

# 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 DIP24 (SMD)	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (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<sub>A</sub> = 25°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
		12°C/W for metal case
Package Weight		12g
Packing Quantity		15 pcs per Tube
		100 pcs per Reel
MTBF (+25°C)	} Detailed Information see using MIL-HDBK 217F	950 x 10 <sup>3</sup> hours
		145 x 10 <sup>3</sup> hours
(+80°C)	} Application Notes chapter "MTBF"	

continued on next page

# ECONOLINE

## DC/DC-Converter

with 3 year Warranty

# RECOM

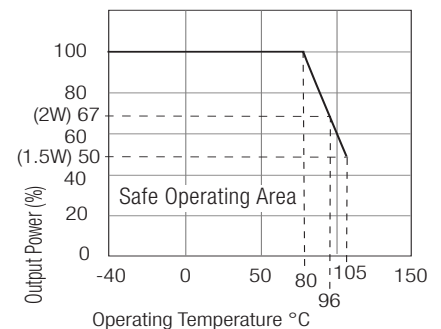
## 3 Watt DIP24 & SMD Single & Dual Output



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

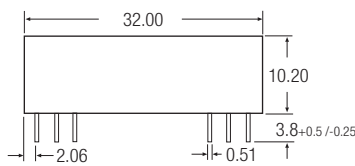
EN60950-1:2006 + A11:2009+A1:2010+A12:2011

Notes

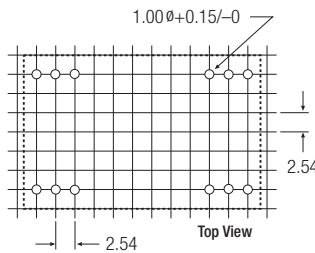
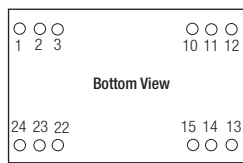
- Note 1: Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter
- Note 2: The REC3-R series requires a minimum of 10% load on the output to maintain specified regulation. Operating under no-load conditions will not damage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

**Package Style and Pinning (mm)**

**24 PIN DIP Package**



**Recommended Footprint Details**



**Pin Connections**

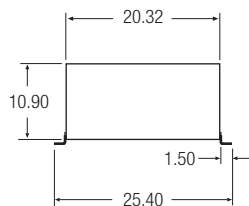
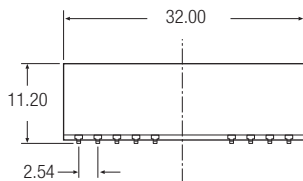
Pin #	Single	Dual
1	+Vin	+Vin
2	No Pin	-Vout
3	No Pin	Com
10	-Vout	Com
11	+Vout	+Vout
12	-Vin	-Vin
13	-Vin	-Vin
14	+Vout	+Vout
15	-Vout	Com
22	No Pin	Com
23	No Pin	-Vout
24	+Vin	+Vin

NC = No Connection

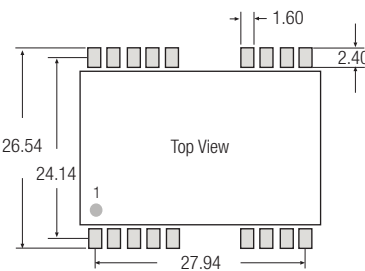
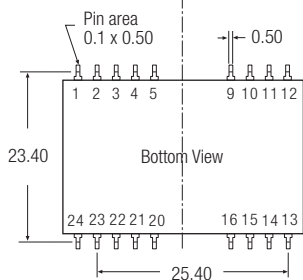
XX.X ± 0.5 mm  
XX.XX ± 0.25 mm

REC3-R

**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 ± 0.5 mm  
XX.XX ± 0.25 mm

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

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

The product information and specifications are subject to change without prior notice. RECOM products are not authorized for use in safety-critical applications (such as life support) without RECOM's explicit written consent. A safety-critical application is defined as an application where a failure of a RECOM product may reasonably be expected to endanger or cause loss of life, inflict bodily harm or damage property. The buyer 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.