

## Features

### Regulated Converters

- 8W DIP24 Package
- 2KVDC and 3kVDC Isolation Options
- 2:1 and 4:1 Versions
- Continuous Short Circuit Protection (power limiting)
- Synchronous Rectification on 3.3, 5V outputs
- Full SMD internal design
- Through Hole or SMD Pinning Options
- Remote Control Pin
- Efficiency to 87%

### Description

The REC8-xxxxSRW/DRW-series offer single and dual regulated outputs in a DIP24 package with 2kV or 3kV isolation options and are suitable for higher power industrial or medical applications. Remote on/off control is standard and SMD pinning is offered with the /SMD option. The converters can deliver 150% 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 |
|-----------------------|---------------------------|----------------------|---------------------|----------------|----------------------|
| REC8-xx3.3SRW/H*/A/M  | 4.5-9, 9-18, 18-36, 36-75 | 3.3                  | 1600                | 83-85          | 2200μF               |
| REC8-xx05SRW/H*/A/M   | 4.5-9, 9-18, 18-36, 36-75 | 5                    | 1600                | 85-87          | 2200μF               |
| REC8-xx12SRW/H*/A/M   | 4.5-9, 9-18, 18-36, 36-75 | 12                   | 666                 | 84-86          | 470μF                |
| REC8-xx15SRW/H*/A/M   | 4.5-9, 9-18, 18-36, 36-75 | 15                   | 533                 | 84-86          | 220μF                |
| REC8-xx05DRW/H*/A/M   | 9-18, 18-36, 36-75        | ±5                   | ±800                | 84             | ±1000μF              |
| REC8-xx12DRW/H*/A/M   | 4.5-9, 9-18, 18-36, 36-75 | ±12                  | ±333                | 84-86          | ±220μF               |
| REC8-xx15DRW/H*/A/M   | 4.5-9, 9-18, 18-36, 36-75 | ±15                  | ±267                | 84-86          | ±100μF               |
| REC8-xx3.3SRWZ/H*/A/M | 9-36, 18-75               | 3.3                  | 1600                | 84             | 2200μF               |
| REC8-xx05SRWZ/H*/A/M  | 9-36, 18-75               | 5                    | 1600                | 86             | 2200μF               |
| REC8-xx12SRWZ/H*/A/M  | 9-36, 18-75               | 12                   | 666                 | 85             | 470μF                |
| REC8-xx15SRWZ/H*/A/M  | 9-36, 18-75               | 15                   | 533                 | 85             | 220μF                |
| REC8-xx05DRWZ/H*/A/M  | 9-36, 18-75               | ±5                   | ±800                | 83             | ±1000μF              |
| REC8-xx12DRWZ/H*/A/M  | 9-36, 18-75               | ±12                  | ±333                | 85             | ±220μF               |
| REC8-xx15DRWZ/H*/A/M  | 9-36, 18-75               | ±15                  | ±267                | 85             | ±100μF               |

\* Standard is /H2 for 2kVDC isolation, use /H3 for 3kVDC Isolation (not SMD)

\* add suffix "/SMD" for SMD package, e.g. REC8-2405SRW/H2/A/M/SMD

#### 2:1

xx = 4.5-9Vin = 05,  
xx = 9-18Vin = 12,  
xx = 18-36Vin = 24,  
xx = 36-75Vin = 48

#### 4:1

xx = 9-36Vin = 24,  
xx = 18-75Vin = 48

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

|                                                                   |                                      |
|-------------------------------------------------------------------|--------------------------------------|
| Input Voltage Range                                               | 2:1 & 4:1                            |
| Input Filter                                                      | PI Network                           |
| Output Voltage Accuracy                                           | ±1.5% max.                           |
| Line Voltage Regulation (VL to VH at full load)                   | ±0.5% max.                           |
| Load Voltage Regulation (25% to 100% full load)                   | Single ±0.5% max.<br>Dual ±1.2% max. |
| Cross Regulation (100%: 25% to 100% full load)                    | ±5% max.                             |
| Output Ripple and Noise (with 100n output capacitor and 20MHz BW) | 50mVp-p max.                         |
| Start-up time                                                     | 300ms typ.                           |
| Operating Frequency (Full Load)                                   | 330kHz typ.                          |
| Efficiency at Full Load                                           | see Selection Guide                  |
| Minimum Load                                                      | 0%                                   |

continued on next page

## ECONOLINE

### DC/DC-Converter

with 3 year Warranty

RECOM

## 8 Watt DIP24 & SMD Single & Dual Output



E-224736

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

# REC8

Refer to Application Notes

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

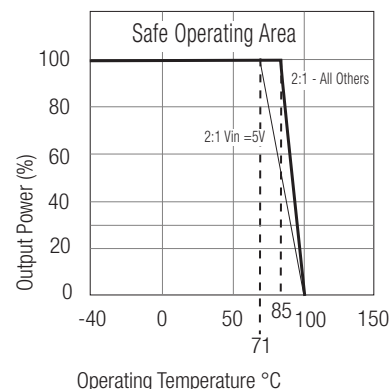
|                                  |                       |                                                              |                                              |                 |
|----------------------------------|-----------------------|--------------------------------------------------------------|----------------------------------------------|-----------------|
| Input Surge Voltage (100ms max.) |                       | 5V Input                                                     | 15VDC                                        |                 |
|                                  |                       | 12V Input                                                    | 36VDC                                        |                 |
|                                  |                       | 24V Input                                                    | 50VDC                                        |                 |
|                                  |                       | 48V Input                                                    | 100VDC                                       |                 |
| Isolation Voltage                | H2-Suffix and SMD     | (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            |                       |                                                              | 1200pF typ.                                  |                 |
| Isolation Resistance             |                       |                                                              | 1 GΩ min.                                    |                 |
| Overload Protection              |                       |                                                              | 150% typ.                                    |                 |
| Short Circuit Protection         |                       |                                                              | Continuous, Auto Restart                     |                 |
| Operating Temperature Range      | 4:1                   | -40°C to +71°C (see Graph)                                   |                                              |                 |
|                                  | 2:1- Vin=5V           | -40°C to +71°C (see Graph)                                   |                                              |                 |
|                                  | 2:1 - All Others      | -40°C to +85°C (see Graph)                                   |                                              |                 |
|                                  | (free air convection) |                                                              |                                              |                 |
| Remote On/Off                    | DC/DC ON              | Open or 3.5V<Vr<12V                                          |                                              |                 |
|                                  | DC/DC OFF             | Short or 0V<Vr<1.2V                                          |                                              |                 |
| Storage Temperature Range        |                       |                                                              | -55°C to +105°C                              |                 |
| Temperature Coefficient          |                       |                                                              | ±0.05% max.                                  |                 |
| Relative Humidity                |                       |                                                              | 95% RH max.                                  |                 |
| Case Material                    |                       |                                                              | Nickel Plated Metal with Non-Conductive Base |                 |
| Thermal Impedance                |                       |                                                              | Natural convection 12°C/W                    |                 |
| Maximum Case Temperature         |                       |                                                              | 100°C                                        |                 |
| Vibration                        |                       |                                                              | 10-55Hz, 2G, 30mins along X,Y & Z            |                 |
| Package Weight                   |                       |                                                              | 18g                                          |                 |
| Packing Quantity                 |                       |                                                              | 15 pcs per Tube                              |                 |
| MTBF (+25°C)<br>(+71°C)          |                       | Detailed Information see<br>Application Notes chapter "MTBF" | using MIL-HDBK 217F                          | 1200 x 10³hours |
|                                  |                       |                                                              | using MIL-HDBK 217F                          | >300 x 10³hours |

#### Certifications

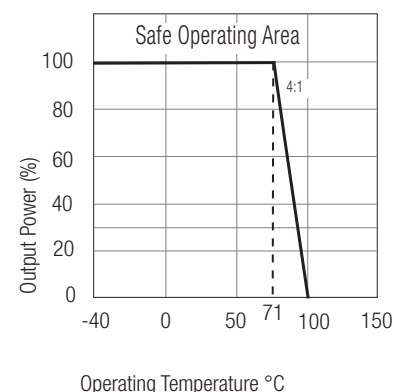
|                   |                                 |                                           |
|-------------------|---------------------------------|-------------------------------------------|
| EN General Safety | Report: SPCLVD1211033-2         | EN60950-1:2006 +A12:2011                  |
| UL General Safety | Report: E224736                 | UL 60950-1 1st Ed.                        |
|                   |                                 | C22.2 No. 60950-1-03                      |
| EN Medical Safety | Report: MDD12060585 + RM1206085 | IEC/EN 60601-1 3rd Edition                |
|                   |                                 | Medical Report + ISO14971 Risk Assessment |

## Derating-Graph (Ambient Temperature)

### 2:1 Converters



### 4:1 Converters

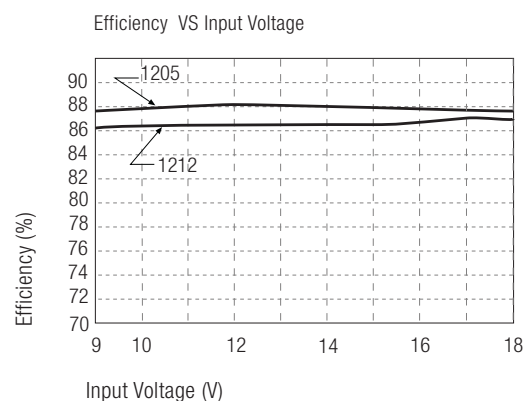
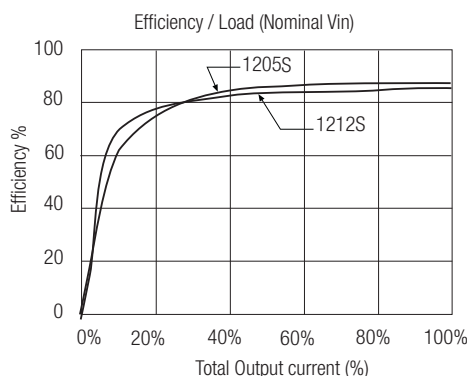


\*\*Any data referred to in this datasheet are of indicative nature and based on our practical experience only.

For further details, please refer to our Application Notes.

## Typical Characteristics

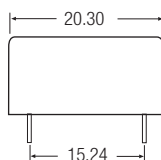
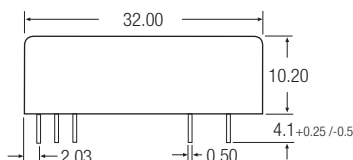
### REC8-1205SRW/H2/A/M (/SMD) REC8-1212SRW/H2/A/M (/SMD)



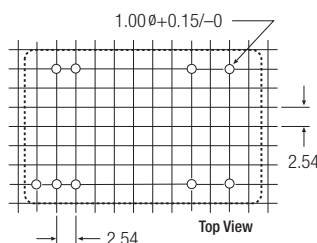
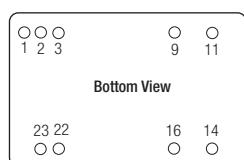
Note: Refer to Application Notes for EMC Class B Filter suggestion

## Package Style and Pinning (mm)

24 PIN DIP Package - Available with /H2 and /H3 Options



### Recommended Footprint Details



### Pin Connections DIP24

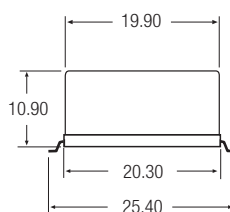
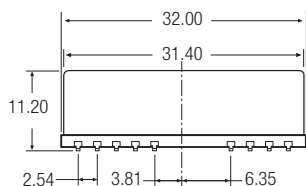
| Pin # | Single | Dual  |
|-------|--------|-------|
| 1     | CTRL   | CTRL  |
| 2     | -Vin   | -Vin  |
| 3     | -Vin   | -Vin  |
| 9     | NC     | Com   |
| 11    | NC     | -Vout |
| 14    | +Vout  | +Vout |
| 16    | -Vout  | Com   |
| 22    | +Vin   | +Vin  |
| 23    | +Vin   | +Vin  |

NC = No Connection

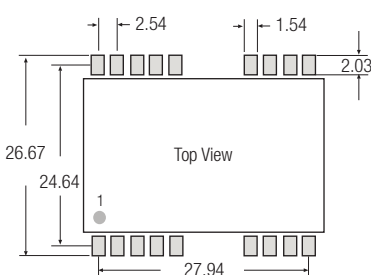
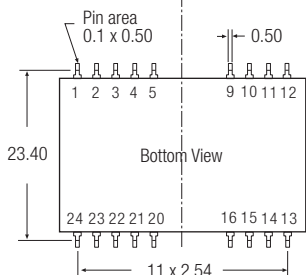
XX.X ± 0.5 mm

XX.XX ± 0.25 mm

24 PIN SMD Package - available with /H2 option only.



### Recommended Footprint Details



### Pin Connections DIP24 SMD

| Pin #          | Single | Dual  |
|----------------|--------|-------|
| 1              | CTRL   | CTRL  |
| 2              | -Vin   | -Vin  |
| 3              | -Vin   | -Vin  |
| 9              | NC     | Com   |
| 11             | NC     | -Vout |
| 14             | +Vout  | +Vout |
| 16             | -Vout  | Com   |
| 22             | +Vin   | +Vin  |
| 23             | +Vin   | +Vin  |
| 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

# Mouser Electronics

Authorized Distributor

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