

## Features

### Regulated Converters

- Low Cost 3W converter in DIP24 Package
- 1kVDC Isolation
- Regulated Output
- Continuous Short Circuit Protection
- Internal SMD design
- 3 Pinout Options, 3 Case Styles.
- Efficiency to 75 %

#### Description

The REC3-SR/DR series is a low cost converter containing a built in linear regulator to give a regulated, load independent constant voltage output. The converter is designed to run from a regulated supply and is typically used to provide an isolated output or to generate dual rails from a single rail supply. 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<br>DIP24 (SMD) | Input Voltage<br>(VDC) | Output Voltage<br>(VDC) | Output Current<br>(mA) | Max Capacitive Load <sup>(1)</sup> |
|----------------------------|------------------------|-------------------------|------------------------|------------------------------------|
| REC3-xx05SR/H1             | 5, 12, 24              | 5                       | 600                    | 4700µF                             |
| REC3-xx12SR/H1             | 5, 12, 24              | 12                      | 250                    | 2200µF                             |
| REC3-xx15SR/H1             | 5, 12, 24              | 15                      | 200                    | 2200µF                             |
| REC3-xx05DR/H1             | 5, 12, 24              | ±5                      | ±300                   | ±2200µF                            |
| REC3-xx12DR/H1             | 5, 12, 24              | ±12                     | ±125                   | ±1000µF                            |
| REC3-xx15DR/H1             | 5, 12, 24              | ±15                     | ±100                   | ±1000µF                            |

xx = Input Voltage. Other input and output voltage combinations available on request.

\* add suffix "/SMD" for SMD package, e.g. REC3-0505SR/H1/SMD

\* add suffix "/M" for Metal Case, e.g. REC3-0505SR/H1/M

\* add suffix "-R" for Tape and Reel packaging, e.g. REC3-0505SR/H1/SMD-R

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

|                                                   |                                                              |                                                            |
|---------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|
| Input Voltage Range                               | 5V                                                           | 4.5V - 5.75V                                               |
|                                                   | 12V                                                          | 10.2V - 13.8V                                              |
|                                                   | 24V                                                          | 20.4V - 27.6V                                              |
| Output Voltage Accuracy                           |                                                              | ±3% typ.                                                   |
| Line Voltage Regulation                           |                                                              | ±0.5% max                                                  |
| Load Voltage Regulation (10% to 100% full load)   |                                                              | ±1% max.                                                   |
| Minimum Load                                      |                                                              | 10% <sup>(2)</sup>                                         |
| Output Ripple and Noise (at 20MHz BW)             |                                                              | 100mVp-p max.                                              |
| Operating Frequency                               |                                                              | 75kHz min.                                                 |
| Efficiency at Full Load                           |                                                              | 65% min.                                                   |
| No Load Power Consumption                         |                                                              | 300mW max.                                                 |
| Isolation Voltage                                 | (tested for 1 second)                                        | 1000VDC                                                    |
|                                                   | (rated for 1 minute**)                                       | 500VAC / 60Hz                                              |
| Isolation Capacitance                             |                                                              | 30pF typ.                                                  |
| Isolation Resistance                              |                                                              | 1 GΩ min.                                                  |
| Short Circuit Protection                          |                                                              | Continuous                                                 |
| Operating Temperature Range (free air convection) |                                                              | -40°C to +80°C (see Graph)                                 |
| Storage Temperature Range                         |                                                              | -55°C to +125°C                                            |
| Relative Humidity                                 |                                                              | 95% RH                                                     |
| Thermal Impedance                                 | Natural convection                                           | 20°C/W for plastic case<br>12°C/W for metal case           |
| Package Weight                                    |                                                              | 12g                                                        |
| Packing Quantity                                  |                                                              | 15 pcs per Tube<br>100 pcs per Reel                        |
| MTBF (+25°C)                                      | Detailed Information see<br>Application Notes chapter "MTBF" | using MIL-HDBK 217F                                        |
| (+80°C)                                           |                                                              | using MIL-HDBK 217F                                        |
|                                                   |                                                              | 950 x 10 <sup>3</sup> hours<br>145 x 10 <sup>3</sup> hours |

continued on next page

## ECONOLINE

### DC/DC-Converter

with 3 year Warranty

## RECOM

### 3 Watt

### DIP24 & SMD

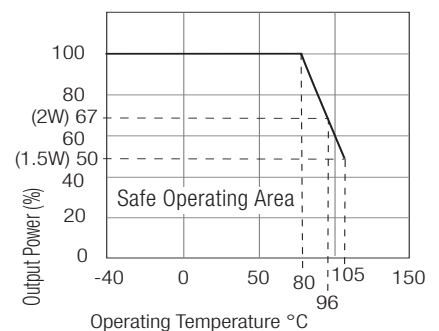
### Single & Dual Output



EN-60950-1 Certified

## REC3-S\_DR

### 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)

Certifications  
EN General Safety

Report: SPCLVD1212007

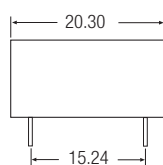
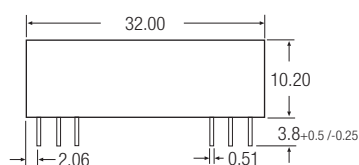
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Notes

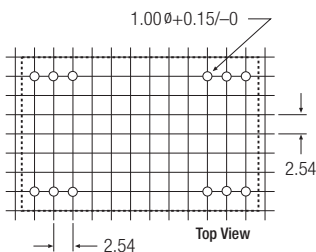
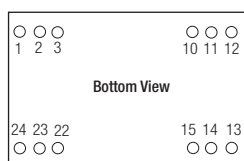
- Note 1: Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter
- Note 2: The REC3-R series requires a minimum of 10% load on the output to maintain specified regulation. Operating under no-load conditions will not damage these devices; however, they may not meet all listed specifications.

**Package Style and Pinning (mm)**

**24 PIN DIP Package**



**Recommended Footprint Details**



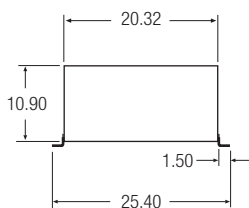
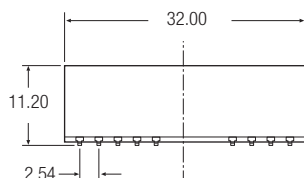
**Pin Connections**

| Pin # | Single | Dual  |
|-------|--------|-------|
| 1     | +Vin   | +Vin  |
| 2     | No Pin | -Vout |
| 3     | No Pin | Com   |
| 10    | -Vout  | Com   |
| 11    | +Vout  | +Vout |
| 12    | -Vin   | -Vin  |
| 13    | -Vin   | -Vin  |
| 14    | +Vout  | +Vout |
| 15    | -Vout  | Com   |
| 22    | No Pin | Com   |
| 23    | No Pin | -Vout |
| 24    | +Vin   | +Vin  |

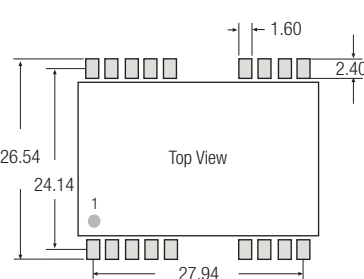
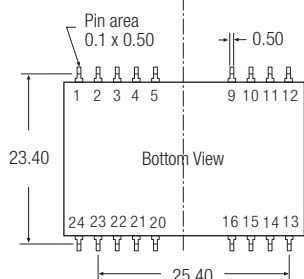
NC = No Connection

XX.X  $\pm 0.5$  mm  
XX.XX  $\pm 0.25$  mm

**24 PIN DIP SMD Package**



**Recommended Footprint Details**



**Pin Connections**

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

XX.X  $\pm 0.5$  mm  
XX.XX  $\pm 0.25$  mm

**SMD pin connections follow standard package pinning.**

**All unused pins are NC (No Connection).**

# Mouser Electronics

Authorized Distributor

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