RR6-S06/D06

- 24 Pin DIL Package
- Wide 4:1 Input Range
- 1500VDC Isolation
- Up to 3500VDC Isolation
- Continuous Short Circuit Protection
- Efficiency up to 84%
- Operating Temperature Range -40° ~ +85°C
- Metal Case Standard , Optional Plastic Case



RoHS

OUTPUT SPECIFICATION

Voltage accuracy:	±1%
Line regulation:	Single &Dual ±0.5% max.
LOAD REGULATION:	±0.5%
	Output 3.3V Model: ±1.5%
Short Circuit Protection :	Indefinite (Automatic Recovery)
Ripple noise (20Mhz bandwidth):	60mV 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

GENERAL SPECIFICATIONS

Efficiency:	See table typ.
I/O Isolation Voltage Metal Case (3 sec.):	1000VDC
I/O Isolation Voltage (3 sec.):	1500 ~ 3500VDC
I/O Isolation Capacitance:	470pF typ.
I/O Isolation Resistance:	1000M Ohm
Switching Frequency:	266kHz, typ.
Humidity:	95% rel H
Reliability Calculated MTBF : (MIL-HDBK-217 f)	> 1.21MHrs
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
Base Material:	Non-conductive Black Plastic (UL94V-0 rated)
PIN Material:	Ø 0.5mm Brass Solder coated
Potting Material:	Epoxy (UL94V-0 rated)
Weight Case-DIP:	17.0g (Metal), 13.5g (plastic)
Dimmension DIP:	1.25“ x 0.8“ x 0.4“

ABSOLUTE MAXIMUM RATINGS (1)

Input Surge Voltage (100ms)/	
24V Models:	40VDC max.
48V Models:	80VDC max.
Soldering Temperature:	260°C max. (2)

EMC SPECIFICATIONS

Radiated-/Conducted Emissions:	EN55022 Class A
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

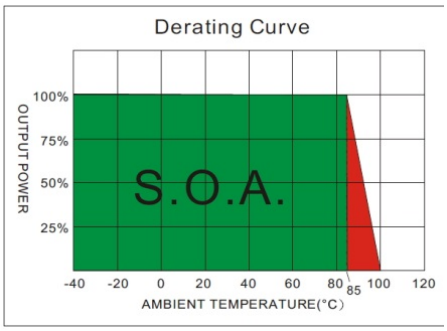
1) These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.
2) (1.5mm from case 10sec Max.)
3) All specifications typical at TA= 25°C, nominal input voltage and full load unless otherwise specified.
4) The information and specification contained 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.

STAND Juni 2016 Rev 01

RR6-S06/D06

NUMBER STRUCTURE

RR6	-	XX	XX	S/D	XX	A	X	X
Name/Package RR6=DIL24		Input 24= 9-36V 48=18-72 V	Output 03=3.3V 05=5.0V 09=9.0V 12=12V 15=15V 24=24V	Type S= Single-Outp. D= Dual-Outp. .	Power (W) 04=4.00 05=5.00 06=6.00	Code internal	Isolation (kVDC) 1= 1.5 3= 3.5	P = Plastic Case Standard =Metal



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)
RR6-2403S06AX	9-36	18	260.1	3.3	0	1400	74	1000
RR6-2405S06AX	9-36	18	312.5	5	0	1200	80	1000
RR6-2407S06AX	9-36	18	304.8	7.2	0	833	82	680
RR6-2409S06AX	9-36	18	301.2	9	0	666.6	83	680
RR6-2412S06AX	9-36	18	304.8	12	0	500	82	330
RR6-2415S06AX	9-36	18	301.2	15	0	400	83	220
RR6-2424S06AX	9-36	18	304.8	24	0	250	82	68
RR6-2403D06AX	9-36	18	333.3	±3.3	0	±909	75	±470
RR6-2405D06AX	9-36	18	312.5	±5	0	±600	80	±470
RR6-2407D06AX	9-36	18	304.8	±7.2	0	±416	82	±470
RR6-2409D06AX	9-36	20	308.6	±9	0	±333	81	±100
RR6-2412D06AX	9-36	20	301.2	±12	0	±250	83	±100
RR6-2415D06AX	9-36	22	312.5	±15	0	±200	80	±47
RR6-2424D06AX	9-36	30	308.6	±24	0	±125	81	±22
RR6-4803S06AX	18-72	15	128.3	3.3	0	1400	75	1000
RR6-4805S06AX	18-72	15	156.2	5	0	1200	80	1000
RR6-4807S06AX	18-72	15	152.4	7.2	0	833	82	220
RR6-4809S06AX	18-72	15	154.3	9	0	666.6	81	220
RR6-4812S06AX	18-72	15	150.6	12	0	500	83	220
RR6-4815S06AX	18-72	15	148.8	15	0	400	84	220
RR6-4824S06AX	18-72	15	152.4	24	0	250	82	220
RR6-4803D06AX	18-72	15	162.3	±3.3	0	±909	77	±330
RR6-4805D06AX	18-72	15	154.3	±5	0	±600	81	±330
RR6-4807D06AX	18-72	15	150.6	±7.2	0	±416	83	±330
RR6-4809D06AX	18-72	15	154.3	±9	0	±333	81	±100
RR6-4812D06AX	18-72	15	152.4	±12	0	±250	82	±68
RR6-4815D06AX	18-72	15	148.8	±15	0	±200	84	±22
RR6-4824D06AX	18-72	15	156.2	±24	0	±125	80	±22

Suffix “3” means 3.5KVdc isolation
Suffix “P” means Plastic case instead of standard Metal Case

STAND Juni 2016 Rev 01

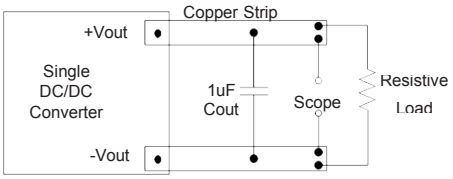
RR6-S06/D06

1. Ripple/Noise measured with a 1uF ceramic capacitor.
2. Test by nominal input voltage and constant resistor load.
3. Measured Input reflected ripple current with a simulated source inductance of 12uH.
4. Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.
5. It's recommended to add C1(220 uF), C3(1000PF,2KV), L(12uH) in input end to achieve EN55022 conducted Class A.
6. An external filter capacitor is required if the module has to meet IEC 61000-4-5. The filter capacitor RSG suggest: Nippon - chemi - con KY series, 220uF/100V.

TEST CONFIGURATIONS

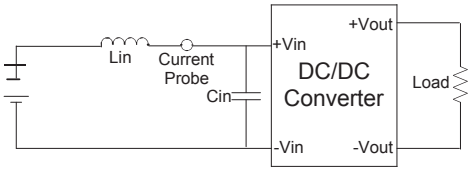
Output Ripple & Noise Measurement Test

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



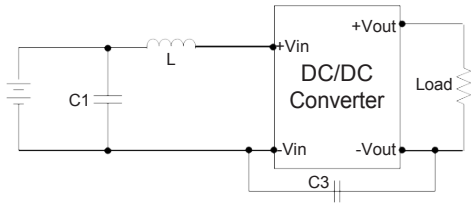
Input Reflected Ripple Current Test Step

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



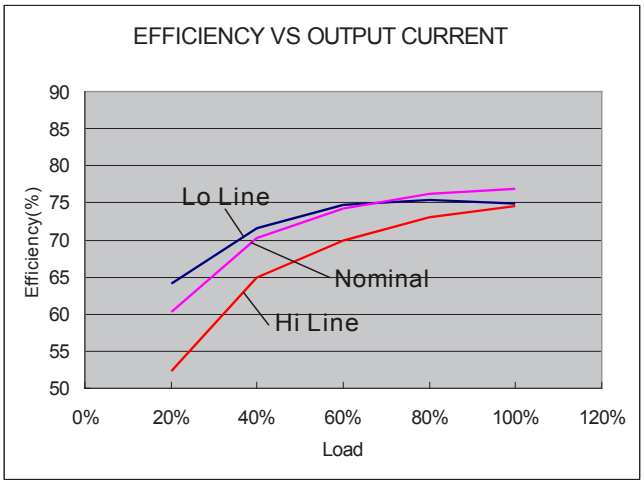
EMI Filter

Input filter components (C1,C3, 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.

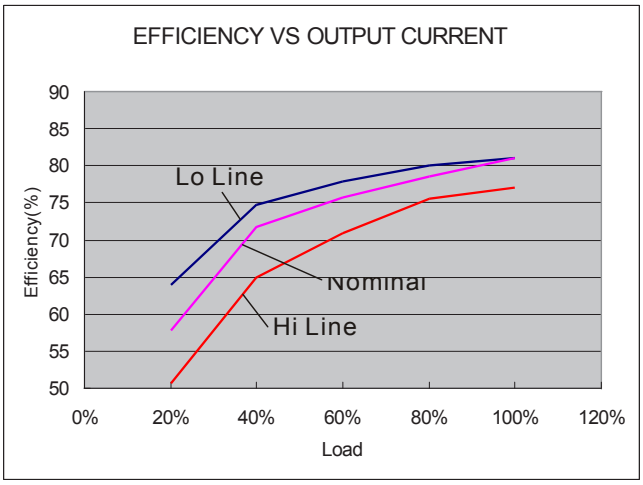


C1	L	C3
220uF, 100V	12uH	1000PF,2KV

ELECTRICAL CHARACTERISTIC CURVES



24 Models

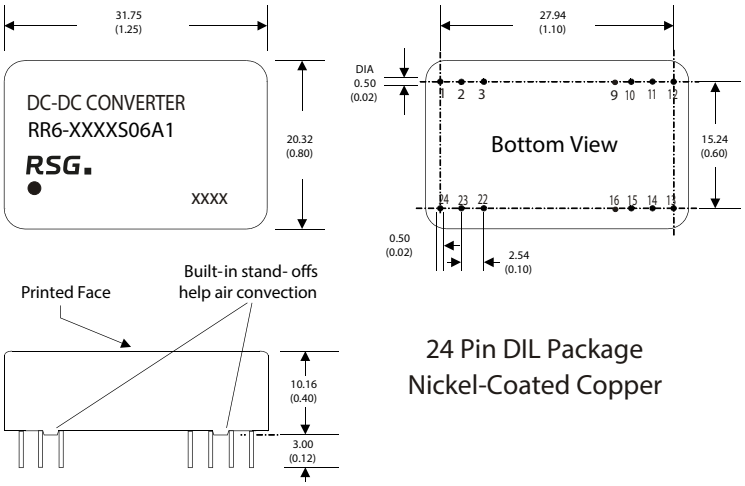


48 Models

STAND Juni 2016 Rev 01

RR6-S06/D06

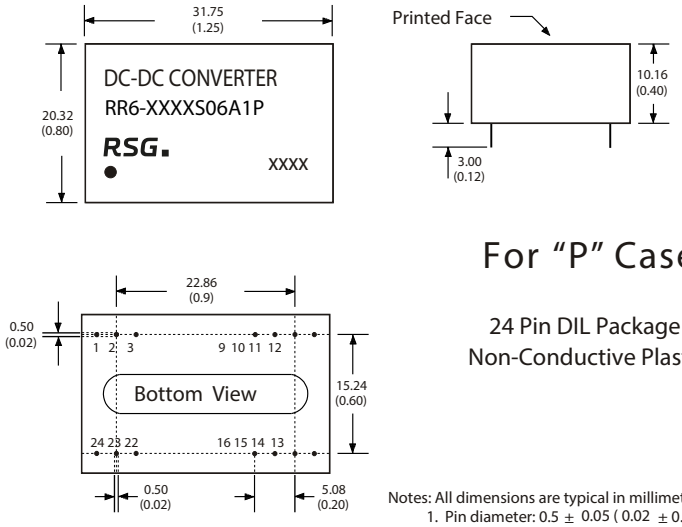
MECHANICAL SPECIFICATIONS



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	SINGLE-H	DUAL-H
1	+V Input	+V Input	N.P.	N.P.
2	N.C.	−V Output	-V Input	−V Input
3	N.C.	Common	-V Input	−V Input
9	N.P.	N.P.	N.P.	Common
10	−V Output	Common	N.P.	N.P.
11	+V Output	+V Output	N.C.	−V Output
12	−V Input	−V Input	N.P.	N.P.
13	−V Input	−V Input	N.P.	N.P.
14	+V Output	+V Output	+V Output	+V Output
15	−V Output	Common	N.P.	N.P.
16	N.P.	N.P.	−V Output	Common
22	N.C.	Common	+V Input	+V Input
23	N.C.	−V Output	+V Input	+V Input
24	+V Input	+V Input	N.P.	N.P.



For “P” Case

24 Pin DIL Package
Non-Conductive Plastic

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	SINGLE-H	DUAL-H
1	+V Input	+V Input	N.P.	N.P.
2	N.C.	−V Output	-V Input	−V Input
3	N.C.	Common	-V Input	−V Input
9	N.P.	N.P.	N.P.	Common
10	−V Output	Common	N.P.	N.P.
11	+V Output	+V Output	N.C.	−V Output
12	−V Input	−V Input	N.P.	N.P.
13	−V Input	−V Input	N.P.	N.P.
14	+V Output	+V Output	+V Output	+V Output
15	−V Output	Common	N.P.	N.P.
16	N.P.	N.P.	−V Output	Common
22	N.C.	Common	+V Input	+V Input
23	N.C.	−V Output	+V Input	+V Input
24	+V Input	+V Input	N.P.	N.P.

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

STAND Juni 2016 Rev 01