

## Features

## Regulated Converters

- 7.5W DIP24 Package
- 1KVDC, 2KVDC and 3KVDC Isolation Options
- Approved for Medical Applications (/H)
- UL and EN Safety Approvals
- Continuous Short Circuit Protection (power limiting)
- 5 Side Shielded Metal Case
- Full SMD design
- 2 Case Style Options
- Remote Pin Option
- Efficiency to 86 %

### Description

The REC7.5-xxxxSRW/DRW-series offer single and dual regulated outputs in a DIP24 package with 1kV, 2kV or 3kV options and are suitable for higher power industrial or medical applications. Remote on/off control is possible with the /CTRL option and SMD pinning is offered with the /SMD option. The converters can deliver 140% rated power for short periods of time to cope with applications with large capacitive loads or high start up currents.

### Selection Guide

| Part Number            | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) | Max Capacitive Load <sup>(1)</sup> |
|------------------------|---------------------|----------------------|---------------------|----------------|------------------------------------|
| REC7.5-xx3.3SRW/H*/A/M | 9-18, 18-36, 36-72  | 3.3                  | 1800                | 78             | 6800µF                             |
| REC7.5-xx05SRW/H*/A/M  | 9-18, 18-36, 36-72  | 5                    | 1500                | 79-82          | 6800µF                             |
| REC7.5-xx09SRW/H*/A/M  | 9-18, 18-36, 36-72  | 9                    | 833                 | 81-84          | 6800µF                             |
| REC7.5-xx12SRW/H*/A/M  | 9-18, 18-36, 36-72  | 12                   | 625                 | 82-85          | 6800µF                             |
| REC7.5-xx15SRW/H*/A/M  | 9-18, 18-36, 36-72  | 15                   | 500                 | 83-86          | 6800µF                             |
| REC7.5-xx05DRW/H*/A/M  | 9-18, 18-36, 36-72  | ±5                   | ±750                | 79-82          | ±2200µF                            |
| REC7.5-xx09DRW/H*/A/M  | 9-18, 18-36, 36-72  | ±9                   | ±417                | 81-84          | ±2200µF                            |
| REC7.5-xx12DRW/H*/A/M  | 9-18, 18-36, 36-72  | ±12                  | ±312                | 82-85          | ±2200µF                            |
| REC7.5-xx15DRW/H*/A/M  | 9-18, 18-36, 36-72  | ±15                  | ±250                | 83-86          | ±2200µF                            |

\* add suffix /H1 for 1kVDC Isolation, /H2 for 2kVDC isolation or /H3 for 3kVDC Isolation (not available in H3/A/M/SMD combination)

\* add suffix "/SMD" for SMD package, e.g. REC7.5-2405DRW/H1/A/M/SMD

\* add suffix "/CTRL" for Remote Pin option

\* add suffix „-R“ for Tape and Reel Packaging (only for SMD type available)  
e.g. REC7.5-2405DRW/H1/A/M/SMD/CTRL-R

no plastic case is available for REC7.5

2:1

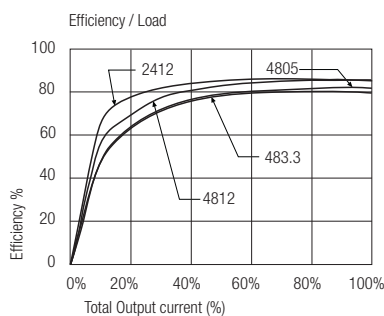
xx = 9-18Vin = 12,

xx = 18-36Vin = 24,

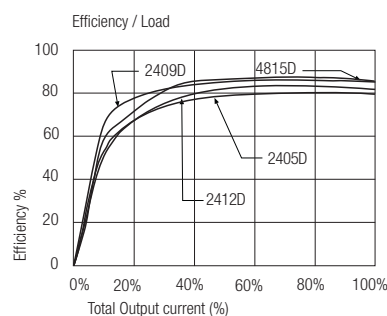
xx = 36-72Vin = 48

**Specifications** (measured at  $T_A = 25^\circ\text{C}$ , nominal input voltage, full load and after warm-up)

### Single



### Dual



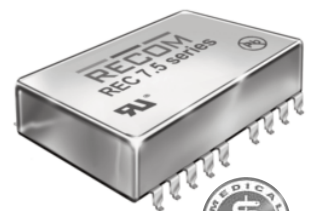
## ECONOLINE

DC/DC-Converter

with 3 year Warranty

RECOM

## 7.5 Watt DIP24 & SMD Single & Dual Output

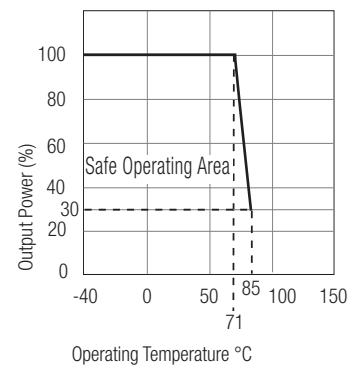


**E-358085**

**EN-60950-1 Certified**  
**EN-60601-1 Certified**  
**UL-60950-1 Certified**

# REC 7.5

## Derating-Graph (Ambient Temperature)



\*\*Any data referred to in this datasheet are of indicative nature and based on our practical experience only. For further details, please refer to our Application Notes.

Refer to Application Notes

**Specifications** (measured at  $T_A = 25^\circ\text{C}$ , nominal input voltage, full load and after warm-up)

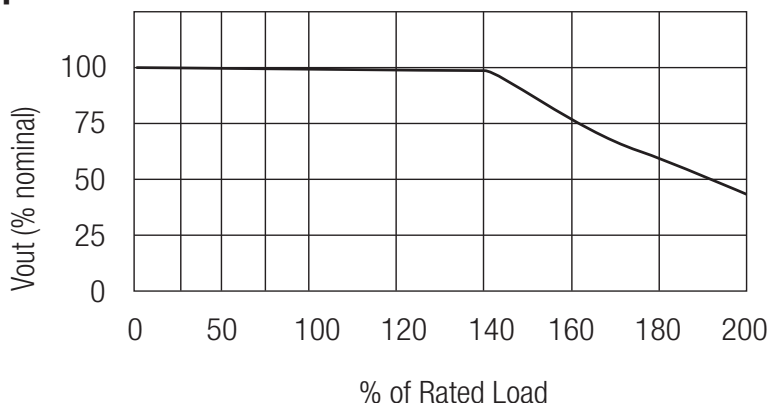
|                                                                             |           |                                                                                                             |                                                                        |
|-----------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Input Voltage Range                                                         |           |                                                                                                             | 2:1                                                                    |
| Output Voltage Accuracy                                                     |           |                                                                                                             | ±2% max.                                                               |
| Line Voltage Regulation                                                     |           |                                                                                                             | 0.4% max.                                                              |
| Load Voltage Regulation (25% to 100% full load )                            |           |                                                                                                             | 0.8% max.                                                              |
| Minimum Load                                                                |           |                                                                                                             | 10% <sup>(2)</sup>                                                     |
| Output Ripple and Noise (at 20MHz BW)                                       |           | 3.3V output type                                                                                            | 100mVp-p max.                                                          |
|                                                                             |           | 5, 9, 12 and 15V output types                                                                               | 50mVp-p max.                                                           |
| Operating Frequency (Full Load)                                             |           |                                                                                                             | 150kHz min. / 240kHz max.                                              |
| Input Filter                                                                |           |                                                                                                             | PI Network                                                             |
| Efficiency at Full Load                                                     |           |                                                                                                             | see Selection Guide                                                    |
| No Load Power Consumption                                                   |           |                                                                                                             | 300mW max.                                                             |
| Isolation Voltage                                                           | H1-Suffix | (tested for 1 second)                                                                                       | 1000VDC                                                                |
|                                                                             |           | (rated for 1 minute**)                                                                                      | 500VAC / 60Hz                                                          |
|                                                                             | H2-Suffix | (tested for 1 second)                                                                                       | 2000VDC                                                                |
|                                                                             |           | (rated for 1 minute**)                                                                                      | 1000VAC / 60Hz                                                         |
|                                                                             | H3-Suffix | (tested for 1 second)                                                                                       | 3000VDC                                                                |
|                                                                             |           | (rated for 1 minute**)                                                                                      | 1500VAC / 60Hz                                                         |
| Isolation Capacitance                                                       |           |                                                                                                             | 50pFtyp.                                                               |
| Isolation Resistance                                                        |           |                                                                                                             | 1 GΩ min.                                                              |
| Short Circuit Protection (Max temp. = 50°C during short circuit conditions) |           |                                                                                                             | Continuous, Auto Restart                                               |
| Operating Temperature Range (free air convection)                           |           |                                                                                                             | -40°C to +71°C (see Graph)                                             |
| Storage Temperature Range                                                   |           |                                                                                                             | -55°C to +125°C                                                        |
| Relative Humidity                                                           |           |                                                                                                             | 95% RH                                                                 |
| Case Material                                                               |           | Nickel Plated Metal with Non-Conductive Base                                                                |                                                                        |
| Thermal Impedance                                                           |           | Natural convection                                                                                          | 12°C/W                                                                 |
| Package Weight                                                              |           |                                                                                                             | 16g                                                                    |
| Packing Quantity                                                            |           |                                                                                                             | 15 pcs per Tube                                                        |
| MTBF (+25°C)                                                                |           | } Detailed Information see<br>Application Notes chapter "MTBF"                                              | using MIL-HDBK 217F                                                    |
| (+71°C)                                                                     |           |                                                                                                             | using MIL-HDBK 217F                                                    |
| 800 x 10 <sup>3</sup> hours                                                 |           |                                                                                                             | >200 x 10 <sup>3</sup> hours                                           |
| Certifications                                                              |           |                                                                                                             |                                                                        |
| UL General Safety                                                           |           | Report: E358085                                                                                             | UL 60950-1 1st Ed.<br>C22.2 No. 60950-1-03<br>EN60950-1:2006 +A12:2011 |
| EN General Safety                                                           |           | Report: SPCLVD1212007                                                                                       |                                                                        |
| EN Medical Safety                                                           |           | Report: MDD1205098-3 + RM1205098-3<br>IEC/EN 60601-1 3rd Edition; Medical Report + ISO14971 Risk Assessment |                                                                        |

**Notes**

- Note 1: Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter.
- Note 2: The REC 7.5 series requires a minimum of 10% load on the output to maintain specified regulation. Operating under no-load conditions will not damage these devices; however, they may not meet all listed specifications.

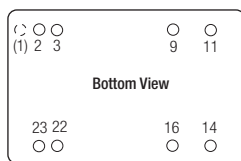
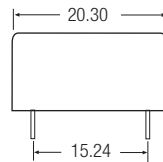
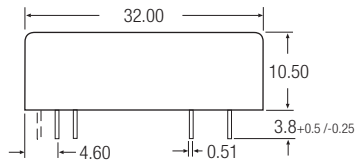
**Typical Characteristics**

## Overload Response

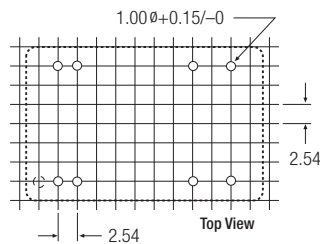


## Package Style and Pinning (mm)

### 24 PIN DIP Package



### Recommended Footprint Details



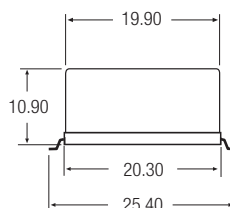
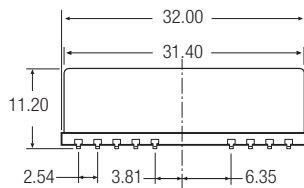
### Pin Connections DIP24

| Pin # | Single      | Dual        |
|-------|-------------|-------------|
| 1     | CTRL/No Pin | CTRL/No Pin |
| 2     | -Vin        | -Vin        |
| 3     | -Vin        | -Vin        |
| 9     | NC          | Com         |
| 11    | NC          | -Vout       |
| 14    | +Vout       | +Vout       |
| 16    | -Vout       | Com         |
| 22    | +Vin        | +Vin        |
| 23    | +Vin        | +Vin        |

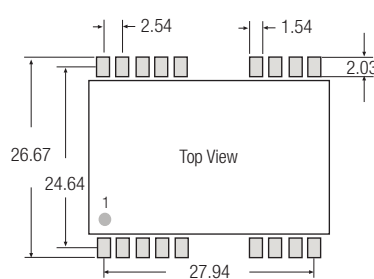
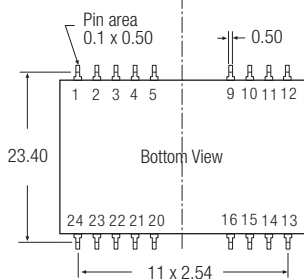
XX.X ± 0.5 mm  
XX.XX ± 0.25 mm

### 24 PIN SMD Package

/H3/A/M/SMD combination is not allowed



### Recommended Footprint Details



### Pin Connections DIP24 SMD

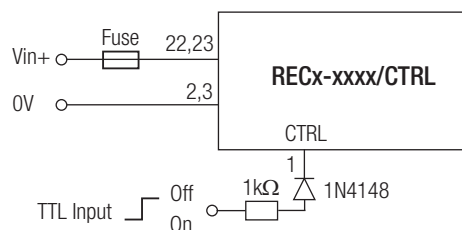
| Pin #          | Single  | Dual    |
|----------------|---------|---------|
| 1              | CTRL/NC | CTRL/NC |
| 2              | -Vin    | -Vin    |
| 3              | -Vin    | -Vin    |
| 9              | NC      | Com     |
| 11             | NC      | -Vout   |
| 14             | +Vout   | +Vout   |
| 16             | -Vout   | Com     |
| 22             | +Vin    | +Vin    |
| 23             | +Vin    | +Vin    |
| 1,4,5,10,12    | NC      | NC      |
| 13,15,20,21,24 | NC      | NC      |

NC = No Connection

XX.X ± 0.5 mm  
XX.XX ± 0.25 mm

### CTRL Option

ON = Open or  $0V < V_{ctrl} < 1.2V$   
OFF =  $2.2V < V_{ctrl} < 12V$



# Mouser Electronics

Authorized Distributor

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## RECOM:

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[1215DRW/H2/A/M/CTRL](#) [REC7.5-1215DRW/H2/A/M/SMD](#) [REC7.5-1215DRW/H2/A/M/SMD/CTRL](#) [REC7.5-1215DRW/H2/A/M/SMD/CTRL-R](#) [REC7.5-1215DRW/H2/A/M/SMD-R](#) [REC7.5-1215DRW/H3/A/M](#) [REC7.5-1215DRW/H3/A/M/CTRL](#) [REC7.5-1215SRW/H1/A/M](#) [REC7.5-1215SRW/H1/A/M/CTRL](#)