Features

Regulated Converters

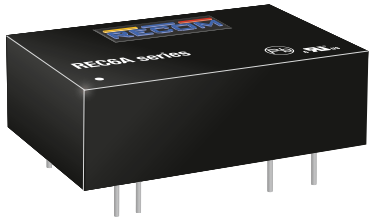
- 2:1 input voltage range
- Efficiency up to 80%
- EMI Class A without external components
- Continuous short circuit protection
- No minimum load required

RECOM
DC/DC Converter

REC6A

6 Watt DIP24 Package

3 YEAR Warranty



Description

The REC6A series is cost efficient, general purpose isolated DC/DC converter containing a built in Class A EMC filter. The converter is designed to run from industry standard 24V or 5V unregulated supplies and is typically used to provide an isolated, regulated, short circuit protected output. Under Voltage Lockout is available as an option. These converters are designed for industrial applications, can drive high capacitive loads and operate over the full -40°C to +65°C temperature range without derating.

Selection Guide

Part Number	Input Voltage Range [VDC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ.(1) [%]	max. Capacitive Load(2) [µF]
REC6A-0505SW/H2 (3)	4.5-9	5	1200	73	6800
REC6A-2405SW/H2 (3)	18-36	5	1200	80	6800

Notes:

Note1: Efficiency is test by nominal input and full load at +25°C ambient

Note2: Max Cap Load is test by nominal input and full resisitive load

Model Numbering

REC6A-__ __ SW/H2/__

Input Voltage

Output Voltage

UVLO (3)

Isolation

Ordering Examples:

REC6A-0505SW/H2: Single Output, 4.5-9Vin (2:1) and 5Vout, 2kVDC Isolation

REC6A-2405SW/H2/X1: Single Output, 18-36Vin (2:1) and 5Vout, 2kVDC Isolation, UVLO option

Notes:

Note3: without suffix is without Under Voltage Lockout Option
add suffix "/X1" for optional Under Voltage Lockout

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

BASIC CHARACTERISTICS					
Parameter	**Condition**		**Min.**	**Typ.**	**Max.**
Internal Input Filter					Pi Type
Input Voltage Range	nom. Vin = 5V nom. Vin = 24V		4.5VDC 18VDC		9VDC 36VDC
Input Surge Voltage	Vin = 5V Vin = 24V				10VDC 50VDC
Quiescent Current	Vin = 5V Vin = 24V			80mA 20mA	
Start-up Time				10ms	
Internal Operating Frequency			120kHz		
Minimum Load			0%		
Output Ripple and Noise	measured with 20MHz bandwidth and a 0.47µF ceramic capacitor				50mVp-p
Under Voltage Lockout (3)	Vin =5V	DC-DC ON DC-DC OFF		 3.0VDC	3.2VDC
	Vin = 24V	DC-DC ON DC-DC OFF		 15.6VDC	16.5VDC

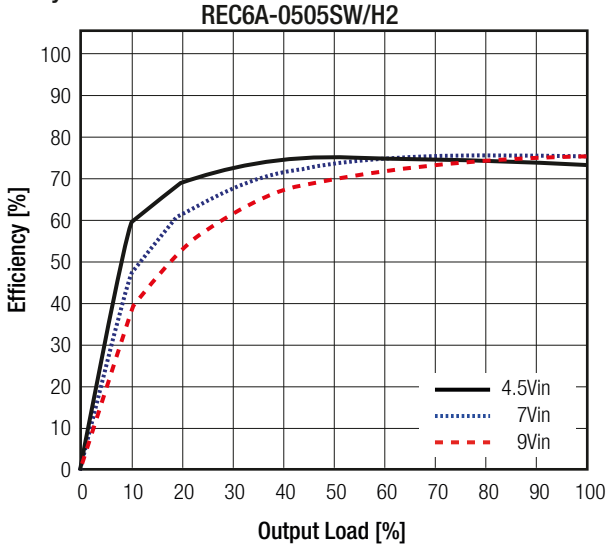
continued on next page

UL60950 certified
UL62368 certified
IEC/EN62368-1 certified

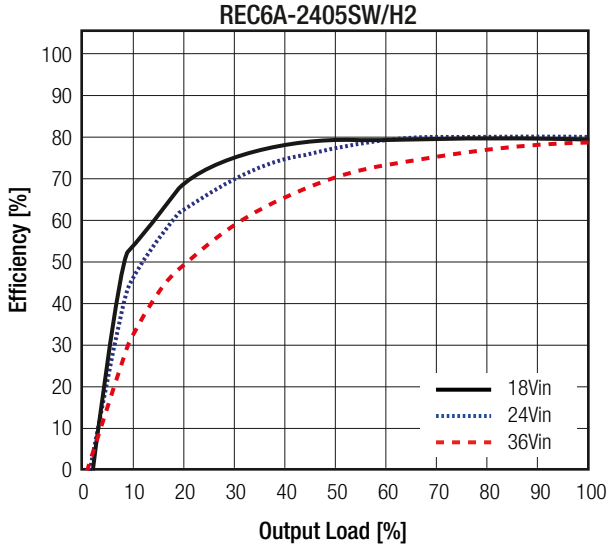
Specifications (measured @ Ta= 25°C, nom. Vin and full load unless otherwise stated)

Efficiency vs. Load

REC6A-0505SW/H2



REC6A-2405SW/H2

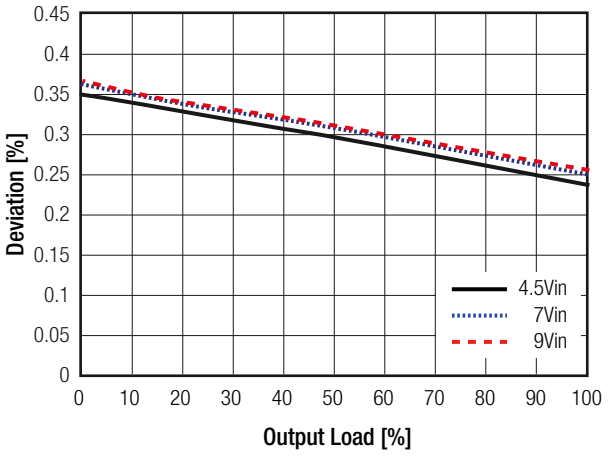


REGULATIONS

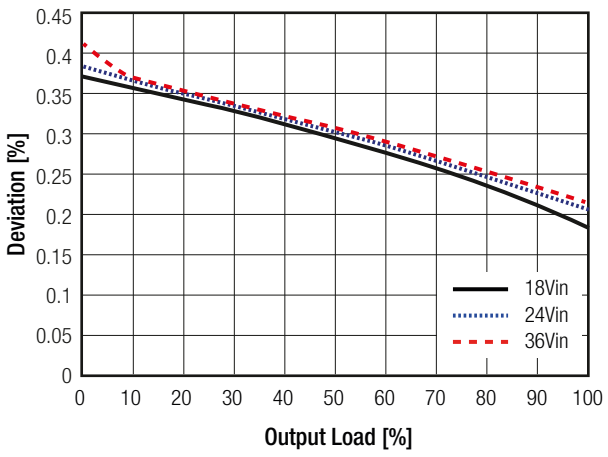
Parameter	Condition	Values
Output Accuracy		±2.0% typ.
Line Regulation	low line to high line	±0.3% max.
Load Regulation	0% to 100% load	0.6% max.

Deviation vs. Load

REC6A-0505SW/H2



REC6A-2405SW/H2



PROTECTIONS

Parameter	Condition	Value
Short Circuit Protection (SCP)	below 100mΩ	continuous, automatic recovery
Over Load Protection (OLP)		120% min., 140% typ.
Isolation Voltage (4)	tested for 1s	2kVDC
Isolation Resistance		1GΩ min.
Isolation Capacitance		2200pF max.
Insulation Grade		functional

Notes:

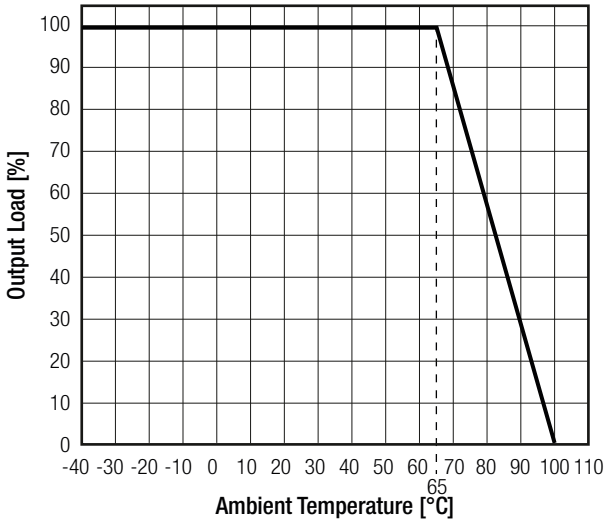
Note4: For repeat Hi-Pot testing, reduce the ime and/or the test voltage

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

ENVIRONMENTAL

Parameter	Condition		Value
Operating Temperature Range			-40°C to +65°C
Maximum Case Temperature			+100°C
Temperature Coefficient			±0.05%/°C
Thermal Impedance			20°C/W
Operating Altitude			5000m
Operating Humidity	non-condensing		5% to 95% RH
Pollution Degree			PD2
MTBF	according to MIL-HDBK-217F, G.B.	+25°C +65°C	1333 x 10^3h 499 x 10^3h

Derating Graph
(@ Chamber and natural convection 0.1m/s)



SAFETY AND CERTIFICATIONS

Certificate Type	Report / File Number	Standard
Information Technology Equipment, General Requirements for Safety	E224736	UL60950-1, 2nd Edition, 2014 CSA C22.2 No. 60950-1, 2nd Edition, 2014
Audio/Video, information and communication technology equipment	E224736	UL62368-1, 2nd Edition, 2014 CSA C22.2 No. 62368-1, 2014
Audio/video, information and communication technology equipment. Safety requirements (CB Scheme)	L0339m35-CB-1-B1	IEC62368, 2nd Edition, 2014 EN62368, 1st Edition, 2014
EAC	RU-AT.49.09571	TP TC 004/2011
RoHs 2		RoHS 10/10, 2011/65/EU + AM-2015/863

EMC Compliance	Condition	Standard / Criterion
Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement [5]	with external components	EN55032, Class B
ESD Electrostatic discharge immunity test	Air ±8kV and Contact ±4kV	EN61000-4-2, Criteria A
Radiated, radio-frequency, electromagnetic field immunity test	3 V/m	EN61000-4-3, Criteria A
Fast Transient and Burst Immunity	±0.5kV	EN61000-4-4, Criteria A
Surge Immunity	±0.5kV	EN61000-4-5, Criteria A
Immunity to conducted disturbances, induced by radio-frequency fields	3 Vr.m.s	EN61000-4-6, Criteria A
Power Magnetic Field Immunity	50Hz, 1A/m	EN61000-4-8, Criteria A

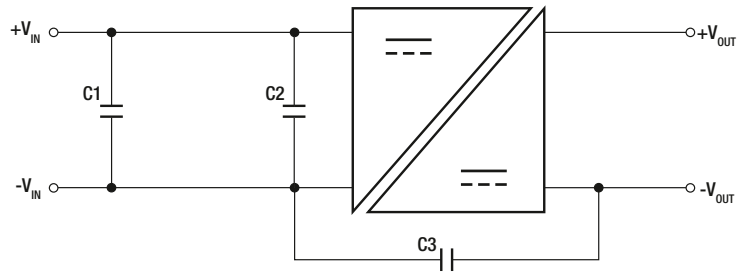
Notes:

Note5: Meets EMI Class A without external components and Class B with external components

continued on next page

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

EMC Filtering Suggestions according to EN55032



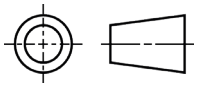
Component List Class B

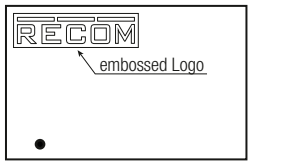
MODEL	C1	C2	C3
REC6A-0505SW/H2	47µF/50V	47µF/50V	N/A
REC6A-2405SW/H2	47µF100V	47µF/100V	1000pF/3kV

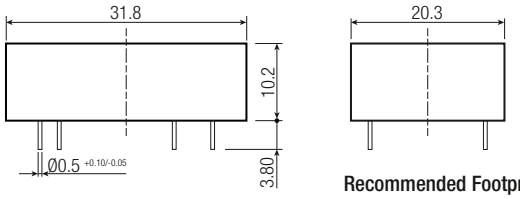
DIMENSION and PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	case	non-conductive black plastic (UL94V-0)
	base	non-conductive black plastic (UL94V-0)
	potting	epoxy (UL94V-0)
Dimension (LxWxH)		31.8 x 20.3 x 10.2mm
Weight		13.0g

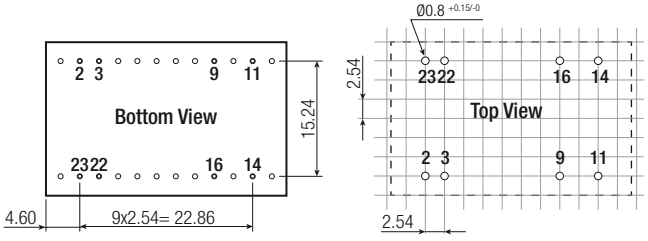
Dimension Drawing (mm)







Recommended Footprint Details



Pin Connections

Pin #	Function
2, 3	-Vin
9	NC
11	NC
14	+Vout
16	-Vout
22, 23	+Vin

Tolerance: X.X ±0.5mm
X.XX ±0.25mm

PACKAGING INFORMATION

Packaging Dimension (LxWxH)	Tube	520 x 22.7 x 18.3mm
Packaging Quantity		15pcs
Storage Temperature Range		-55°C to +125°C

The product information and specifications may be subject to changes even without prior written notice.The product has been designed for various applications; its suitability lies in the responsibility of each customer. The products are not authorized for use in safety-critical applications without RECOM's explicit written consent. A safety-critical application is an application where a failure may reasonably be expected to endanger or cause loss of life, inflict bodily harm or damage property. The applicant shall indemnify and hold harmless RECOM, its affiliated companies and its representatives against any damage claims in connection with the unauthorized use of RECOM products in such safety-critical applications.