

# Features

# Unregulated Converters

- Low Cost
- 1:1 Input Voltage Range
- Efficiency up to 81%
- 4kVDC/1 second Isolation
- IEC/EN/UL Certified

## 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

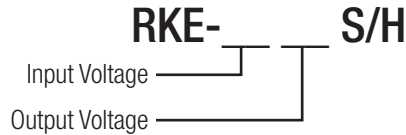
Part Number	Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ. <sup>(1)</sup> [%]	max. Capacitive Load <sup>(2)</sup> [µF]
RKE-0505S/H	5	5	200	75	1000
RKE-1205S/H	12	5	200	80	1000
RKE-2405S/H	24	5	200	81	1000

### 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

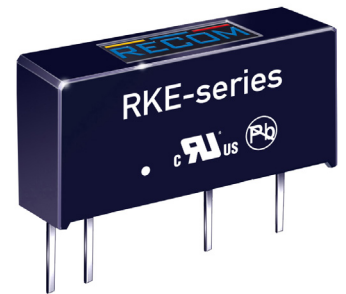
## Specifications (measured at ta= 25°C, nominal input voltage, full load, otherwise noted)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range		-10%		+10%
Input Filter	internal capacitors			
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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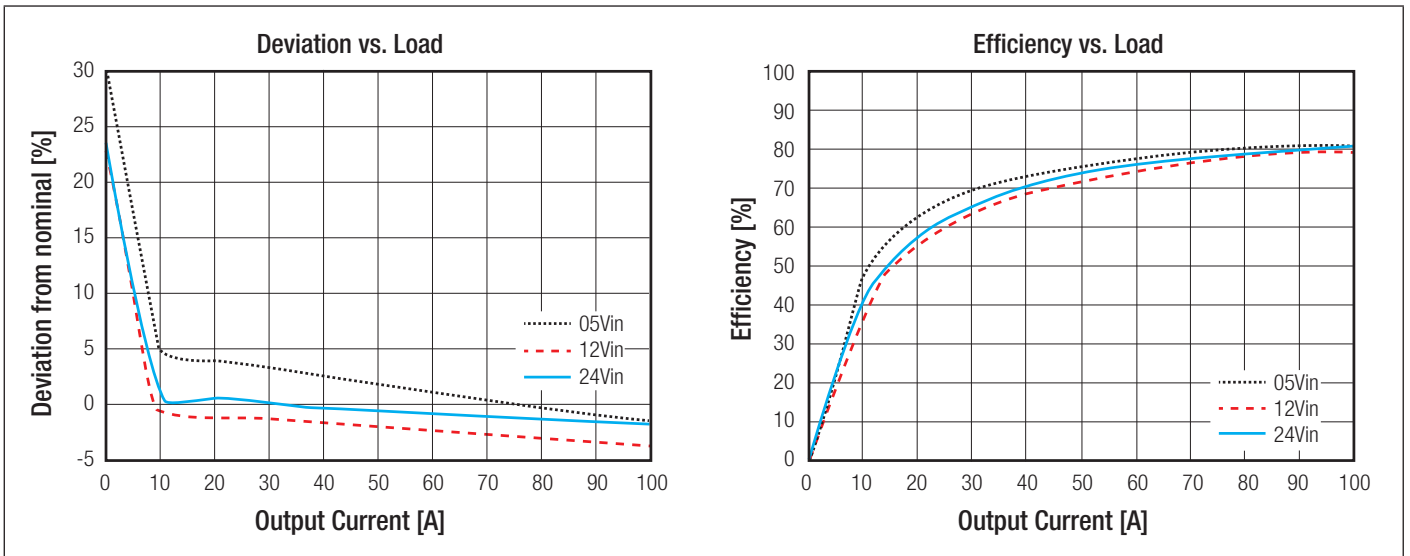
## RKE/H

# 1 Watt SIP7 Package

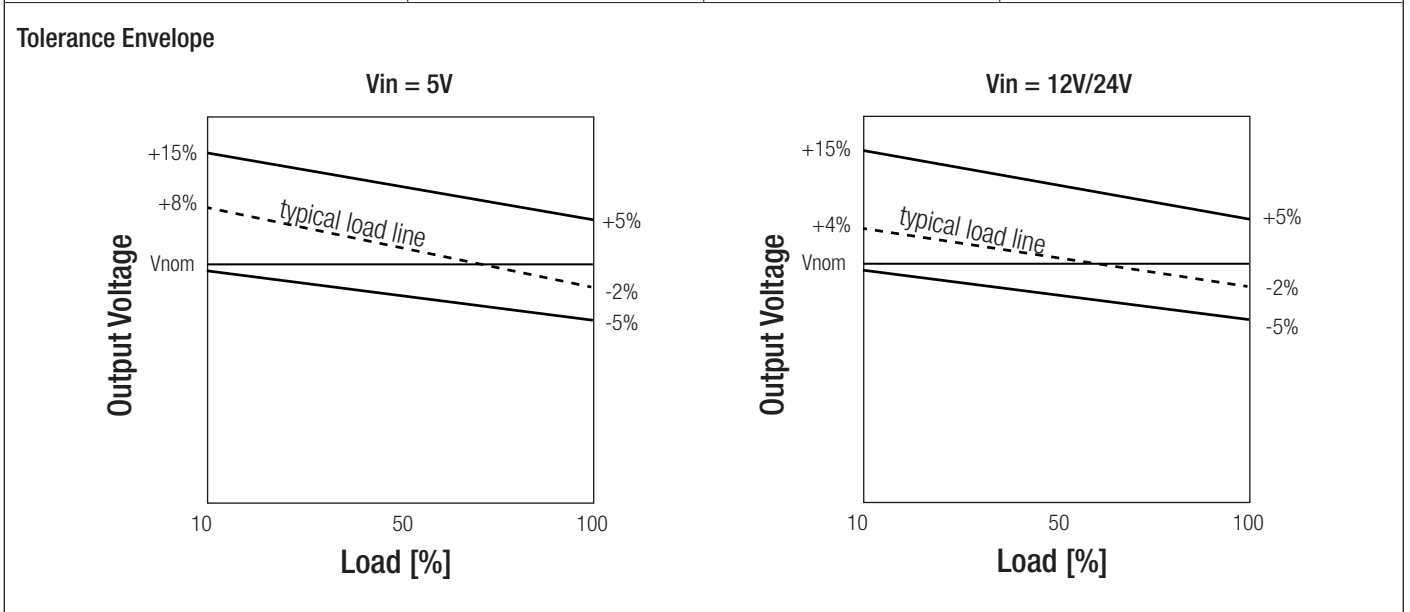


UL60950-1 Certified  
EN55022 Compliant

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



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	$V_{in} = 5V$ 8% typ., 15% max
		$V_{in} = 12V$ 3% typ., 15% max
		$V_{in} = 24V$ 4% typ., 15% max

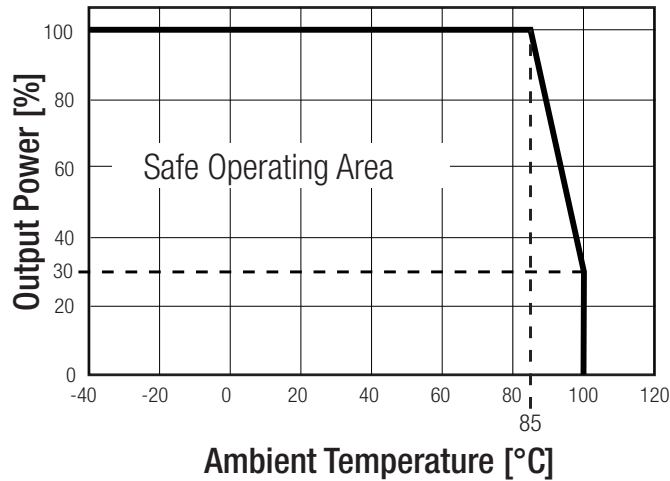


PROTECTIONS		
Parameter	Condition	Value
Isolation Voltage	I/P to O/P	4kVDC / 1sec.
Isolation Capacitance		45pF max.
Isolation Resistance		1G $\Omega$ min.

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

ENVIRONMENTAL		
Parameter	Condition	Value
Operating Temperature Range		-40°C to +85°C
Maximum Case Temperature		+105°C
Operating Humidity	non-condensing	5% to 95% RH
Vibration		MIL-STD-202G
MTBF	MIL-HDBK-217F +25°C +85°C	13200 x 10 <sup>3</sup> hrs 5200 x 10 <sup>3</sup> hrs

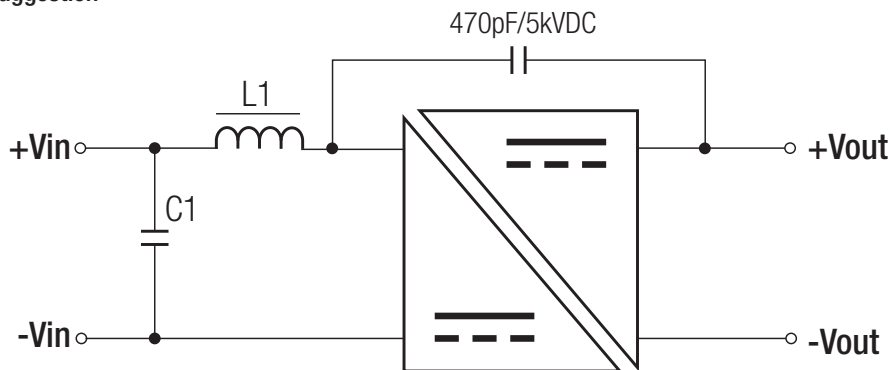
**Derating Graph**



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. 60601-1, 2nd Edition, 2007

EMC Compliance	Condition	Standard / Criterion
EMI conducted and radiated emission	with external filter	EN55022, Class B

**EMC Class B Filter suggestion**



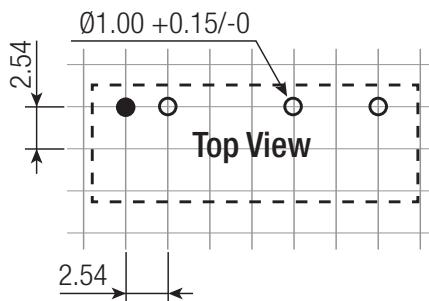
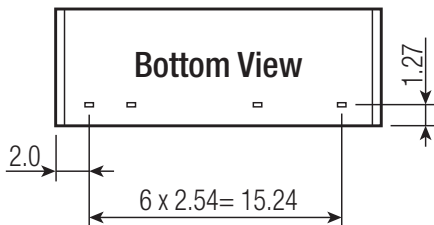
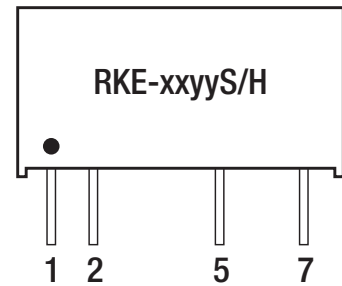
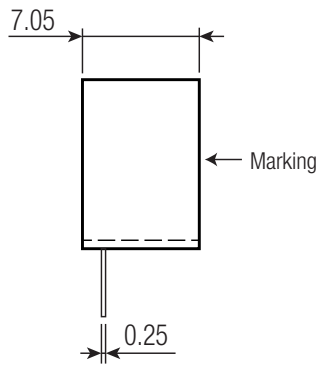
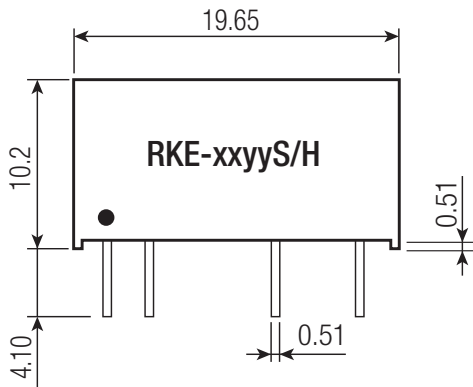
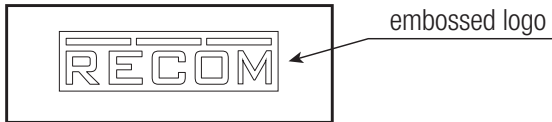
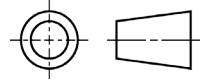
MODEL	C1	L1
RKE-0505S/H	10μF	4.7μH
RKE-1205S/H	4.7μF	22μH
RKE-2405S/H	2.2μF	47μH

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

**DIMENSION and PHYSICAL CHARACTERISTICS**

Parameter	Type	Value
Material	Case Potting	black plastic (UL94V-0) Epoxy (UL94V-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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