RS5-RS60W/RD60W

- 8 Pin SIL Package
- Wide 4:1 Input Range
- 1500VDC Isolation
- Up to 3000VDC Isoltation
- Continuous Short Circuit Protection
- Efficiency up to 88%
- Operating Temperature Range -40° ~ +71°C
- Non Conductive Black Plastic Case
- Remote on/off Control(Optional)

CE

OUTPUT SPECIFICATION	
Voltage accuracy:	±1%
Maximum Output Current:	See table
Line regulation:	± 0.2% max.
LOAD REGULATION:	from 0% to 100% Load: ±1% max.
Cross Regulation (Dual Output):	± 5%
Short Circuit Protection :	Indefinite (Automatic Recovery)
Ripple noise (20Mhz bandwidth):	125mV pk-pk max.
Temperature coefficient:	±0.02%/°C
Capacitor load:	See table
Transient Recovery Time:	250us, typ.
Transient Response:	(Deviation) ±3% - ±5%max.
INPUT SPECIFICATIONS	
Voltage Range:	See table
Start up Time:	30ms,typ.
Max. Input Current:	See table
No-Load/Full-Load Input Current:	See table
Input Filter:	Capacitors
Input Reflected Ripple Current :	20-40mA pk-pk typ.
Remote On/Off (positive logic):	On: Open or high impedance,
	OFF: 2-4mA input current (via 1KOhm)
OFF stand by current (nominal Vin):	2.5mA typ
GENERAL SPECIFICATIONS	
Efficiency:	See table
I/O Isolation Voltage (60sec):	1500 ~ 3000VDC
I/O Isolation Capacitance:	50pF typ.
I/O Isolation Resistance:	1000M Ohm, min
Switching Frequency:	580kHz min.
Humidity:	95% rel H
Reliability Calculated MTBF : (MIL-HDBK-217 f)	> 800KHrs
Safety Standard: (designed to meet):	IEC 60950-1
Remote on Controll:	see note

ENVIRONMENTAL SPECIFICATION	
Operating Temperature range:	-40°C ~+71°C (see Derating Curve)
Maximum Case Temperature:	100°C
Storage Temperature :	-40°C ~+125°C
Cooling :	Nature Convection
PHYSICAL SPECIFICATIONS:	
Case Material:	Non-conductive Black Plastic (UL94V-0 rated),
PIN Material SIP Case:	C519R-H Solder -coated
Weight Case- Sip:	4.8g, typ.
Potting Material:	Epoxy (UL94V-0 rated)
Dimmension SIP:	0.86 x 0.36 x 0.44“
ABSOLUTE MAXIMUM RATINGS (1)	
Input Surge Voltage (100ms)/	
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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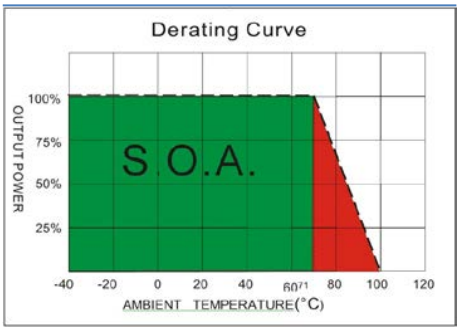
NUMBER STRUCTURE

RS5 - XX XX XX 60 A X W

- RS5 — Name/Package: RS5=SIL8
- XX — Input: 24= 9-36V; 48=18-75V
- XX — Output: 03=3.3V; 05=5.0V; 09=9.0V; 12=12V; 15=15V; 24=24V
- XX — Type: RS=Regulated Single; RD=Regulated Dual
- 60 — Power (W): 60=6.00
- A — Code: internal
- X — Isolation (kVDC): 1= 1.5; 3 = 3.0; W= Input 4:1



MODEL SELECTION GUIDE

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current No-Load (mA, max.)	INPUT Current Full Load (mA, typ.)	OUTPUT Voltage (Vdc)	OUTPUT Current Min. load (mA)	OUTPUT Current Full load (mA)	EFFICIENCY @FL (%, typ.)	Capacitor Load @FL (µF, max.)
RS5-2403RD60A1W	9-36	6	261	3.3	0	1500	79	4700uF
RS5-2405RS60A1W	9-36	6	298	5	0	1200	84	2200uF
RS5-2409RS60A1W	9-36	6	290	9	0	666	86	1000uF
RS5-2412RS60A1W	9-36	6	287	12	0	500	87	470uF
RS5-2415RS60A1W	9-36	6	287	15	0	400	87	220uF
RS5-2424RS60A1W	9-36	6	287	24	0	250	87	100uF
RS5-2405RD60A1W	9-36	6	298	±5	0	±600	84	±330uF
RS5-2412RD60A1W	9-36	6	291	±12	0	±250	86	±220uF
RS5-2415RD60A1W	9-36	6	287	±15	0	±200	87	±100uF
RS5-4803RD60A1W	18-75	6	131	3.3	0	1500	79	4700uF
RS5-4805RS60A1W	18-75	6	151	5	0	1200	83	2200uF
RS5-4809RS60A1W	18-75	6	147	9	0	666	85	1000uF
RS5-4812RS60A1W	18-75	6	144	12	0	500	87	470uF
RS5-4815RS60A1W	18-75	6	144	15	0	400	87	220uF
RS5-4824RS60A1W	18-75	6	144	24	0	250	87	100uF
RS5-4805RD60A1W	18-75	6	152	±5	0	±600	82	±330uF
RS5-4812RD60A1W	18-75	6	147	±12	0	±250	85	±220uF
RS5-4815RD60A1W	18-75	6	145	±15	0	±200	86	±100uF

Suffix “H” means 3KVdc isolation

NOTE

1. One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
2. Measured with a 0.1µF ceramic capacitor.
3. Test by minimal Vin and constant resistive load.
4. Test by normal Vin and 100%-25% load,25% load step change.
5. Measured Input reflected ripple current with a simulated source inductance of 12µH and a source capacitor Cin(47µF, ESR<1.0Ω at 100KH
6. "Nature Convection" is usually about 30-65 LFM but is not equal to still air (0 LFM).
7. Exceeding the absolute ratings of the unit could cause damage. It's not allowed for continuous operating ratings.
8. Input filter components are be required to help meet conducted emission class A, which application refer to the EMI Filter of design & feature configuration.
9. An external filter capacitor is required if the module has to meet IEC61000-4-4 and IEC61000-4-5.
   The filter capacitor RSG suggest: 24Vin models : Nippon - chemi - con KY series, 330uF/100V and a TVS,3KW,75V.
   48Vin models : Nippon - chemi - con KY series, 470uF/100V and a TVS,3KW,130V.

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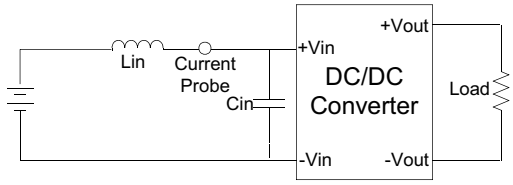
Input Reflected Ripple Current Test Step

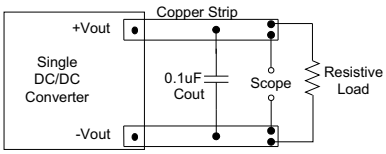
Input reflected ripple current is measured through a source inductor Lin(12μH) and a source capacitor Cin(47μF, ESR<1.0Ω at 100KHz) at nominal input and full load.



TEST CONFIGUARATIONS

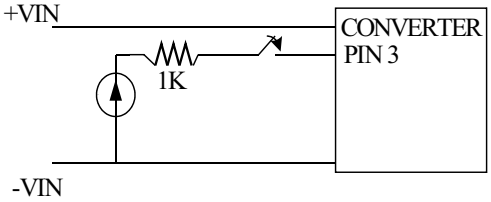
Output Ripple & Noise Measurement Test

Use a capacitor Cout(0.1μF) measurement.
The Scope measurement bandwidth is 0-20MHz.



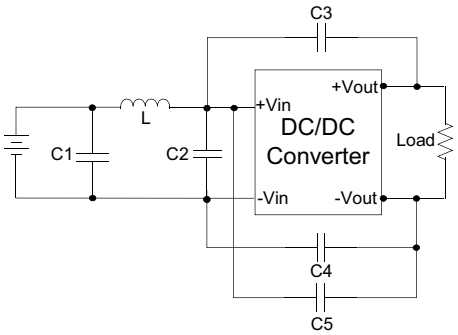
CTRL Module ON / OFF

ON: open or high impedance
OFF: 2-4mA input current (via 1K)



EMI Filter

Input filter components (C1,C2,C3,C4,C5, 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 &C2	L	C3 & C4	C5
RS5 24V in	MLCC 10uF/35V	12uH	MLCC 470pF/3KV	
RS5 48V in	MLCC 2.2uF/100V	12uH	MLCC 1000pF/3KV	MLCC 1000pF/3KV

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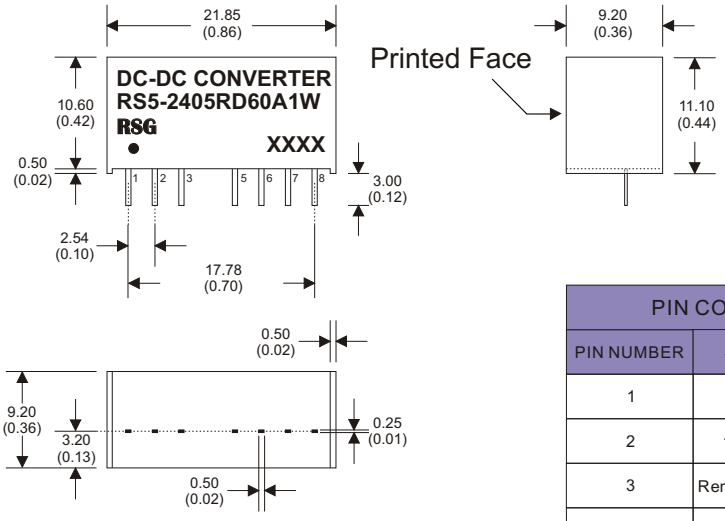
MECHANICAL SPECIFICATIONS



8 Pin SIL Package

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. Pin to case tolerance: ±0.5 (±0.02)
4. Case Tolerance: ±0.5 (±0.02)
5. Stand-off tolerance: ±0.1 (±0.004)

PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
1	-V Input	-V Input
2	+V Input	+V Input
3	Remote On/Off	Remote On/Off
5	N.C.	N.C.
6	+V Output	+V Output
7	-V Output	Common
8	N.C	-V Output

PIN CONNECTIONS		
PIN NUMBER	SINGLE + H	DUAL + H
1	-V Input	-V Input
2	+V Input	+V Input
3	Remote On/Off	Remote On/Off
5	N.P.	N.P.
6	+V Output	+V Output
7	-V Output	Common
8	N.C	-V Output

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

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