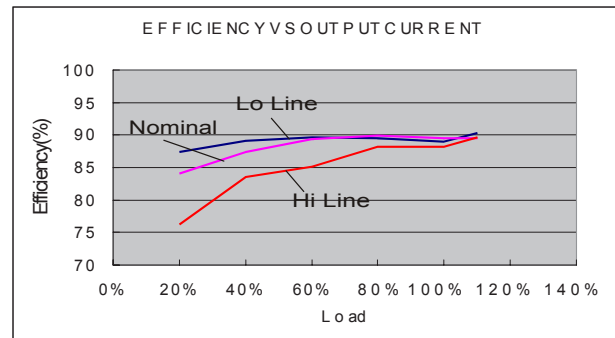


Output Ripple & Noise Measurement Test

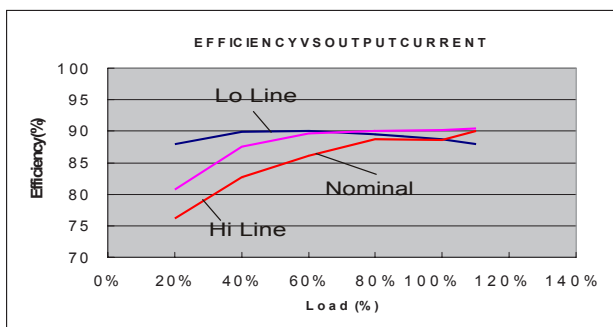
Use a capacitor C_{out} (1.0uF) measurement. The Scope measurement bandwidth is 0-20MHz.



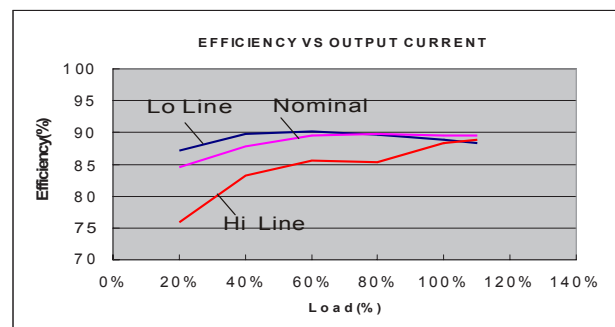
RR8-2405S12_W



RR8-4812S12_W

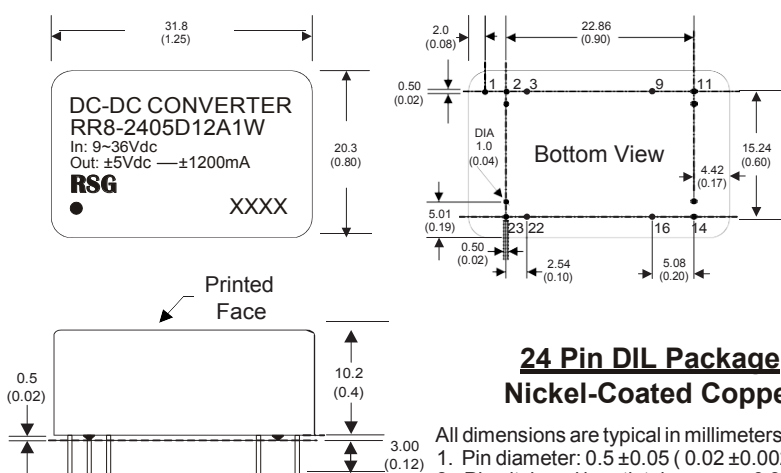


RR8-2412D12_W



RR8-4815D12_W

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 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