RS2-S20M/D20M

- 7 Pin SIL Package
- 1000VDC Isolation
- Up to 3000VDC Isolation
- Low Ripple and Noise
- Efficiency up to 89%
- Operating Temperature Range: -40° ~ +85°C
- Non Conductive Black Plastic Case
- EMI Complies with EN55022 Class B

RoHS

OUTPUT SPECIFICATION	
Voltage accuracy:	±2~4%
Line regulation:	per 1%Vin Change: ±1.2%
LOAD REGULATION:	from 10% to 100% Load: see table
Ripple noise:	50mV pK -pk
Temperature coefficient:	±0.02%°C
Capacitor load:	See table

INPUT SPECIFICATIONS	
Voltage Range:	±10%
Max. Input Current:	See table
No-Load/Full-Load Input Current:	See table
Input Filter:	Capacitors
Input Reflected Ripple Current :	25-40mA pk-pk by 5-24V

GENERAL SPECIFICATIONS	
Efficiency:	See table
I/O Isolation Voltage (60sec):	1000 ~ 3000VDC
I/O Isolation Capacitance:	60pF typ.
I/O Isolation Resistance:	1000M Ohm
Switching Frequency:	Variable 70kHz
Humidity:	95% rel H
Reliability Calculated MTBF : (MIL-HDBK-217 f)	>1.9MHrs
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:	Non-conductive Black Plastic (UL94V-0 rated)
PIN Material:	C5191R-H Solder coated
Potting Material:	Epoxy (UL94V-0 rated)
Weight Case- Sip:	2.8g
Dimmension SIP:	0.76 x 0.28 x 0.39“

ABSOLUTE MAXIMUM RATINGS (1)	
Input Surge Voltage (100ms)/	
5 V Models:	9VDC max
12V Models:	18VDC max
15V Models:	20VDC max
24V Models:	30VDC max
Soldering Temperature:	260°C max.

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

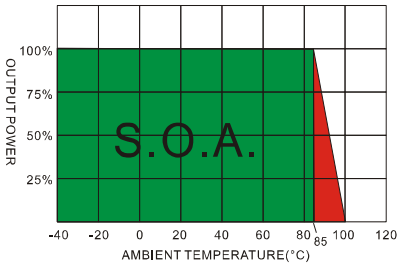
RS2-S20M/D20M

NUMBER STRUCTURE

RS2 - XX XX X XX A X M

- RS2 - Name/Package: RS2=SIL7
- XX - Input: 05=5.0V, 12=12V, 15=15V, 24=24V, 48=48V
- XX - Output: 05=5.0V, 09=9.0V, 12=12V, 15=15V
- X - Type: S=Single, D=Dual
- XX - Power (W): 10=1.00, 20=2.00
- A - Code: internal
- X - Isolation (kVDC): 1= 1.0, 3= 3.0
- M

Derating Curve



MODEL SELECTION GUIDE

MODEL NUMBER	INPUT Voltage Range	INPUT Current No-Load	INPUT Current Full Load	OUTPUT Voltage	OUTPUT Current Full load	LOAD Regulation	EFFICIENCY	Capacitor
RS2- 0505D20AXM	5	50	488	±5	±200	5	82	±100
RS2-0509D20AXM	5	50	471	±9	±111.1	3.9	85	±100
RS2-0512D20AXM	5	50	465	±12	±83.3	3.7	86	±47
RS2-0515D20AXM	5	50	460	±15	±66.6	4	87	±47
RS2-1205D20AXM	12	40	200	±5	±200	3.4	84	±100
RS2-1209D20AXM	12	40	189	±9	±111.1	2.4	88	±100
RS2-1212D20AXM	12	40	187	±12	±83.3	2.2	89	±47
RS2-1215D20AXM	12	40	187	±15	±66.6	1.9	89	±47
RS2-1505D20AXM	15	30	157	±5	±200	3.4	85	±100
RS2-1509D20AXM	15	30	152	±9	±111.1	2.4	88	±100
RS2-1512D20AXM	15	30	152	±12	±83.3	2.2	88	±47
RS2-1515D20AXM	15	30	152	±15	±66.6	1.9	88	±47
RS2-2405D20AXM	24	20	102	±5	±200	3.5	82	±100
RS2-2409D20AXM	24	20	98	±9	±111.1	2.4	85	±100
RS2-2412D20AXM	24	20	97	±12	±83.3	2.2	86	±47
RS2-2415D20AXM	24	20	96	±15	±66.6	1.9	87	±47
RS2-0505S20AXM	5	50	494	5	400	6	81	220
RS2-0509S20AXM	5	50	471	9	222.2	4.2	85	220
RS2-0512S20AXM	5	50	471	12	166.6	3.8	85	100
RS2-0515S20AXM	5	50	465	15	133.3	4.5	86	100
RS2-1205S20AXM	12	40	198	5	400	4.2	84	220
RS2-1209S20AXM	12	40	194	9	222.2	2.8	86	220
RS2-1212S20AXM	12	40	189	12	166.6	2.4	88	100
RS2-1215S20AXM	12	40	189	15	133.3	2.2	88	100
RS2-1505S20AXM	15	30	157	5	400	4	85	220
RS2-1509S20AXM	15	30	153	9	222.2	2.6	87	220
RS2-1512S20AXM	15	30	153	12	166.6	2.4	87	100

Suffix “3” means 3 K Vdc isolation Type M = Semi regulated

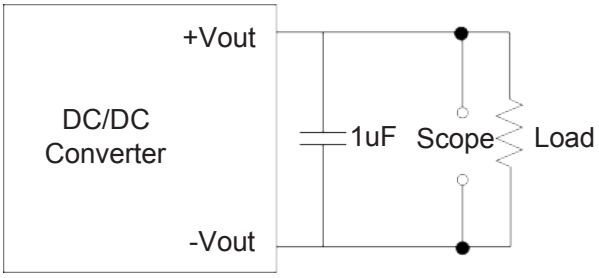
1. Ripple/Noise measured with 20MHz bandwidth and 1.0uF ceramic capacitor.
2. Tested by minimal Vin and constant resistive full load.
3. Input filter components (C1, L,C2, C3) are used to help meet conducted emissions requirement for the module.
   These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.
4. An external filter capacitor is required if the module has to meet IEC61000-4-4
   The filter capacitor RSG suggest: Nippon chemi-con KY series, 220uF/100V.
5. Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.
6. Operation under no-load conditions will not damage these devices, however they may not meet all listed specifications.

STAND Juni 2016 Rev 01

RS2-S20M/D20M

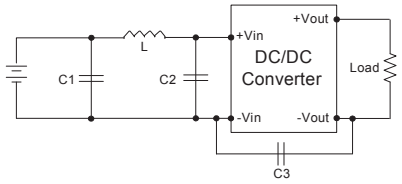
Output Ripple & Noise Measurement Test

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

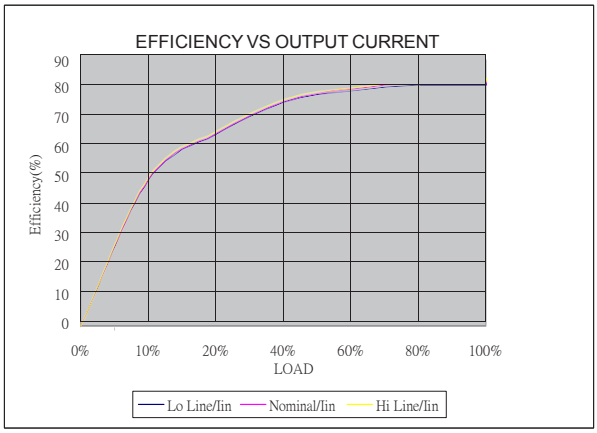


EMI Filter

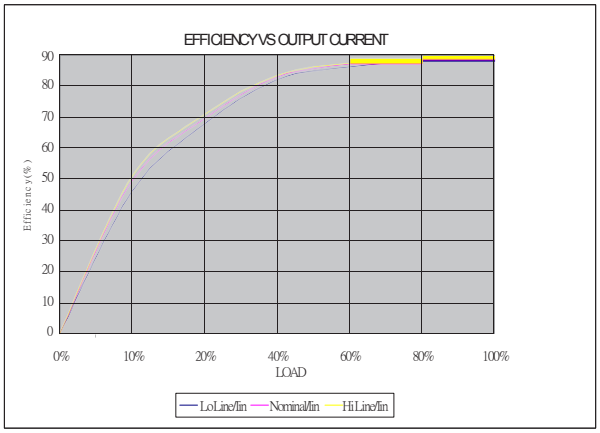
Input filter components (C1,L,C2,C3) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.



	C1	L	C2	C3
RS2-05XXS20/D20AXM	1210, 2.2uF/100V	18uH		
RS2-12XXS20/D20AXM	1210, 2.2uF/100V	18uH		
RS2-15XXS20/D20AXM	1210, 2.2uF/100V	18uH		
RS2-24XXS20/D20AXM	1210, 2.2uF/100V	18uH	1210, 2.2uF/100V	1206, 470pF/2KV



RS2-0505S20AXM



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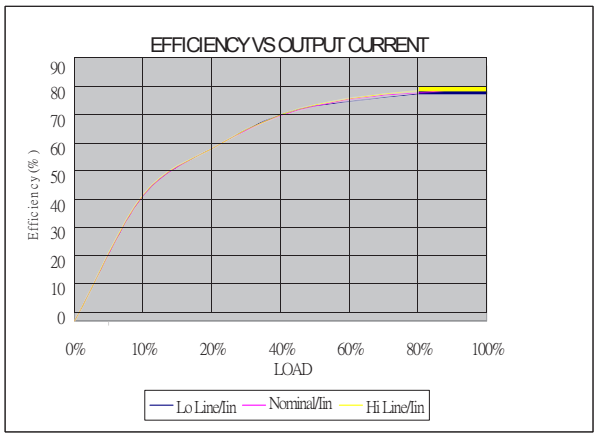
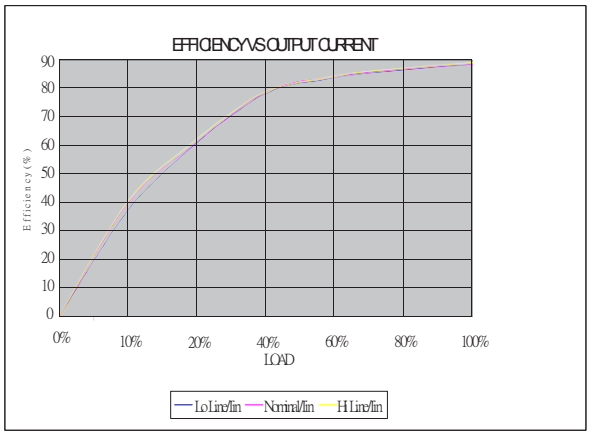


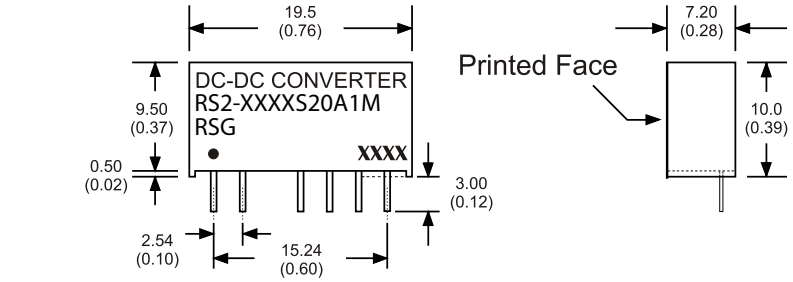
RS2-2405S20AXM

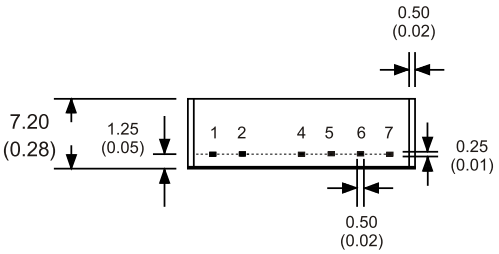


RS2-2415S20AXM

STAND Juni 2016 Rev 01

RS2-S20M/D20M





7 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. Case Tolerance: ±0.5 (±0.02)

PIN CONNECTIONS				
PIN NUMBER	SINGLE	DUAL	SINGLE-H	DUAL-H
1	+V Input	+V Input	+V Input	+V Input
2	−V Input	−V Input	−V Input	−V Input
4	−V Output	−V Output	N.P.	N.P.
5	N.P.	Common	−V Output	−V Output
6	+V Output	+V Output	N.P.	Common
7	N.P.	N.P.	+V Output	+V Output

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