Features

Unregulated Converters

- High 6.4kVDC isolation
- Wide operating temperature range from -40°C to +90°C without derating
- High capacitive load capability
- Continuous short circuit protection
- Efficiency up to 80%

RECOM
DC/DC Converter

RK/H6 & RH/H6

1 Watt SIP7 Single and Dual Output

3 YEAR Warranty

Description

The RK/H6 and RH/H6 series 1W DC/DC converters feature high 6.4kVDC isolation and an extended operating temperature range up to +90°C without derating, yet are lower cost than standard high isolation converters. They are suitable for demanding industrial and high isolation test and measurement applications.

Selection Guide

Part Number	nom. Input Voltage Range [VDC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ. [%]	Max. Capacitive Load (1) [µF]
RK-xx3.3S/H6	5, 12, 15, 24	3.3	303	71-74	1000
RK-xx05S/H6	5, 12, 15, 24	5	200	74-77	1000
RK-xx12S/H6	5, 12, 15, 24	12	84	77-79	220
RK-xx15S/H6	5, 12, 15, 24	15	66	77-80	220
RH-xx3.3D/H6	5, 12, 15, 24	±3.3	±152	73-74	±330
RH-xx05D/H6	5, 12, 15, 24	±5	±100	74-77	±330
RH-xx12D/H6	5, 12, 15, 24	±12	±42	77-80	±100
RH-xx15D/H6	5, 12, 15, 24	±15	±33	78-80	±100

Notes:

Note1: Max. capacitive load is tested at nominal input voltage and full load



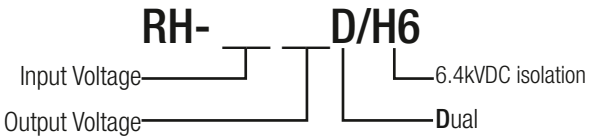


c UL us
E224736

UL60950-1 certified
CSA C22.2 No. 60950-1-07 certified
IEC60950-1 certified
IEC62368-1 certified

Model Numbering





Notes:

Note2: add suffix „K“ for Single output or suffix „H“ for Dual output

Ordering Examples:

RK-123.3S/H6 = 12VDC Input Voltage, 3.3VDC Output Voltage, Single Output, 6.4kVDC isolation
RH-0505D/H6 = 5VDC Input Voltage, 5VDC Output Voltage, Dual Output, 6.4kVDC isolation

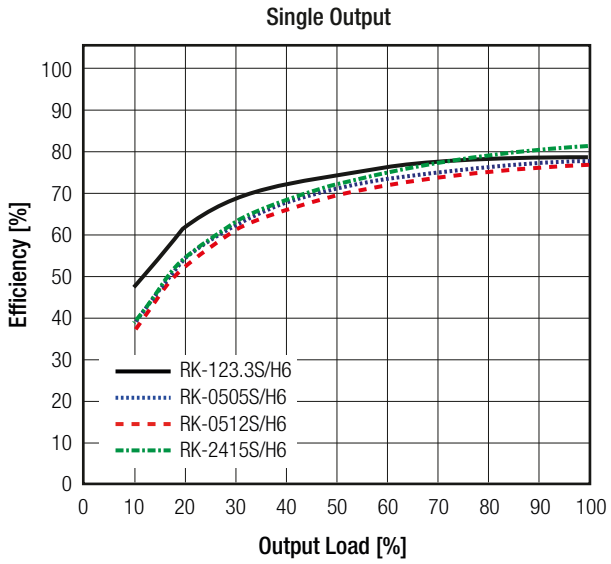
RK/H6 & RH/H6 Series

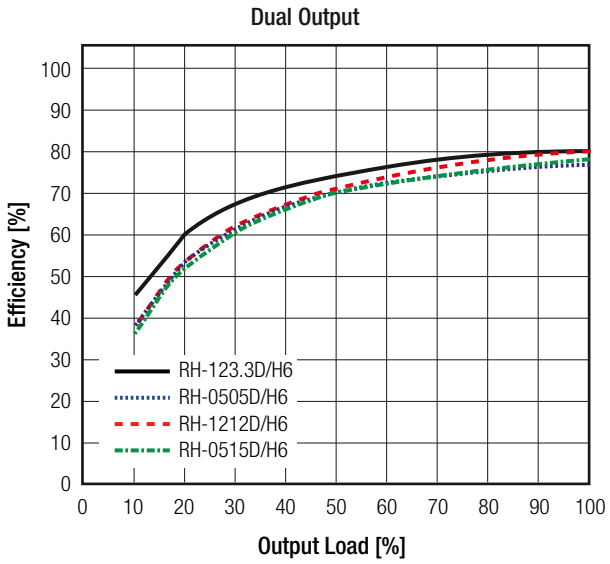
Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

BASIC CHARACTERISTICS

Parameter	Condition	Min.	Typ.	Max.
Internal Input Filter				capacitor
Input Voltage Range			±10%	
Start-up Time			20ms	
Internal Operating Frequency			80kHz	
Minimum Load			0%	
Output Ripple and Noise	20MHz BW limited		60mVp-p	120mVp-p

Efficiency vs. Load

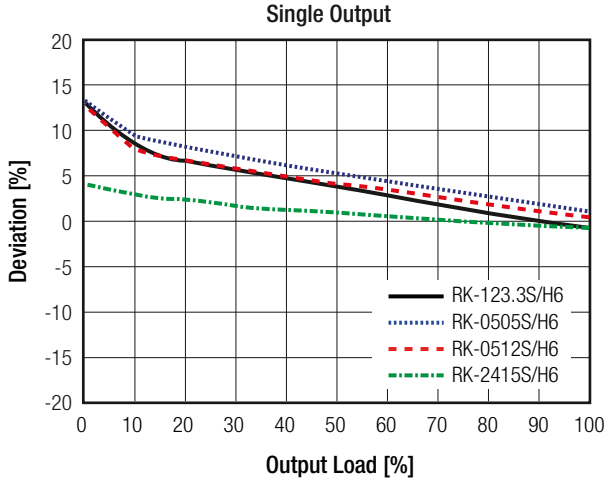


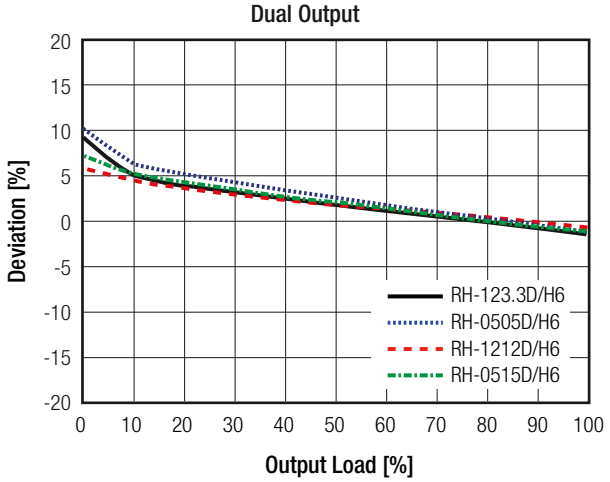


REGULATIONS

Parameter	Condition	Values
Output Accuracy		±5.0% max.
Line Regulation	low line to high line, max. load	±1.2% of 1.0% Vin typ.
Load Regulation	10% to 100% load	10% max.

Accuracy vs. Load





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

PROTECTIONS

Parameter	Condition		Value
Short Circuit Protection (SCP)			continuous
Isolation Voltage [3]	I/P to O/P	tested for 1 second rated for 1 minute	6.4kVDC 5.2kVDC
Isolation Capacitance			75pF max.
Isolation Resistance			10GΩ min.

Notes:

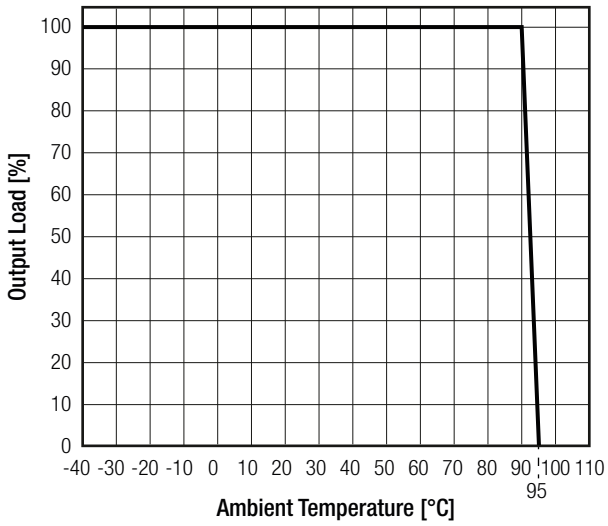
Note3: For repeat Hi-Pot testing, reduce the time and/or the test voltage

Note4: An input fuse is required if the mains supply is not over-current protected. Recommended fuse: T1A slow blow type

ENVIRONMENTAL

Parameter	Condition		Value
Operating Temperature Range	without derating @ free air convection (see graph)		-40°C to +90°C
Operating Humidity	non-condensing		5% - 95% RH max.%
MTBF	according to MIL-HDBK-217F; G.B.	+25°C +85°C	14919 x 10³ hours 9468 x 10³ hours

Derating Graph



SAFETY AND CERTIFICATIONS

Certificate Type	Report / File Number	Standard
Information Technology Equipment, General Requirements for Safety	E224736-A25	UL60950-1, 2nd Edition, 2014
		CSA/CAN C22.2 No. 60950-1-07, 2nd Edition, 2014
Information Technology Equipment, General Requirements for Safety (CB)	E224736-A26-CB-1	IEC60950-1, 2nd Edition, 2013
Audio/video, information and communication technology equipment Part 1: safety requirements	OFF-4787079973-A-2	IEC62368-1, 2nd Edition, 2014
EAC	RU-AT.49.09571	TP TC 004/2011
RoHs 2		2011/65/EU

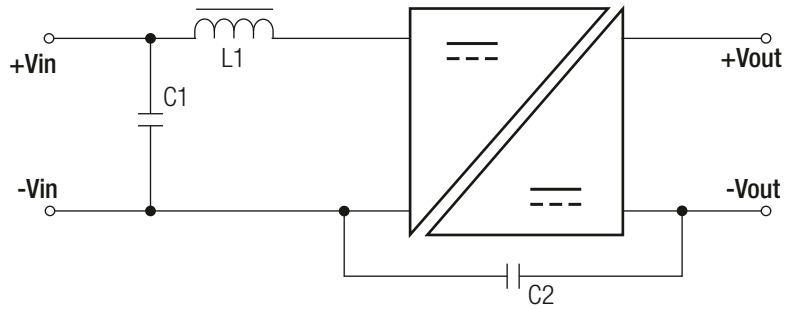
EMI Compliance	Condition	Standard / Criterion
Electromagnetic compatibility of multimedia equipment - Emission requirements	with external filter (see suggestions)	EN55032, Class A EN55032, Class B

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

EMC Filtering Suggestions according to EN55032 Class A and B

Sinlge Output



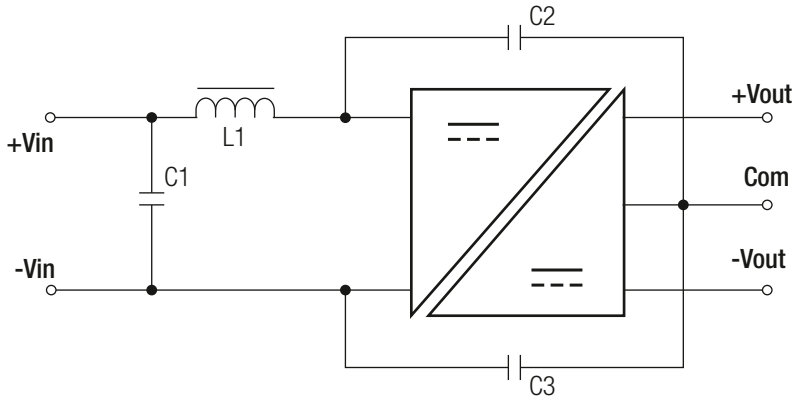
Component List Class A

Input Voltage	C1	C2	L1
5, 12Vin	10µF MLCC	-	5.6µH choke PR4532Z-5R6M
15, 24Vin		100pF	

Component List Class B

Input Voltage	C1	C2	L1
all types	10µF MLCC 100V	1nF	22µH choke PR4532Z-220K

Dual Output



Component List Class A

Input Voltage	C1	C2	L1
all types	10µF MLCC 100V	1nF	12µH choke PR4532Z-120M

Component List Class B

Input Voltage	C1	C2	C3	L1
5Vin	22µF MLCC	1nF	1nF	22µH choke PR4532Z-220K
12, 15, 24Vin	10µF MLCC			

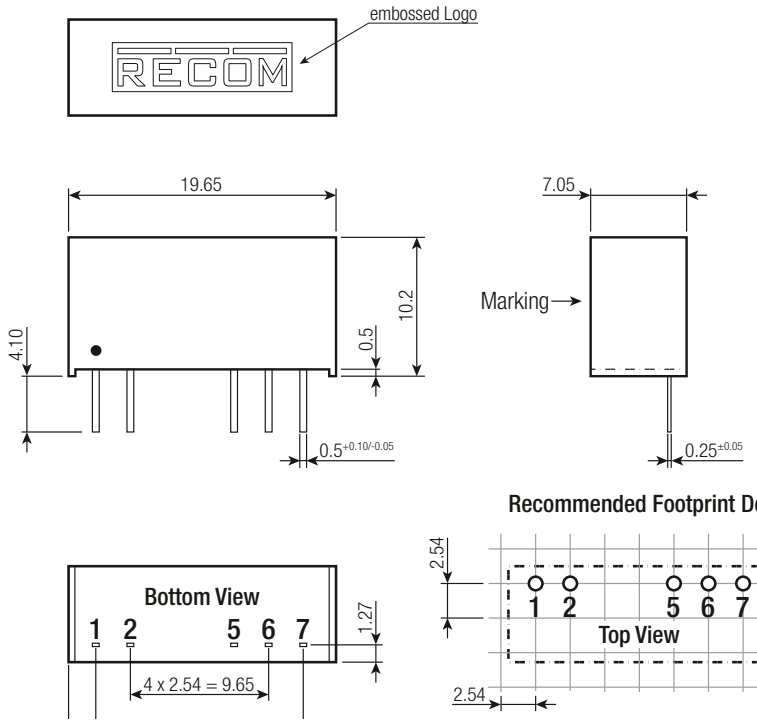
DIMENSION and PHYSICAL CHARACTERISTICS		
Parameter	**Type**	**Value**
Material	case potting	non-conductive black plastic, (UL94 V-0) epoxy, (UL94 V-0)
Package Dimension (LxWxH)		19.6 x 10.2 x 7.0mm
Package Weight		2.7g typ.

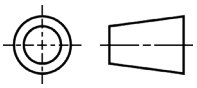
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RK/H6 & RH/H6 Series

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

Dimension Drawing (mm)





Pin Connections

Pin #	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	No Pin	Com
7	+Vout	+Vout

Tolerance: xx.x= ±0.50mm
xx.xx=±0.25mm

PACKAGING INFORMATION		
Parameter	**Type**	**Value**
Packaging Dimension (LxWxH)	tube	520.0 x 9.3 x 16.5mm
Packaging Quantity		25pcs
Storage Temperature Range		-55°C to +125°C

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