

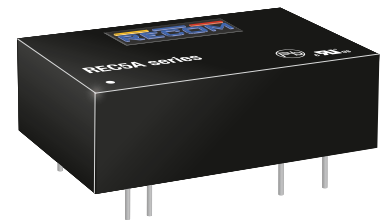
# Features

- 2:1 input voltage range
- Efficiency up to 81%
- EMI Class A without external components
- Continuous short circuit protection
- No minimum load required

# Regulated Converters

## REC5A

5 Watt  
DIP24  
Package



UL60950 certified  
UL62368 certified  
IEC/EN62368-1 certified

### Description

The REC5A 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 +68°C temperature range without derating.

### Selection Guide

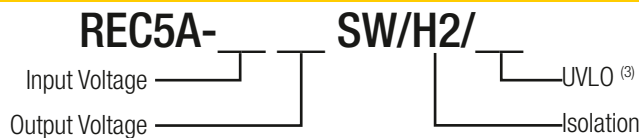
| Part Number                    | Input Voltage Range [VDC] | Output Voltage [VDC] | Output Current [mA] | Efficiency typ. <sup>(1)</sup> [%] | max. Capacitive Load <sup>(2)</sup> [µF] |
|--------------------------------|---------------------------|----------------------|---------------------|------------------------------------|--|
| REC5A-0505SW/H2 <sup>(3)</sup> | 4.5-9                     | 5                    | 1000                | 73.5                               | 6800                                     |
| REC5A-2405SW/H2 <sup>(3)</sup> | 18-36                     | 5                    | 1000                | 81                                 | 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 resistive load

### Model Numbering



#### Ordering Examples:

REC5A-0505SW/H2: Single Output, 4.5-9Vin (2:1) and 5Vout, 2kVDC Isolation

REC5A-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

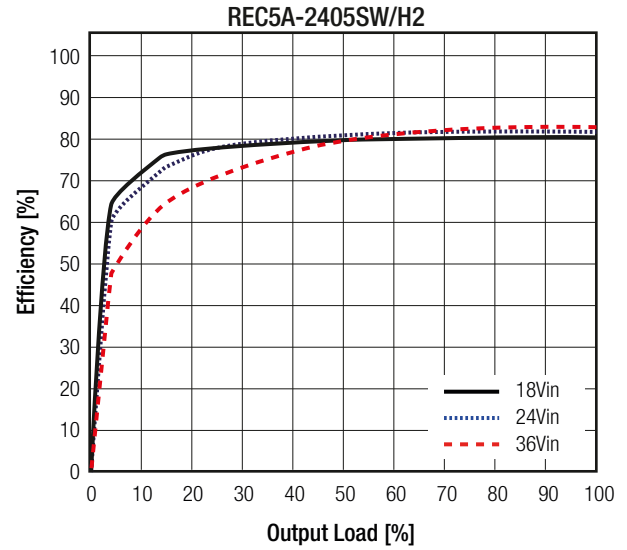
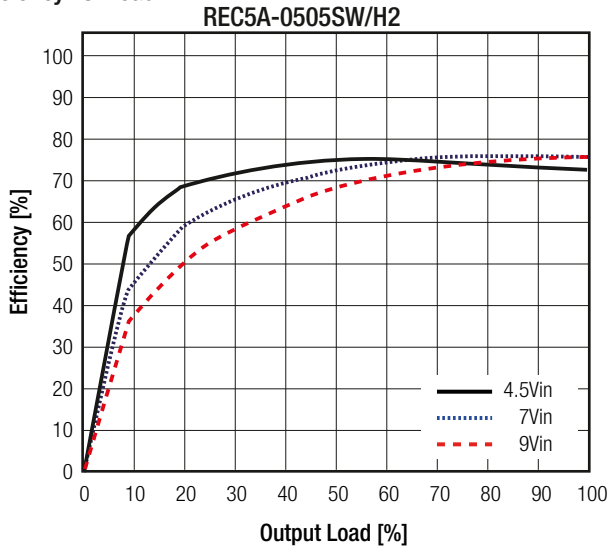
### Specifications (measured @ Ta= 25°C, nom. Vin and full load unless otherwise stated)

| BASIC CHARACTERISTICS                |  |                       |              |                |
|--------------------------------------|--|-----------------------|--------------|----------------|
| Parameter                            | Condition  | Min.                  | Typ.         | Max.           |
| Internal Input Filter                |  |                       |              | Pi Type        |
| Input Voltage Range                  | nom. Vin = 5V<br>nom. Vin = 24V                              | 4.5VDC<br>18VDC       |              | 9VDC<br>36VDC  |
| Input Surge Voltage                  | Vin = 5V<br>Vin = 24V  |                       |              | 10VDC<br>50VDC |
| Quiescent Current                    | Vin = 5V<br>Vin = 24V  |                       | 85mA<br>16mA |                |
| 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 <sup>(3)</sup> | Vin = 5V   | DC-DC ON<br>DC-DC OFF | 3.0VDC       | 3.2VDC         |
|                                      | Vin = 24V  | DC-DC ON<br>DC-DC OFF | 15.6VDC      | 16.5VDC        |

continued on next page

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

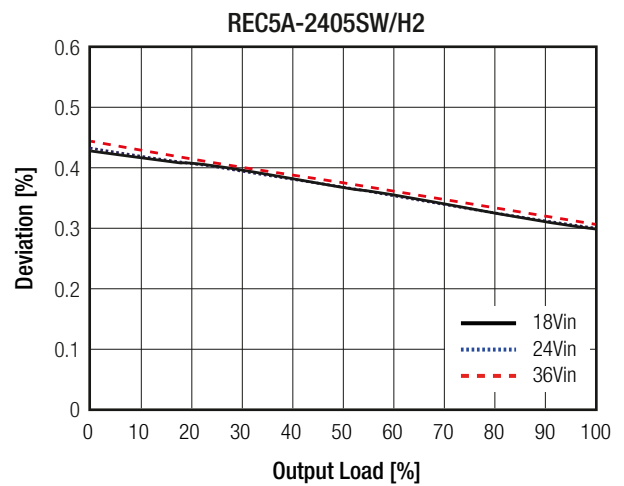
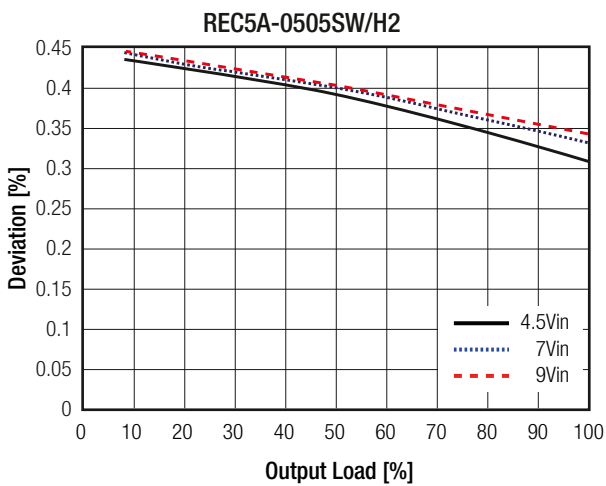
Efficiency vs. Load



**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



**PROTECTIONS**

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

**Notes:**

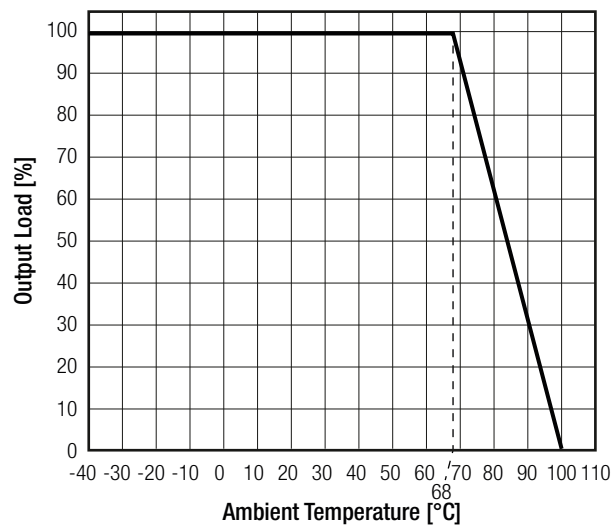
Note4: For repeat Hi-Pot testing, reduce the time and/or the test voltage

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

| ENVIRONMENTAL               |                                  |       |                          |
|-----------------------------|----------------------------------|-------|--------------------------|
| Parameter                   | Condition                        |       | Value                    |
| Operating Temperature Range | without derating                 |       | -40°C to +68°C           |
|                             | with derating                    |       | -40°C to +100°C          |
| Maximum Case Temperature    |                                  |       | +105°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 | 1546 x 10 <sup>3</sup> h |
|                             |                                  | +68°C | 555 x 10 <sup>3</sup> h  |

**Derating Graph**

(@ Chamber and natural convection 0.1 m/s)



**SAFETY AND CERTIFICATIONS**

| Certificate Type   | Report / File Number | Standard   |
|--|----------------------|--|
| Information Technology Equipment, General Requirements for Safety                                | E224736              | UL60950-1, 2nd Edition, 2014<br>CSA C22.2 No. 60950-1, 2nd Edition, 2014 |
| Audio/Video, information and communication technology equipment                                  | E224736              | UL62368-1, 2nd Edition, 2014<br>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<br>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 <sup>(5)</sup> | 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 |

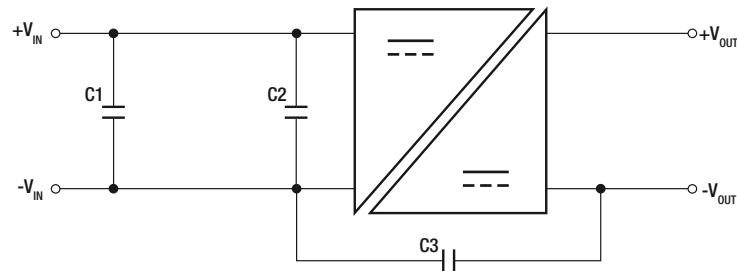
**Notes:**

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**



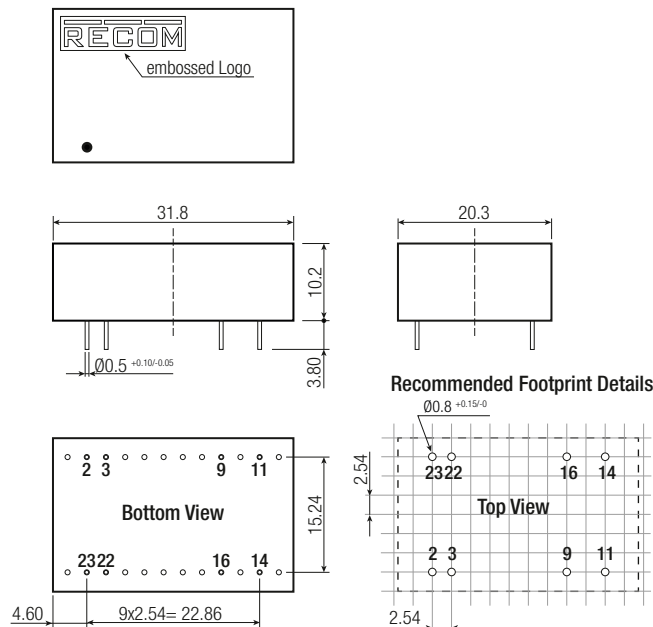
**Component List Class B**

| MODEL           | C1       | C2        | C3         |
|-----------------|----------|-----------|------------|
| REC5A-0505SW/H2 | 47µF/50V | 47µF/50V  | N/A        |
| REC5A-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)**



**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.

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Isolated DC/DC Converters](#) category:*

*Click to view products by [Recom Power](#) manufacturer:*

Other Similar products are found below :

[ESM6D044440C05AAQ](#) [FMD15.24G](#) [PSL486-7LR](#) [Q48T30020-NBB0](#) [JAHW100Y1](#) [SPB05C-12](#) [SQ24S15033-PS0S](#) [18952](#) [19-130041](#)  
[CE-1003](#) [CE-1004](#) [GQ2541-7R](#) [RDS180245](#) [MAU228](#) [J80-0041NL](#) [DFC15U48D15](#) [XGS-0512](#) [XGS-1205](#) [XGS-1212](#) [XGS-2412](#) [XGS-](#)  
[2415](#) [XKS-1215](#) [06322](#) [NCT1000N040R050B](#) [SPB05B-15](#) [SPB05C-15](#) [L-DA20](#) [DCG40-5G](#) [QME48T40033-PGB0](#) [XKS-2415](#) [XKS-2412](#)  
[XKS-1212](#) [XKS-1205](#) [XKS-0515](#) [XKS-0505](#) [XGS-2405](#) [XGS-1215](#) [XGS-0515](#) [PS9Z-6RM4](#) [73-551-5038I](#) [AK1601-9RT](#) [VI-N61-CM](#) [VI-](#)  
[R5022-EXWW](#) [PSC128-7iR](#) [RPS8-350ATX-XE](#) [DAS1004812](#) [PQA30-D24-S24-DH](#) [VI-M5F-CQ](#) [VI-LN2-EW](#) [VI-PJW01-CZY](#)