

Features

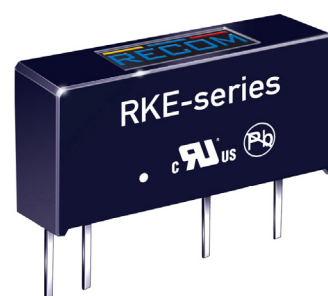
Unregulated Converters

- 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
Package**



UL
E358085

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

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

Model Numbering



Ordering Examples:

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

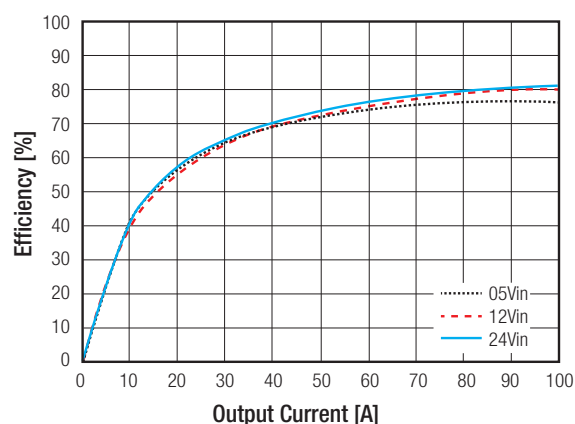
RKE-2405S/H, 24Vin and 5Vout, Single Output

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

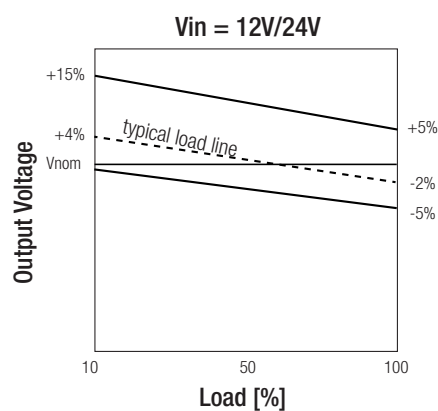
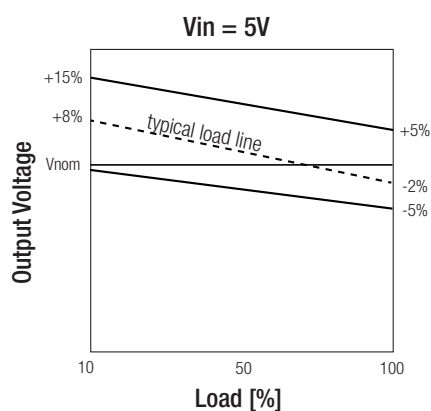
Efficiency vs. Load



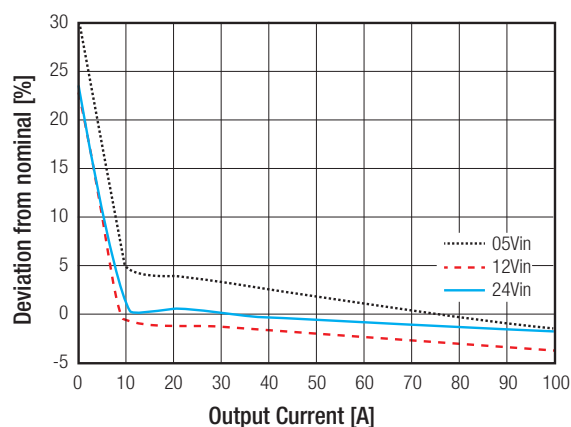
REGULATIONS

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



Deviation vs. Load

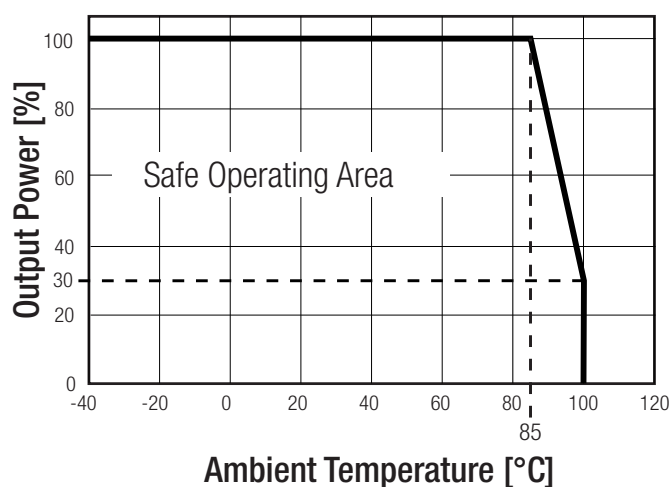


Specifications (measured at Ta= 25°C, nominal input voltage, full load, otherwise noted)

PROTECTIONS			
Parameter	Condition		Value
Isolation Voltage ⁽³⁾	I/P to O/P	tested for 1 second 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			-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 10³hrs 5200 x 10³hrs

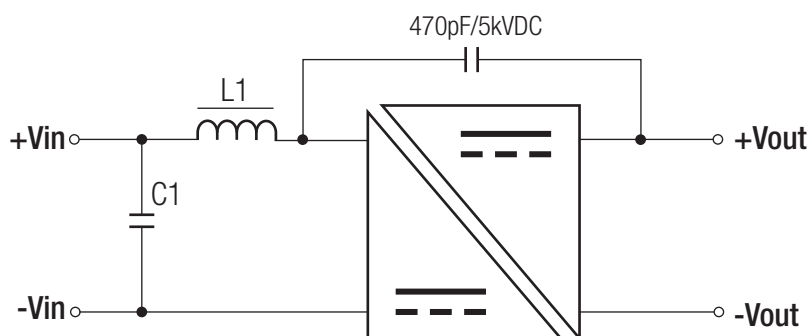
Derating Graph



SAFETY AND CERTIFICATIONS		
Certificate Type	Report / File Number	Standard
IEC/EN General Safety (LVD)	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
EMC Compliance	Condition	Standard / Criterion
EMI conducted and radiated emission	with external filter	EN55032, Class B
continued on next page		

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

EMC Class B Filter suggestion

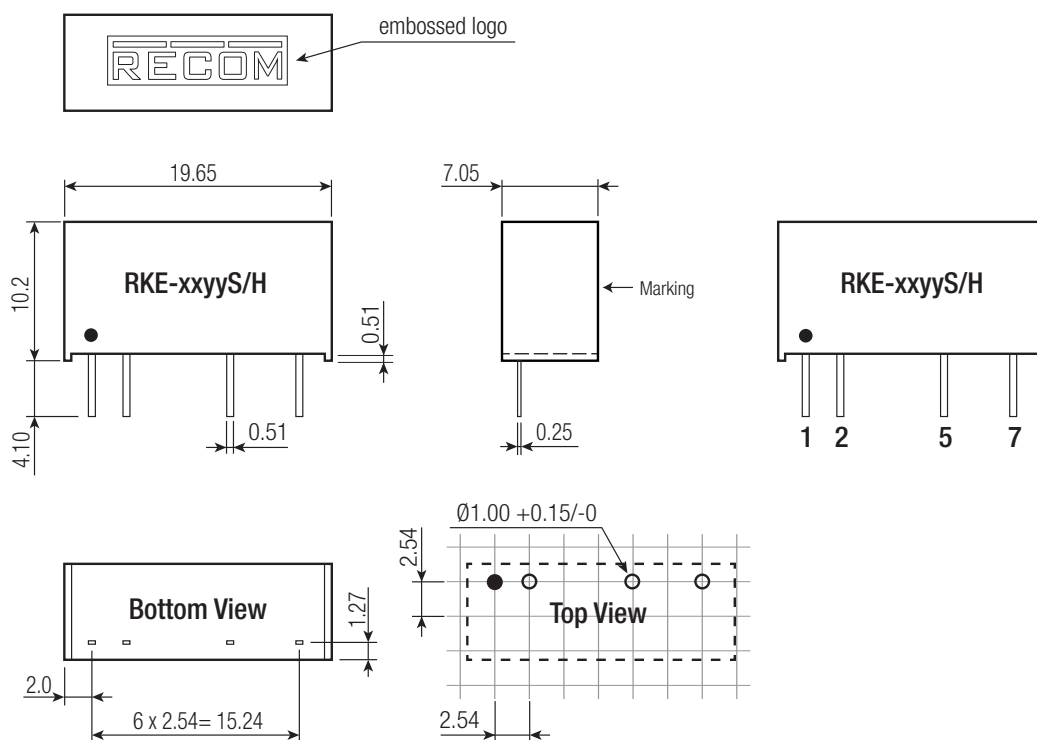


MODEL	C1	L1
RKE-0505S/H	10μF	4.7μH Choke
RKE-1205S/H	4.7μF	22μH Choke
RKE-2405S/H	2.2μF	47μH Choke

DIMENSION and PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	case potting	black plastic (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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