

# RS2-S10T/D10T

- 7 Pin SIL Package
- 1500VDC Isolation
- Up to 3000VDC Isolation
- Continuous Short Circuit Protection
- Low Ripple and Noise
- Efficiency up to 81%
- Operating Temperature Range:  
-40° ~ +105°C
- Non Conductive Black Plastic Case
- EMI Complies with EN55022 Class B

RoHS



OUTPUT SPECIFICATION	ENVIRONMENTAL SPECIFICATION
Voltage accuracy: see tolerance envelope curve	Operating Temperature range: -40°C ~+105°C (see Derating Curve)
Line regulation: per 1%Vin Change: ±1.2%	Maximum Case Temperature: 115°C
LOAD REGULATION: from 10% to 100% Load: ±7.5 ~ ±10%	Storage Temperature : -55°C ~+125°C
Cross Regulation (Dual Output): ±4%	Cooling : Nature Convection
Short Circuit Protection : continuous, auto recovery	PHYSICAL SPECIFICATIONS:
Ripple noise (20Mhz bandwidth): 75mV pk-pk	Case Material: Non-conductive Black Plastic (UL94V-0 rated)
Temperature coefficient: ±0.02% °C	PIN Material SIP Case: C5191R-H Solder coated
Capacitor load: see table	Potting Material: Epoxy (UL94V-0 rated)
INPUT SPECIFICATIONS	Weight Case- Sip: 2.4g
Voltage Range: ±10%	Dimmension SIP: 0.76 x 0.24 x 0.39"
Max. Input Current: See table	ABSOLUTE MAXIMUM RATINGS (1)
No-Load/Full-Load Input Current: See table	Input Surge Voltage (100ms)/
Input Filter: Capacitors	5 V Models: 9VDC max
Input Reflected Ripple Current: 15mA pk-pk	12V Models: 18VDC max
Start up time: 20ms typ. <small>(nominal Vin and constant-resistance load)</small>	24V Models: 30VDC max
GENERAL SPECIFICATIONS	Soldering Temperature <sup>(2)</sup> : 260°C max.
Efficiency: See table	EMC SPECIFICATIONS
I/O Isolation Voltage (60sec): 1500 ~ 3000VDC	Radiated-/Conducted Emissions: EN55022 Class B
I/O Isolation Capacitance: 50pF typ.	ESD: IEC 61000-4-2 Perf.Criteria A
I/O Isolation Resistance: 1000M Ohm	RS: IEC 61000-4-3 Perf.Criteria A
Switching Frequency: Variable 50kHz	EFT: IEC 61000-4-4 Perf.Criteria A
Humidity: 95% rel H	SURGE: IEC 61000-4-5 Perf.Criteria A
Reliability Calculated MTBF : >3.6Mhrs <small>(MIL-HDBK-217 f)</small>	CS: IEC 61000-4-6 Perf.Criteria A
Safety Standard: (designed to meet): IEC 60950-1	PFMF IEC 61000-4-8 Perf.Criteria A

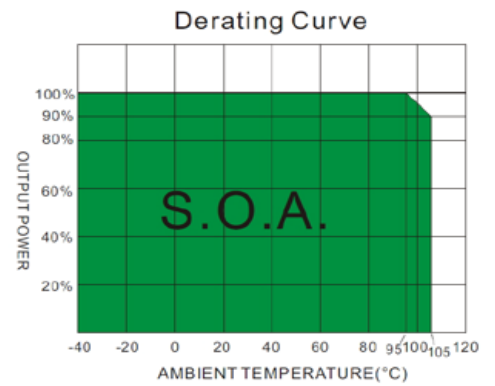
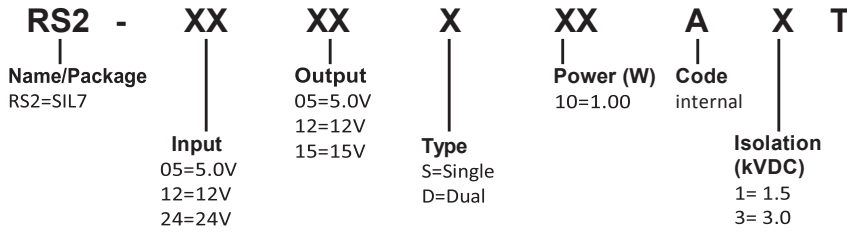
1) These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.

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.

**NUMBER STRUCTURE**



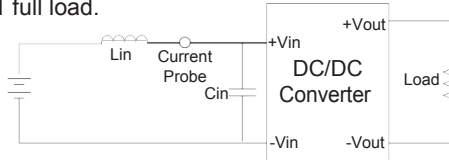
**MODEL SELECTION GUIDE**

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current		EFFICIENCY @ FL (%)	Capacitor Load (uF)
		No-Load (mA)	Full Load (mA)		Full load (mA)			
RS2-05 05 S10AXT	5 ( 4.5 ~ 5.5 )	40	253	5	200	80	220	
RS2-05 12 S10AXT	5 ( 4.5 ~ 5.5 )	40	253	12	83.3	80	100	
RS2-05 15 S10AXT	5 ( 4.5 ~ 5.5 )	40	253	15	66.7	80	100	
RS2-12 05 S10AXT	12 ( 10.8 ~ 13.2 )	18	105	5	200	80	220	
RS2-12 12 S10AXT	12 ( 10.8 ~ 13.2 )	18	105	12	83.3	80	100	
RS2-12 15 S10AXT	12 ( 10.8 ~ 13.2 )	18	104	15	66.7	81	100	
RS2-24 05 S10AXT	24 ( 21.6 ~ 26.4 )	9	53	5	200	80	220	
RS2-24 12 S10AXT	24 ( 21.6 ~ 26.4 )	9	53	12	83.3	80	100	
RS2-24 15 S10AXT	24 ( 21.6 ~ 26.4 )	9	53	15	66.7	80	100	
RS2-05 05 D10AXT	5 ( 4.5 ~ 5.5 )	40	253	±5	±100	80	±100	
RS2-05 12 D10AXT	5 ( 4.5 ~ 5.5 )	40	253	±12	±41.67	80	±47	
RS2-05 15 D10AXT	5 ( 4.5 ~ 5.5 )	40	250	±15	±33.33	81	±47	
RS2-12 05 D10AXT	12 ( 10.8 ~ 13.2 )	18	105	±5	±100	80	±100	
RS2-12 12 D10AXT	12 ( 10.8 ~ 13.2 )	18	105	±12	±41.67	80	±47	
RS2-12 15 D10AXT	12 ( 10.8 ~ 13.2 )	18	105	±15	±33.33	80	±47	
RS2-24 05 D10AXT	24 ( 21.6 ~ 26.4 )	9	53	±5	±100	80	±100	
RS2-24 12 D10AXT	24 ( 21.6 ~ 26.4 )	9	53	±12	±41.67	80	±47	
RS2-24 15 D10AXT	24 ( 21.6 ~ 26.4 )	9	53	±15	±33.33	80	±47	

Suffix "3" means 3 K Vdc isolation

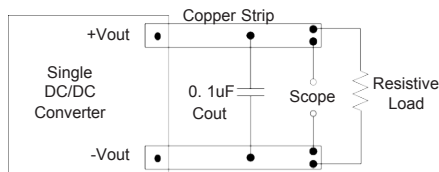
### Input Reflected Ripple Current Test Step

Input reflected ripple current is measured through a source inductor  $L_{in}$  (12 $\mu$ H) and a source capacitor  $C_{in}$  (47 $\mu$ F, ESR<1.0 $\Omega$  @ aRS200KHz) at nominal input and full load.



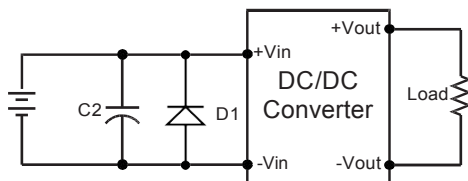
### Output Ripple & Noise Measurement Test

Use a capacitor  $C_{out}$  (0.1  $\mu$ F) measurement. The Scope measurement bandwidth is 0-20MHz.



### SURGE Filter

Input components (C2, D1) are used to help meet surge test requirement for the module.

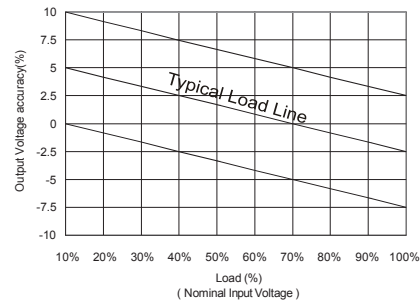


	C2	D1
RS2-05XXS10/D10AXT	1000 $\mu$ F/35V	3.0SMCJ9.0AG
RS2-12XXS10/D10AXT	1000 $\mu$ F/35V	3.0SMCJ18AG
RS2-24XXS10/D10AXT	330 $\mu$ F/50V	3.0SMCJ28AG

### Output Voltage Tolerance Envelope Curve

The voltage tolerance envelope shows typical load regulation characteristics for this product series.

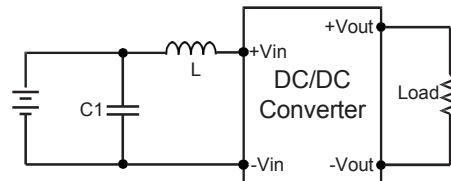
The tolerance envelope is the maximum output voltage variation due to changes in output loading.



### EMI Filter

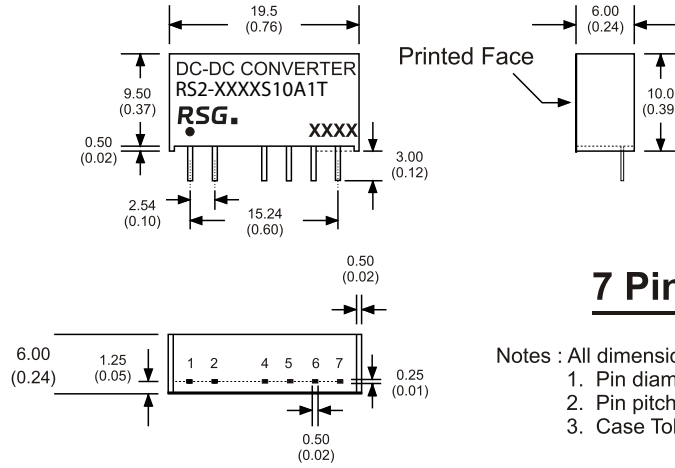
Input filter components (C1, L) are used to help meet conducted emiS10A1Tions requirement for the module.

These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.



	C1	L
RS2-05XXS10/D10AXT	1206, 4.7 $\mu$ F/50V	6.8 $\mu$ H
RS2-12XXS10/D10AXT	1206, 4.7 $\mu$ F/50V	6.8 $\mu$ H
RS2-24XXS10/D10AXT	1206, 4.7 $\mu$ F/50V	6.8 $\mu$ H

RS2-S10T/D10T



**7 Pin SIL Package**

- Notes : All dimensions are typical in millimeters ( inches ).
1. Pin diameter:  $0.5 \pm 0.05$  (  $0.02 \pm 0.002$  )
  2. Pin pitch and length tolerance:  $\pm 0.35$  (  $\pm 0.014$  )
  3. Case Tolerance:  $\pm 0.5$  (  $\pm 0.02$  )

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](mailto:sales@rsg-electronic.de) or +49 69-984047-41/-28