

Features

- Low cost
- 1:1 Input voltage range
- Efficiency up to 81%
- 4kVDC/1 second isolation
- IEC/EN/UL 62368-1 certified
- Post regulated

Regulated Converters



RWK

1 Watt
SIP7
Single Output



Description

The RWK DC/DC converters are typically used in cost sensitive general purpose power isolation and voltage matching applications. Despite their low cost, they are fully specified converters with a built-in linear regulator to give a regulated, load-independent output. The converters are equipped with 4kVdc isolation, industrial operating temperature range of -40°C to +105°C without derating, and UL/EN certifications.

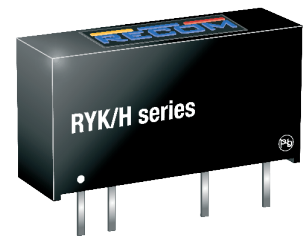
Selection Guide

Part Number	nom. Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ. ⁽¹⁾ [%]	max. Capacitive Load ⁽²⁾ [µF]
RWK-0505S/H	5	5	200	81	3000
RWK-053.3S/H	5	3.3	303	75	3000

Notes:

Note1: Efficiency is tested at nominal input and full load at +25°C ambient

Note2: Max Cap Load is tested at nominal input and full resistive load



Model Numbering



UL62368-1 certified
CAN/CSA-C22.2 No. 62368-1 certified
IEC/EN62368-1 certified
EN55032 compliant

Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Internal Input Filter				internal capacitors
Input Voltage Range			±10%	
Absolute Maximum Input Voltage ⁽³⁾				6VDC
Input Current	5Vout 3.3Vout			250mA 230mA
Start-up Time				50ms
Minimum Load		0%		
Internal Operating Frequency	100% load			1MHz
Output Ripple and Noise ⁽⁴⁾	20MHz BW		60mVp-p	

Notes:

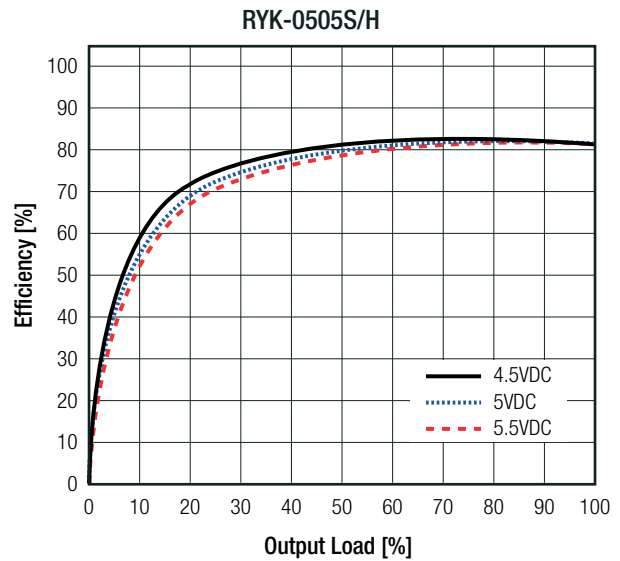
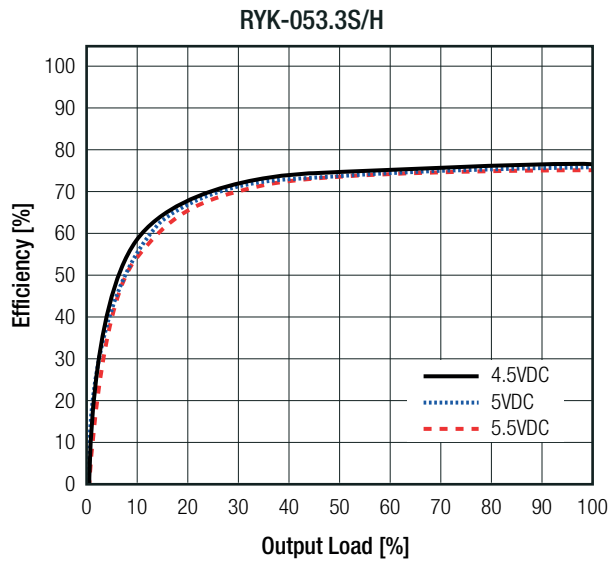
Note3: An 4.7µF/10V MLCC at input terminal is recommended if transient input voltage above 6VDC.

Note4: Measurements are made with a 0.1µF MLCC across output. (low ESR)

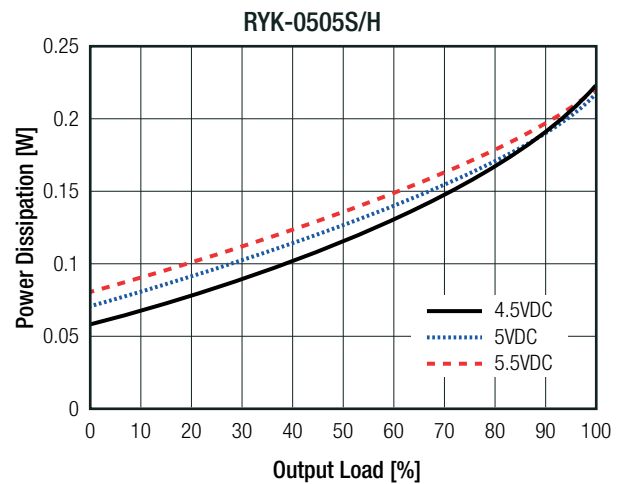
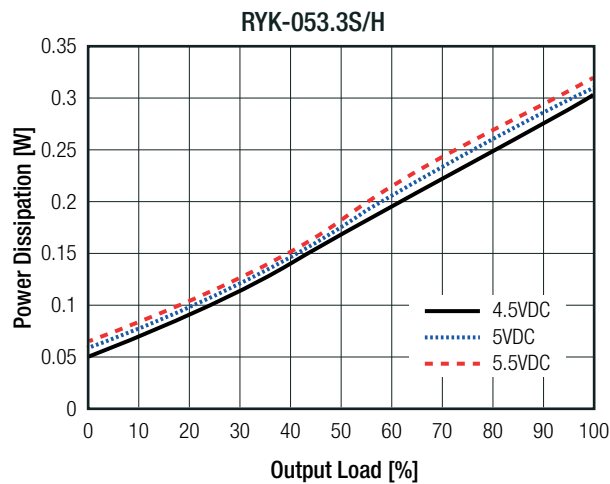
continued on next page

Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

Efficiency vs. Load



Power Dissipation vs. Load

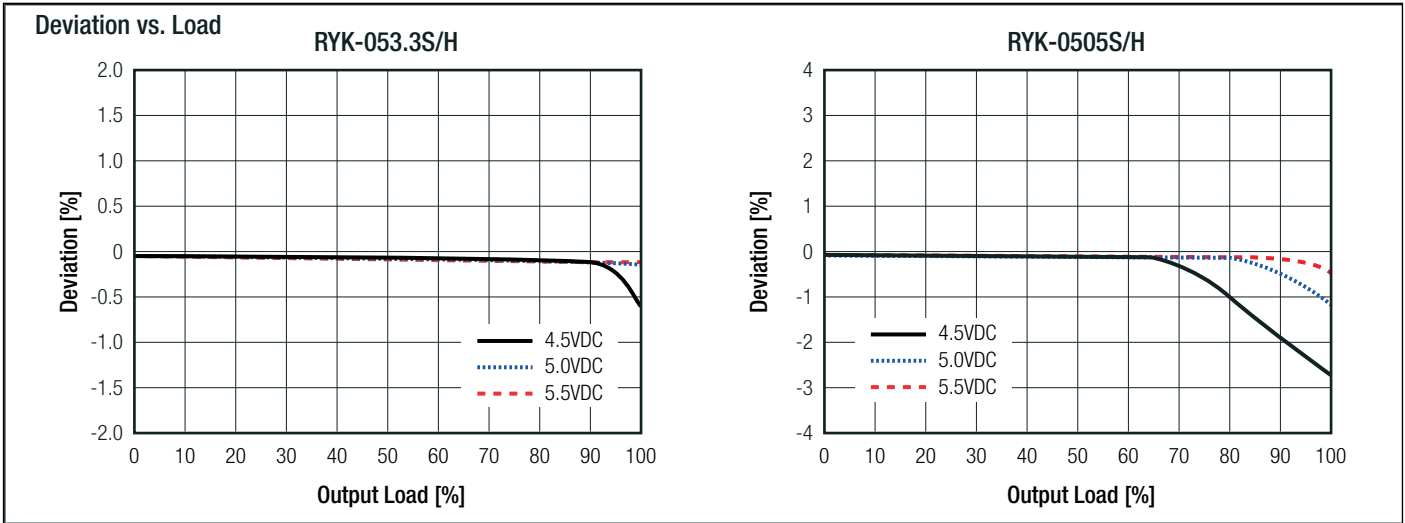


REGULATIONS

Parameter	Condition		Output Current	Value
Output Accuracy	5Vout		0-150mA >150mA	±1.0% max. refer to „Deviation vs. Load“
	3.3Vout		0-250mA >250mA	±1.0% max. refer to „Deviation vs. Load“
Line Regulation	low line to high line	5Vout	0-150mA >150mA	±1.0% max. refer to „Deviation vs. Load“
		3.3Vout	0-250mA >250mA	±0.5% max. refer to „Deviation vs. Load“
Load Regulation	0% to 75% load 75% to 100% load	5Vout		±1.0% max. refer to „Deviation vs. Load“
	0% to 80% load 80% to 100% load	3.3Vout		±1.0% max. refer to „Deviation vs. Load“

continued on next page

Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)



PROTECTIONS

Parameter	Type	Value
Short Circuit Protection (SCP)	short circuit impedance	<0.1Ω
Isolation Voltage ⁽⁵⁾	I/P to O/P	1 second
		1 minute
Isolation Resistance	I/P to O/P, V _{iso} = 500VDC	1GΩ min.
Isolation Capacitance	I/P to O/P, 100kHz/0.1V	10pF typ.

Notes:

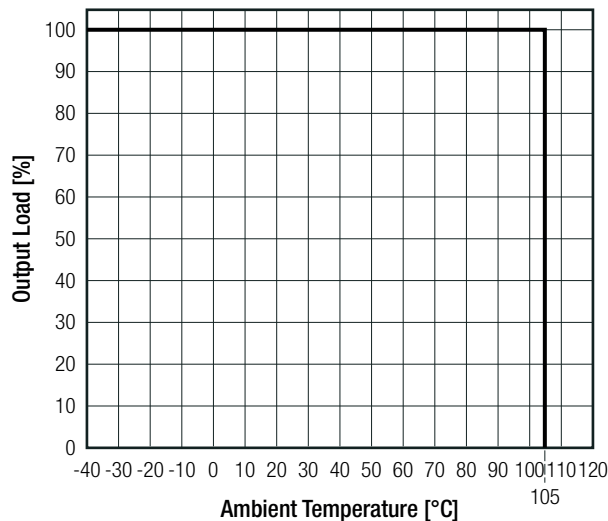
Note5: For repeat Hi-Pot testing, reduce the time and/or the test voltage

ENVIRONMENTAL

Parameter	Condition		Value
Operating Temperature Range	@ natural convection 0.1m/s	full load	-40°C to +105°C
Maximum Case Temperature			120°C
Operating Altitude			2000m
Operating Humidity	non-condensing		95% RH max.
Pollution Degree			PD2
MTBF	according to MIL-HDBK-217F, G.B.	+85°C	2500 x 10 ³ hours

Derating Graph

(@ Chamber and natural convection 0.1 m/s)

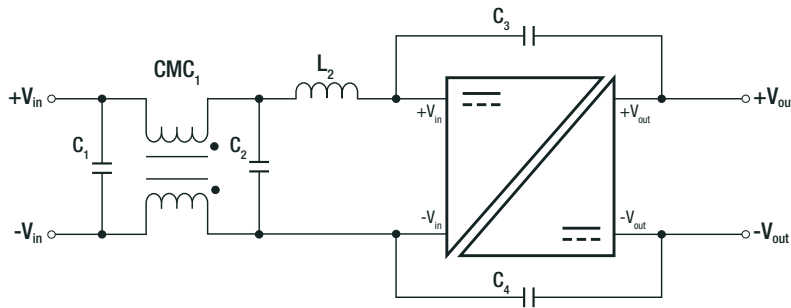


Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

SAFETY AND CERTIFICATIONS

Certificate Type (Safety)	File Number	Standard
Audio/video, information and communication technology equipment. Safety requirements	E518942-A6001-UL	UL62368-1:2014 CAN/CSA-C22.2 No. 62368-1:2014
Audio/Video, information and communication technology equipment - Part1: Safety requirements (CB Scheme)	E518942-A6001-CB-1	IEC62368-1:2014 2nd Edition
Audio/Video, information and communication technology equipment - Part1: Safety requirements (LVD)		EN62368-1:2014 + A11:2017
RoHS2+		RoHS-2011/65/EU + AM-2015/863
EMC Compliance	Condition	Standard / Criterion
Electromagnetic compatibility of multimedia equipment – Emission Requirements	with external filter refer to “EMC Filtering”	EN55032

EMC Filtering Suggestions according to EN55032



Component List Class A

C2	L2	C3,C4
10µF	RLS-226 , 22µH	470pF

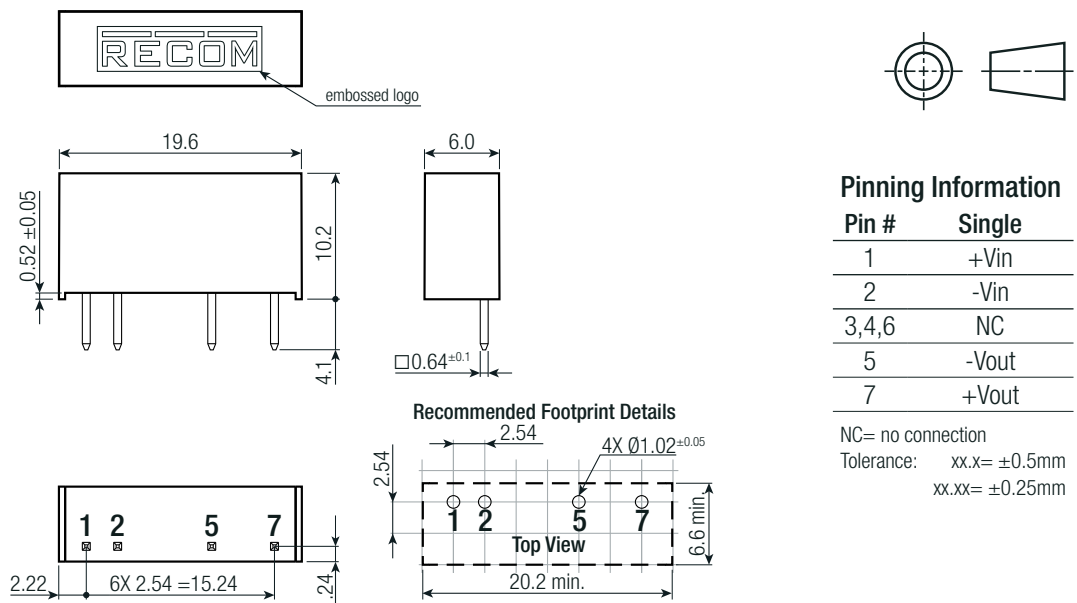
Component List Class B

C1,C2	CMC1	L2	C3,C4
10µF	9µH	RLS-226 , 22µH	470pF

DIMENSION AND PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	case	black plastic, (UL94V-0)
	PCB	FR4, (UL94V-0)
Dimension (LxWxH)		19.6 x 6.0 x 14.3mm
Weight		1.7g typ.

Dimension Drawing (mm)



Pinning Information

Pin #	Single
1	+Vin
2	-Vin
3,4,6	NC
5	-Vout
7	+Vout

NC= no connection
Tolerance: xx.x= ±0.5mm
xx.xx= ±0.25mm

Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

PACKAGING INFORMATION

Parameter	Type	Value
Packaging Dimension (LxWxH)	tube	520.0 x 9.20 x 19.00mm
Packaging Quantity		25pcs
Storage Temperature Range	non-condensing	-50°C to +125°C
Storage Humidity		95% RH max.

The product information and specifications may be subject to changes even without prior written notice. The product has been designed for various applications; its suitability lies in the responsibility of each customer. The products are not authorized for use in safety-critical applications without RECOM's explicit written consent. A safety-critical application is an application where a failure may reasonably be expected to endanger or cause loss of life, inflict bodily harm or damage property. The applicant shall indemnify and hold harmless RECOM, its affiliated companies and its representatives against any damage claims in connection with the unauthorized use of RECOM products in such safety-critical applications.