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.

**Features**
- 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**

**Selection Guide**

<table>
<thead>
<tr>
<th>Part</th>
<th>Input Voltage (VDC)</th>
<th>Output Voltage (VDC)</th>
<th>Output Current (mA)</th>
<th>Max Capacitive Load (µF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>REC3-xx05SR/H1</td>
<td>5, 12, 24</td>
<td>5</td>
<td>600</td>
<td>4700µF</td>
</tr>
<tr>
<td>REC3-xx12SR/H1</td>
<td>5, 12, 24</td>
<td>12</td>
<td>250</td>
<td>2200µF</td>
</tr>
<tr>
<td>REC3-xx15SR/H1</td>
<td>5, 12, 24</td>
<td>15</td>
<td>200</td>
<td>2200µF</td>
</tr>
<tr>
<td>REC3-xx05DR/H1</td>
<td>5, 12, 24</td>
<td>±5</td>
<td>±300</td>
<td>±2200µF</td>
</tr>
<tr>
<td>REC3-xx12DR/H1</td>
<td>5, 12, 24</td>
<td>±12</td>
<td>±125</td>
<td>±1000µF</td>
</tr>
<tr>
<td>REC3-xx15DR/H1</td>
<td>5, 12, 24</td>
<td>±15</td>
<td>±100</td>
<td>±1000µF</td>
</tr>
</tbody>
</table>

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**

- Input Voltage Range: 5V, 12V, 24V
- Output Voltage Accuracy: ±3% typ.
- Line Voltage Regulation: ±0.5% max.
- Load Voltage Regulation (10% to 100% full load): ±1% max.
- Minimum Load: 10% (2)
- Output Ripple and Noise (at 20MHz BW): 100mVpp max.
- Operating Frequency: 75kHz min.
- Efficiency at Full Load: 65% min.
- No Load Power Consumption: 300mW max.
- Isolation Voltage: 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: 20°C/CW for plastic case, 12°C/CW for metal case
- Package Weight: 12g
- Packing Quantity: 15 pcs per Tube, 100 pcs per Reel

**MTBF**
- (+25°C) using MIL-HDBK 217F: 950 x 10^6 hours
- (+80°C) using MIL-HDBK 217F: 145 x 10^6 hours

**ECONOLINE**
DC/DC-Converter
with 3 year Warranty

**REC3-S_DR**
3 Watt
DIP24 & SMD
Single & Dual Output

**Derating-Graph**
(Ambient Temperature)

**RoHS**
2011/65/EU
6/6

EN-60950-1 Certified

**Refer to Application Notes**

www.recom-international.com
REV: 0/2014
E-141

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.

continued on next page
## Pin Connections

<table>
<thead>
<tr>
<th>Pin #</th>
<th>Single</th>
<th>Dual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+Vin</td>
<td>+Vin</td>
</tr>
<tr>
<td>2</td>
<td>No Pin</td>
<td>–Vout</td>
</tr>
<tr>
<td>3</td>
<td>No Pin</td>
<td>Com</td>
</tr>
<tr>
<td>4</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>5</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>9</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>10</td>
<td>–Vout</td>
<td>Com</td>
</tr>
<tr>
<td>11</td>
<td>+Vout</td>
<td>+Vout</td>
</tr>
<tr>
<td>12</td>
<td>–Vin</td>
<td>–Vin</td>
</tr>
<tr>
<td>13</td>
<td>–Vin</td>
<td>–Vin</td>
</tr>
<tr>
<td>14</td>
<td>–Vin</td>
<td>–Vin</td>
</tr>
<tr>
<td>15</td>
<td>–Vout</td>
<td>Com</td>
</tr>
<tr>
<td>22</td>
<td>No Pin</td>
<td>Com</td>
</tr>
<tr>
<td>23</td>
<td>No Pin</td>
<td>–Vout</td>
</tr>
<tr>
<td>24</td>
<td>+Vin</td>
<td>+Vin</td>
</tr>
<tr>
<td>25</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>26</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>27</td>
<td>NC</td>
<td>NC</td>
</tr>
</tbody>
</table>

NC = No Connection

---

## Package Style and Pinning (mm)

### 24 PIN DIP Package

![24 PIN DIP Package Diagram](image)

### Recommended Footprint Details

- **Bottom View**: 32.00 x 10.20 x 3.81
- **Top View**: 20.30 x 15.24

### 24 PIN DIP SMD Package

![24 PIN DIP SMD Package Diagram](image)

### Recommended Footprint Details

- **Bottom View**: 23.40 x 2.54
- **Top View**: 20.32 x 15.90

### SMD pin connections follow standard package pinning.

All unused pins are NC (No Connection).

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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.

---

Specifications (measured at $T_A = 25°C$, nominal input voltage, full load and after warm-up)

- **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.

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**Certifications**

- EN General Safety
- Report: SPCLV1212007

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**Recommended Footprint Details**

- **24 PIN DIP Package**: XX.X ± 0.5 mm, XX.XX ± 0.25 mm
- **24 PIN DIP SMD Package**: XX.X ± 0.5 mm, XX.XX ± 0.25 mm

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The product information and specifications are subject to change without prior notice. All products are designed for non-safety critical commercial and industrial applications.

The Buyer agrees to implement safeguards that anticipate the consequences of any failures that might cause harm, loss of life and/or damage property.