EOL

DC/DC Regulator
SRL 1A Series

* DC/DC module without galvanic separation
* High efficiency
* Short circuit proof
* Fast action feed-back module
* No derating up to 75°C ambient temperature
* Very low output ripple
* Low silhouette
* EMC according to EN55022/11 Class B

Product Range

Model	Input		Iin @ Uin nom.		Output			Efficiency	Max.
	nominal	range	full load	no load	Uout	Iout max.	power	typ.	capacity
Single									
SRL3303-12	24Vdc	4.8...40VDC		10mA	3.3Vdc	1000mA	3.3W	75%	
SRL5005-12	24Vdc	4.8...40VDC		10mA	5.1Vdc	1000mA	5W	82%	
SR1212-12	24Vdc	14...40VDC		10mA	12Vdc	1000mA	12W	88%	
SR1515-12	24Vdc	17...40VDC		10mA	15Vdc	1000mA	15W	90%	

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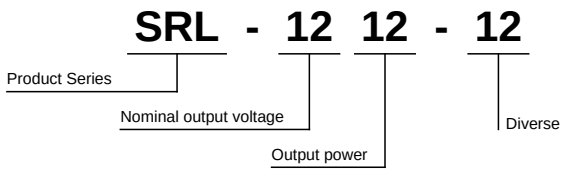
Nomenclature



Specifications

All values refer to an ambient temperature of 25°C and nominal rated values where nothing else is specified.

Input Specifications

Characteristic		Conditions	min	typ	max	unit
U_{IN}	Input voltage		4.8/7/14/17	24	40	Vdc
U_{UVLO}	Under voltage lockout					Vdc
	Max. input current at full load					A
	No load input current		See	product	range	mA
	Inrush current					A^2s
	Input surge voltage					Vdc

Output Specifications

Characteristic		Conditions	min	typ	max	unit
U_{ACC}	Output voltage accuracy			±2		%
	Output voltage adjust					%
	Line regulation				±2	%
	Load regulation				±1.5	%
	Cross regulation					%
	Load transient recovery time					us
	Load transient error band					%
	Temperature coefficient					%/K
	Ramp up time					ms
	Start up time					ms
	Ripple and noise			max. 60		mVpp
	Current limit					% Inom
	Over voltage protection					% Unom
	Short circuit protection					% Inom
	Short circuit characteristic			continuous		

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General Specifications

Characteristic		Conditions	min	typ	max	unit
U_{ISO}	Isolation voltage					
R_{ISO}	Isolation resistance					Ohm
C_{ISO}	Isolation capacity					pF
F_{SW}	Switching frequency			52		kHz
	Approvals					
	Safety Approvals					
	MTBF			>1'000'000		h
	Case material			Plastic UL94-V0		
	Compound material			Two component resin UL94-V0		
	PCB material			FR4 UL94-V0		
	Weight			17		gr
	Dimensions			32.0 x 20.0 x 12.0		mm
	Soldering infos			275°C for 10		s

EMC Specifications

Characteristic		Conditions	
	EMC conducted	See EMC information	EN55022/11 Class B

Environmental Specifications

Characteristic		Conditions	min	typ	max	unit
T_{AMB}	Operation temperature			-40...+75		°C
T_{AMB}	Storage temperature					°C
T_{SD}	Thermal shutdown range			Tcase = 100		°C

Own notes

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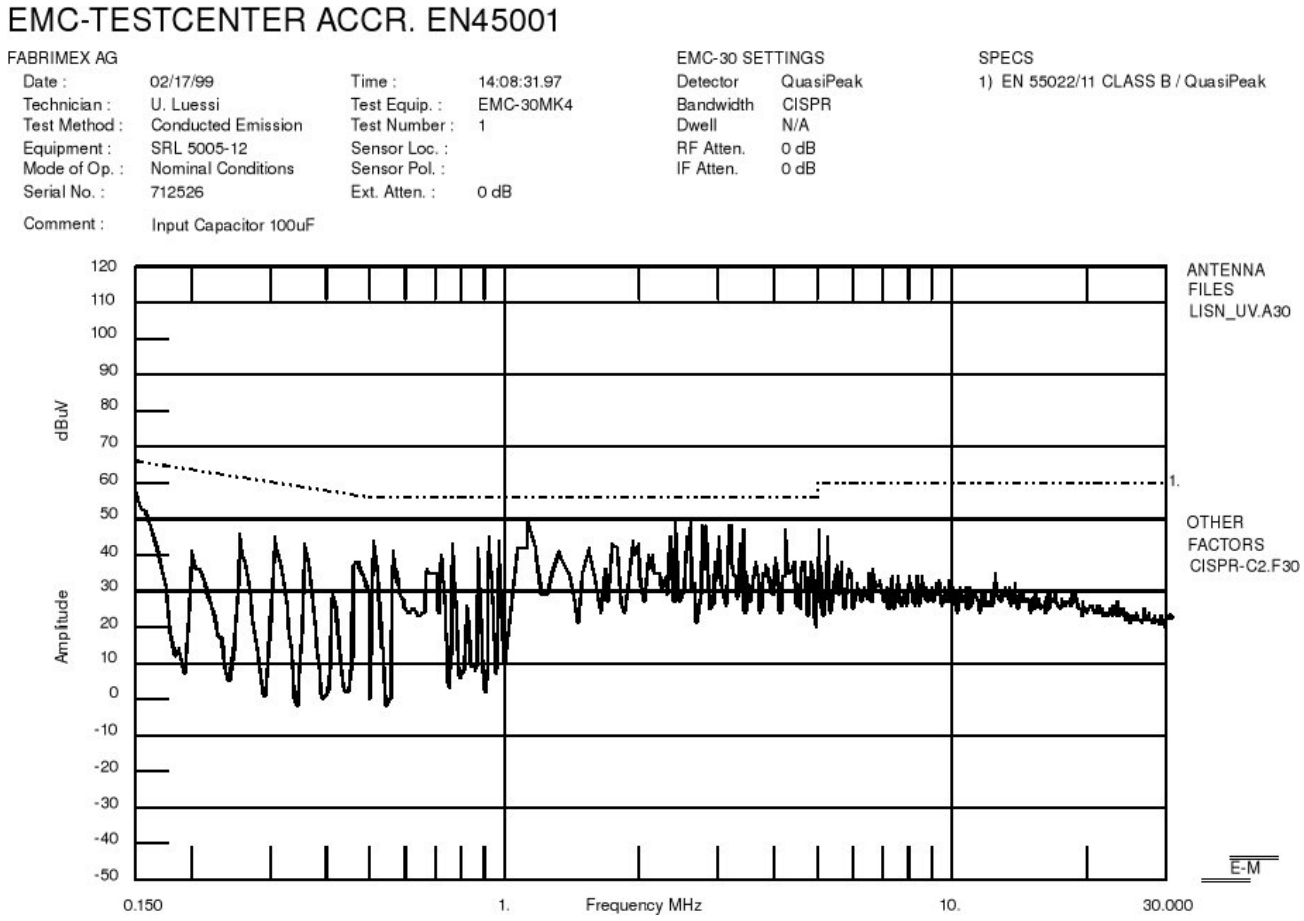
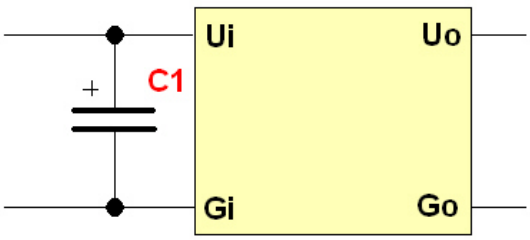
EMC information

EMC emissions conducted, EN55022/11 Class B, Example:





This was achived with the following filter:
Vin = 24V
C1 = 100uF

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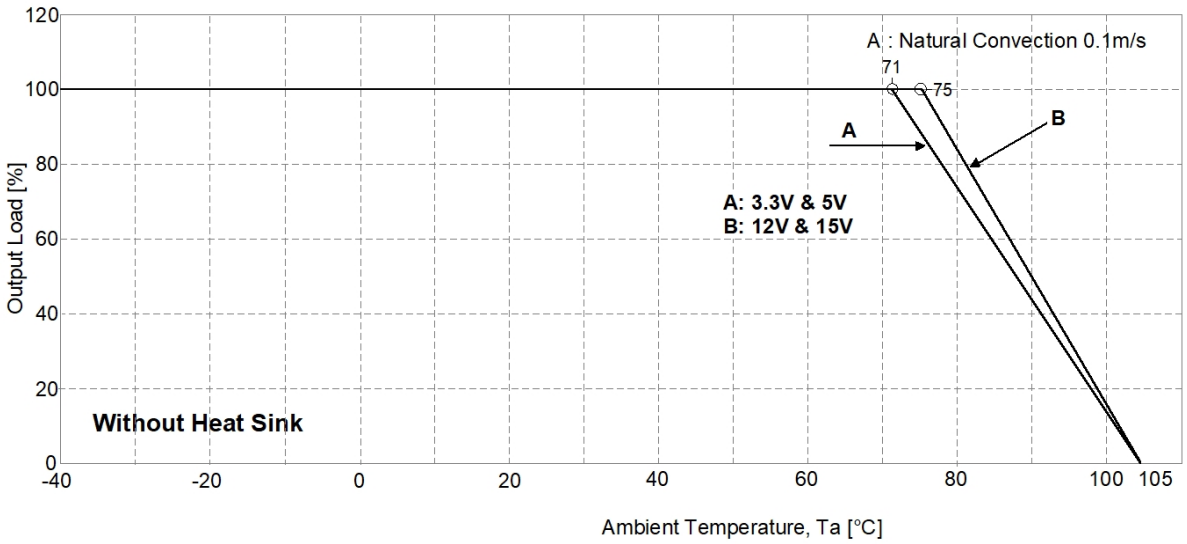
Derating

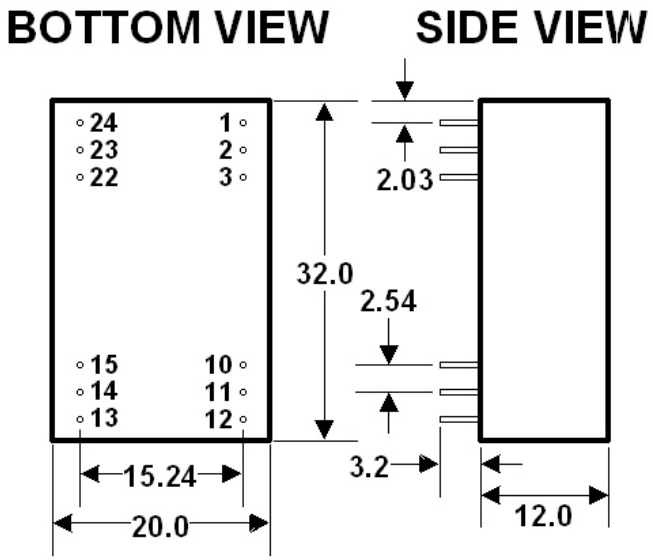
The operating case temperature range of SRL 1A series is -40...+75°C. When operating the SRL 1A series, proper derating or cooling is needed. The following curves are the derating curves of SRL 1A. Please note that these are relative values in a test environment. Ambient temperature can not be exactly defined in an application, only the case temperature.Please ask the factory for a suitable heat sink.



Own notes

Case

Normal tolerance 1/10 ±0.5 mm, 1/100 ±0.25 mm; Pin tolerance ±0.05 mm diameter
NP = No pin, NC = Not connected, NA = Not available for electrical contact, do not connect, (opt) = optional



Pin	Single
1	Vi
2	NC
3	NC
10	Go
11	+Vo
12	Gi
13	Gi
14	+Vo
15	Go
22	NC
23	NC
24	Vi

Cleaning

The modules are cleanable with the today's known and in the electronics industry usually used products. Due to the different cleaning processes and new available products, we highly recommend to do a compatibility test when using the converters the first time.

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Own notes

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