

# Features

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

# Unregulated Converters

## RKE/H

**1 Watt  
SIP7  
Single Output**



### Description

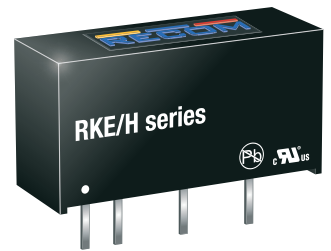
The RKE/H DC/DC converters are typically used in cost sensitive general purpose power isolation and voltage matching applications. Despite their low cost, they are fully specified converters with 4kVdc isolation, industrial operating temperature range of -40°C to +85°C without derating and UL/EN certifications.

### Selection Guide

Part Number	Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ. <sup>(1)</sup> [%]	max. Capacitive Load <sup>(2)</sup> [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



### Model Numbering



#### Ordering Examples:

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

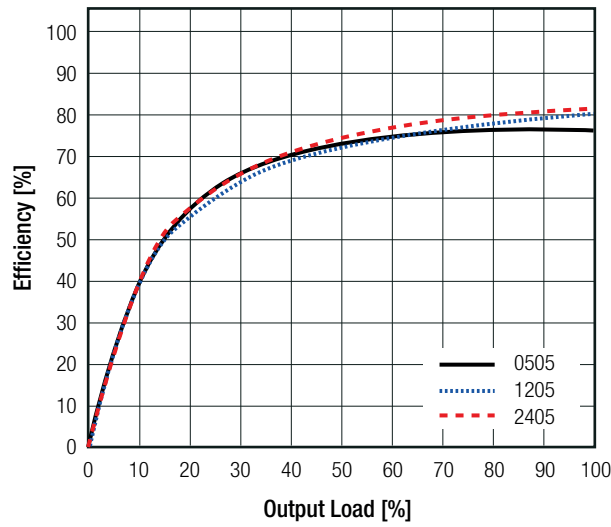
UL60950-1 certified  
 CSA/CAN 22.2 No. 60950-1 certified  
 IEC/EN60950-1 certified  
 EN55032 compliant

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

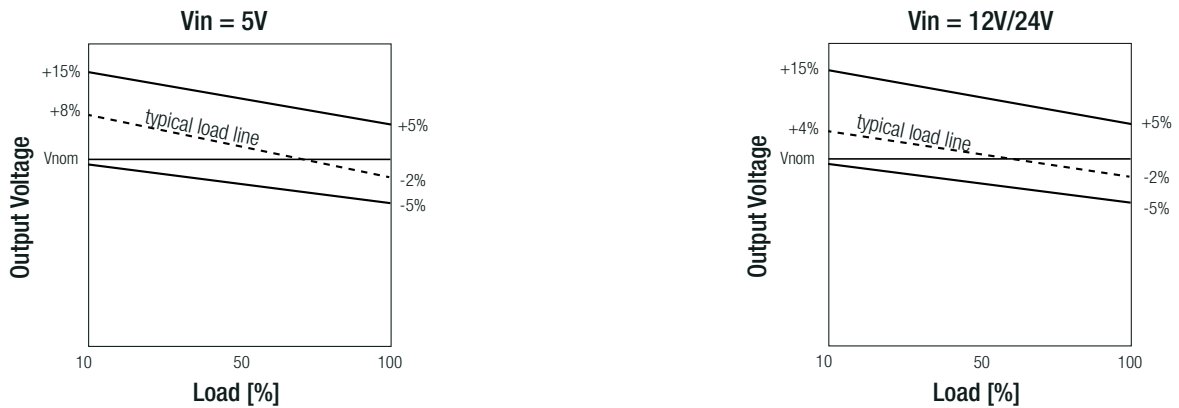
Efficiency vs. Load



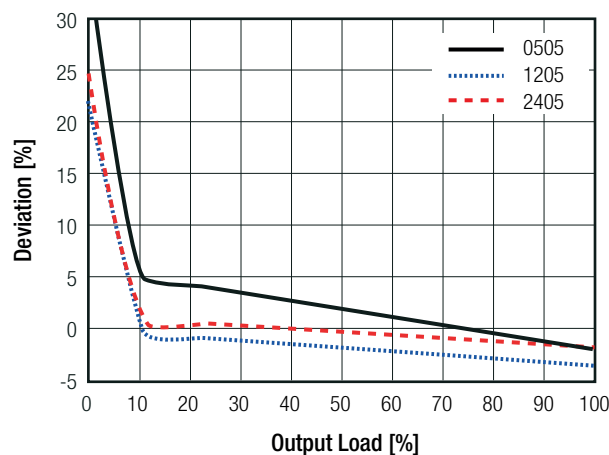
## REGULATIONS

Parameter	Condition	Values
Output Voltage Accuracy		±5% typ.
Line Voltage Regulation	low line to high line	±1.2% typ. /1% of Vin
Load Voltage Regulation	10% to 100% load Vin = 5V	8% typ., 15% max
	Vin = 12V	3% typ., 15% max
	Vin = 24V	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 <sup>(3)</sup>	I/P to O/P	tested for 1 second tested for 1 minute	4kVDC 3kVDC
Isolation Capacitance			75pF max.
Isolation Resistance			1GΩ min.

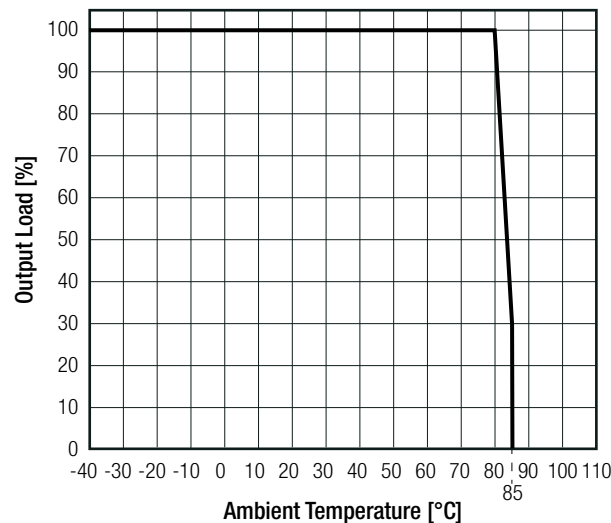
**Notes:**

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 +85°C	13200 x 10 <sup>3</sup> hrs 5200 x 10 <sup>3</sup> hrs

**Derating Graph**



**SAFETY AND CERTIFICATIONS**

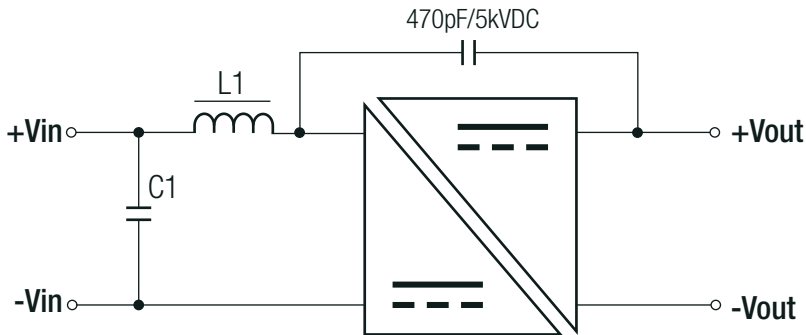
Certificate Type	Report / File Number	Standard
IEC/EN General Safety	LVD1602031	IEC/EN60950-1, 2nd Edition, 2013
UL General Safety	E358085-A4	UL60950-1, 2nd Edition, 2007
CAN/CSA General Safety		CSA C22.2 No. 60950-1, 2nd Edition, 2007
EAC	RU-AT.49.09571	TP TC 004/2011
RoHs 2		2011/65/EU

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**

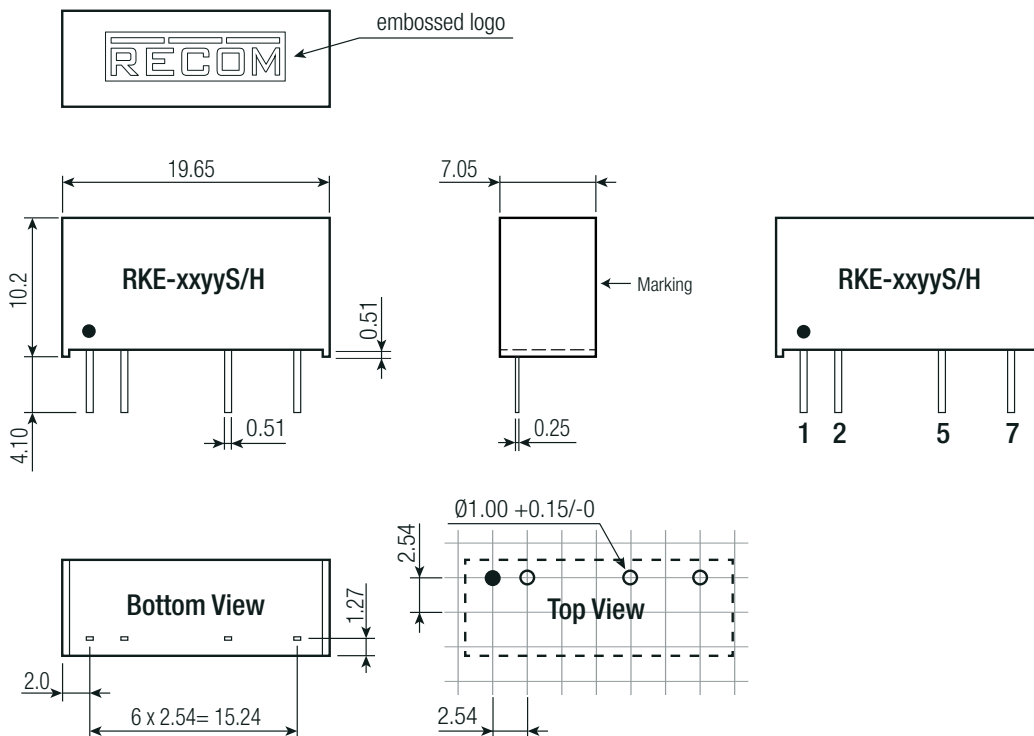


MODEL	C1	L1
RKE-0505S/H	10μF	4.7μH choke
RKE-1205S/H	4.7μF	22μH choke
RKE-2405S/H	2.2μF	47μH choke

**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**

Parameter	Type	Value
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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