

Features

Unregulated Converters

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

RECOM
DC/DC Converter

RKE/H

**1 Watt
SIP7
Single Output**



Description

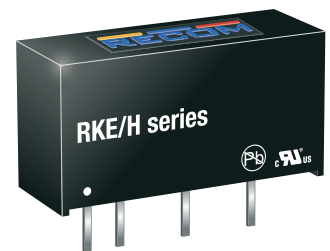
The RKE/H DC/DC converters are typically used in cost sensitive general purpose power isolation and voltage matching applications. Despite their low cost, they are fully specified converters with 4kVdc isolation, industrial operating temperature range of -40°C to +85°C without derating and UL/EN certifications.

Selection Guide

Part Number	Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ. ⁽¹⁾ [%]	max. Capacitive Load ⁽²⁾ [μF]
RKE-0505S/H	5	5	200	75	1000
RKE-1205S/H	12	5	200	80	1000
RKE-2405S/H	24	5	200	81	1000

Notes:

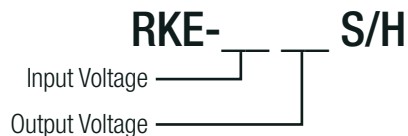
- Note1: Values at nominal input voltage and full load
Note2: Test by minimum Vin and constant resistor load



UL
E358085



Model Numbering



Ordering Examples:

- RKE-0505S/H, 5Vin and 5Vout, Single Output
RKE-2405S/H, 24Vin and 5Vout, Single Output

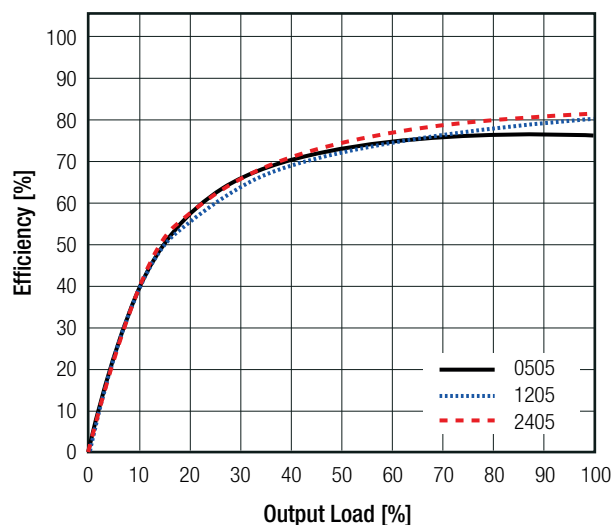
Specifications (measured at Ta= 25°C, nominal input voltage, full load, otherwise noted)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Filter	internal capacitors			
Input Voltage Range		-10%		+10%
Operating Frequency			80kHz	
Minimum Load		0%		
Output Ripple and Noise	measured with 20MHz bandwidth and a 0.1μF ceramic capacitor		40mVp-p	100mVp-p
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UL60950-1 certified
CSA/CAN 22.2 No. 60950-1 certified
IEC/EN60950-1 certified
EN55032 compliant

Specifications (measured at $T_a = 25^\circ\text{C}$, nominal input voltage, full load, otherwise noted)

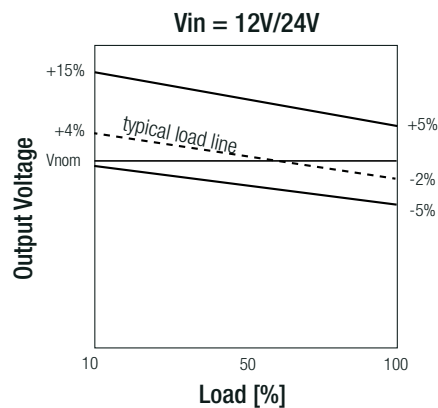
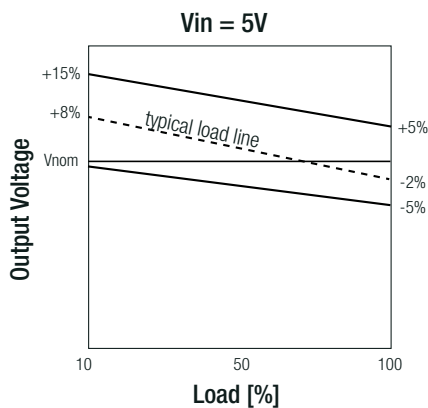
Efficiency vs. Load



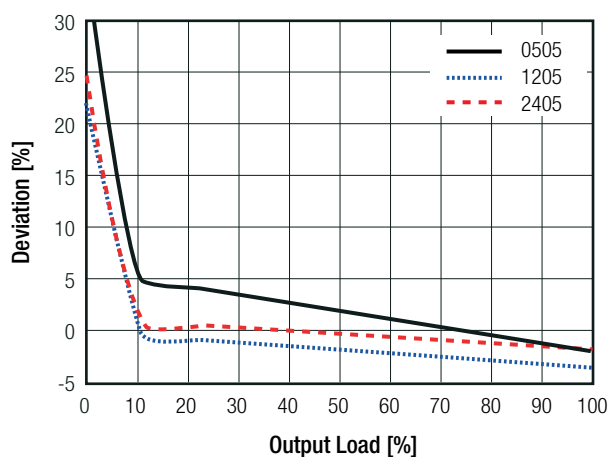
REGULATIONS

Parameter	Condition	Values
Output Voltage Accuracy		$\pm 5\%$ typ.
Line Voltage Regulation	low line to high line	$\pm 1.2\%$ typ. / 1% of V_{in}
Load Voltage Regulation	10% to 100% load $V_{in} = 5\text{V}$ $V_{in} = 12\text{V}$ $V_{in} = 24\text{V}$	8% typ., 15% max 3% typ., 15% max 4% typ., 15% max

Tolerance Envelope



Accuracy vs. Load



Specifications (measured at Ta= 25°C, nominal input voltage, full load, otherwise noted)

PROTECTIONS

Parameter	Condition		Value
Isolation Voltage ⁽³⁾	I/P to O/P	tested for 1 second	4kVDC
		tested for 1 minute	3kVDC
Isolation Capacitance			75pF max.
Isolation Resistance			1GΩ min.

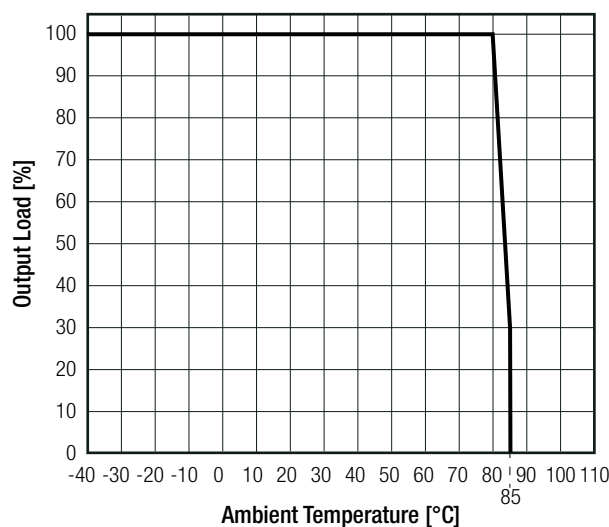
Notes:

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

ENVIRONMENTAL

Parameter	Condition		Value
Operating Temperature Range	with derating		-40°C to +85°C
Maximum Case Temperature			+105°C
Operating Humidity	non-condensing		5% to 95% RH
Vibration			MIL-STD-202G
MTBF	according to MIL-HDBK-217F, G.B.	+25°C	13200 x 10 ³ hrs
		+85°C	5200 x 10 ³ hrs

Derating Graph



SAFETY AND CERTIFICATIONS

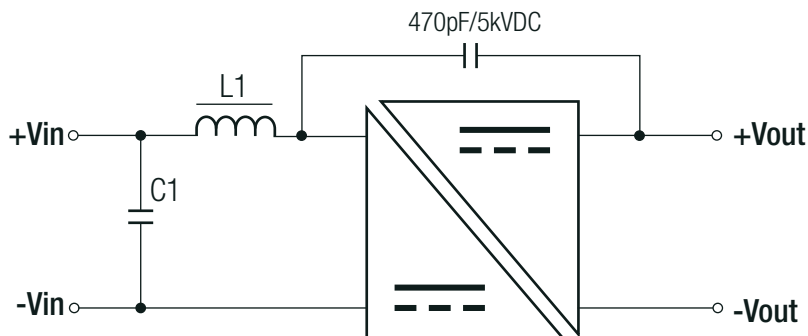
Certificate Type	Report / File Number	Standard
IEC/EN General Safety	LVD1602031	IEC/EN60950-1, 2nd Edition, 2013
UL General Safety	E358085-A4	UL60950-1, 2nd Edition, 2007
CAN/CSA General Safety		CSA C22.2 No. 60950-1, 2nd Edition, 2007
EAC	RU-AT.49.09571	TP TC 004/2011
RoHs 2		2011/65/EU

EMC Compliance	Condition	Standard / Criterion
Electromagnetic compatibility of multimedia equipment - Emission requirements	with external filter	EN55032, Class B

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Specifications (measured at Ta= 25°C, nominal input voltage, full load, otherwise noted)

EMC Filtering Suggestion according to EN55032 Class B

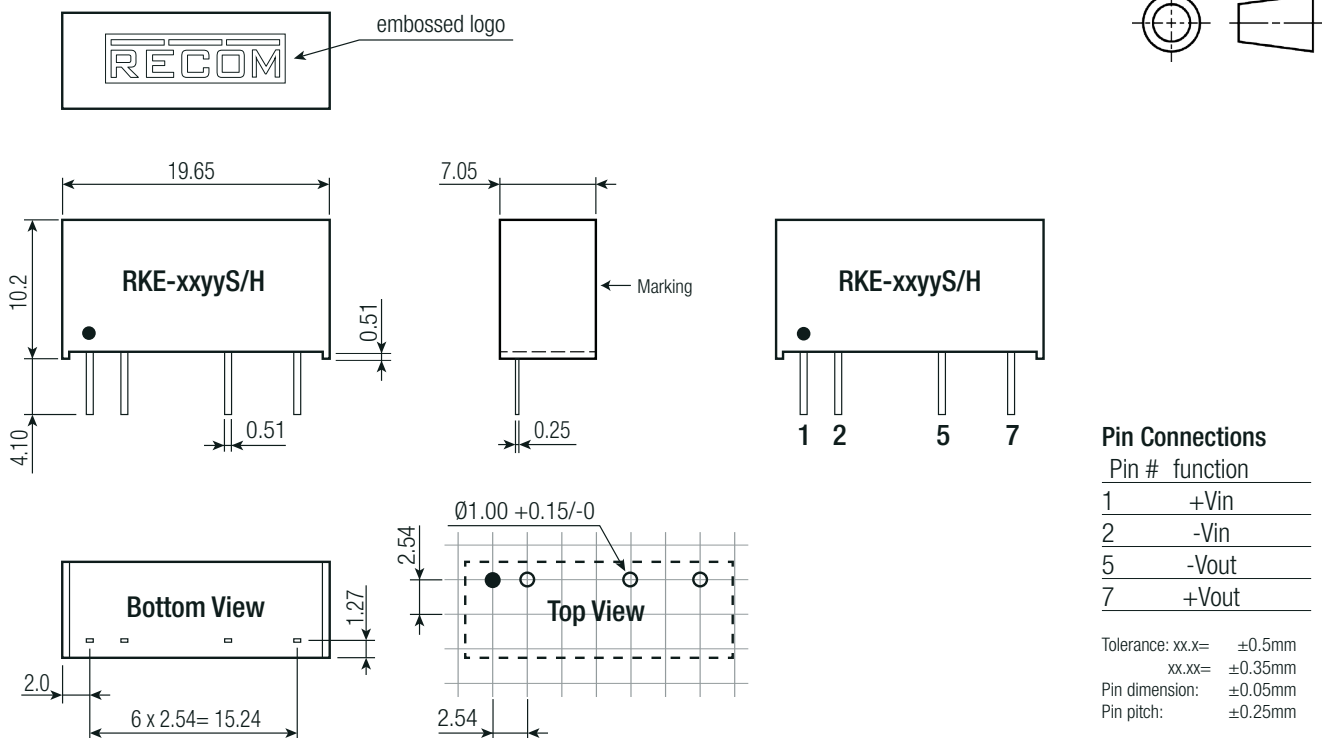


MODEL	C1	L1
RKE-0505S/H	10μF	4.7μH choke
RKE-1205S/H	4.7μF	22μH choke
RKE-2405S/H	2.2μF	47μH choke

DIMENSION and PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	case potting	black plastic (UL94 V-0) epoxy (UL94 V-0)
Package Dimension (LxWxH)		19.65 x 7.05 x 10.2mm
Package Weight		2.7g typ.

Dimension Drawing (mm)



Pin Connections

Pin #	function
1	+Vin
2	-Vin
5	-Vout
7	+Vout

Tolerance: xx.x= ±0.5mm
 xx.xx= ±0.35mm
 Pin dimension: ±0.05mm
 Pin pitch: ±0.25mm

PACKAGING INFORMATION

Packaging Dimension (LxWxH)	Tube	520 x 9.3 x 16.5mm
Packaging Quantity		25pcs
Storage Temperature Range		-55°C to +125°C

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