

## Features

### Regulated Converters

- Internal SMD Technology
- 1kVDC Isolation
- Continuous Short Circuit Protected
- UL94V-0 Package Material
- Regulated Output
- No External Components Required
- Efficiency to 63%

**ECONOLINE**

DC/DC-Converter

## RY/S\_DCP Series

### Selection Guide

| Part Number    | Input Voltage | Output Voltage | Output Current | Input Current |         | Efficiency |
|----------------|---------------|----------------|----------------|---------------|---------|------------|
|                | (VDC)         | (VDC)          | (mA)           | Full Load     | No Load | (%)        |
| SIP 7          |               |                |                | (mA)          |         |            |
| RY-0505SCP/DCP | 5             | 5/±5           | 200/±100       | 350           | 20      | 57         |
| RY-0512SCP/DCP | 5             | 12/±12         | 84/±42         | 330           | 32      | 61         |
| RY-0515SCP/DCP | 5             | 15/±15         | 67/±34         | 322           | 32      | 62         |
| RY-1205SCP/DCP | 12            | 5/±5           | 200/±100       | 141           | 10      | 59         |
| RY-1212SCP/DCP | 12            | 12/±12         | 84/±42         | 134           | 15      | 62         |
| RY-1215SCP/DCP | 12            | 15/±15         | 67/±34         | 132           | 15      | 63         |
| RY-2405SCP/DCP | 24            | 5/±5           | 200/±100       | 67            | 6       | 62         |
| RY-2412SCP/DCP | 24            | 12/±12         | 84/±42         | 66            | 6       | 63         |
| RY-2415SCP/DCP | 24            | 15/±15         | 67/±34         | 66            | 6       | 63         |

xx = Input Voltage

### Description

These converters are designed to offer short circuit protected outputs in industrial standard 1 Watt package for the temperature range -25°C to +70°C.

The Single-output-converters also offer a Remote-On-Off pin for external control of the output voltage by standard TTL-open-collector-port or similar. For details regarding this feature please refer to our RY-series.

### Specifications (Core Operating Area)

|                                                   |                                                                |                       |                              |
|---------------------------------------------------|----------------------------------------------------------------|-----------------------|------------------------------|
| Input Voltage Range                               | ±10%                                                           |                       |                              |
| Output Voltage Accuracy                           | ±2%                                                            |                       |                              |
| Line Voltage Regulation                           | ±0.5% max.                                                     |                       |                              |
| Load Voltage Regulation (10% to 100% full load)   | ±0.5% max.                                                     |                       |                              |
| Output Ripple and Noise (20MHz limited)           | 50mVp-p max.                                                   |                       |                              |
| Operating Frequency                               | 100kHz max.                                                    |                       |                              |
| Efficiency at Full Load                           | 60% typ.                                                       |                       |                              |
| Isolation Voltage                                 | (tested for 1 second)                                          | 1000VDC min.          |                              |
| Rated Working Voltage                             | (long term isolation)                                          | see Application Notes |                              |
| Isolation Capacitance                             | 20pF max.                                                      |                       |                              |
| Isolation Resistance                              | 1 GΩ min.                                                      |                       |                              |
| Short Circuit Protection                          | continuous                                                     |                       |                              |
| Temperature Coefficient                           | 0.03%/°C                                                       |                       |                              |
| Operating Temperature Range (free air convection) | -25°C to +70°C (see Graph)                                     |                       |                              |
| Storage Temperature Range                         | -55°C to +100°C                                                |                       |                              |
| Relative Humidity                                 | 95% RH                                                         |                       |                              |
| Package Weight                                    | 2.9g                                                           |                       |                              |
| MTBF (+25°C)                                      | } Detailed Information see<br>Application Notes chapter "MTBF" | using MIL-HDBK 217F   | 1023 x 10 <sup>3</sup> hours |
| (+70°C)                                           |                                                                | using MIL-HDBK 217F   | 170 x 10 <sup>3</sup> hours  |

**1 Watt**

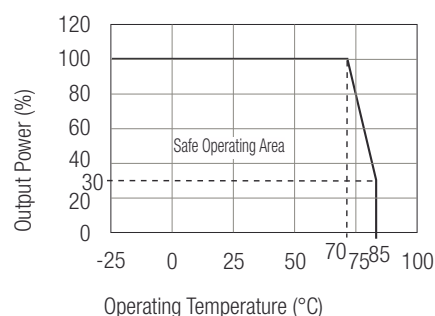
**SIP7**

**Single & Dual Output**



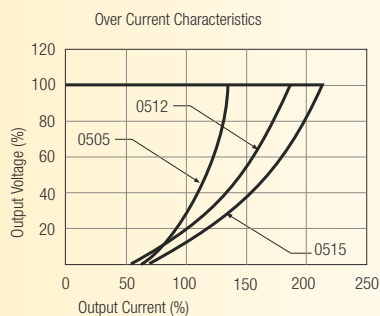
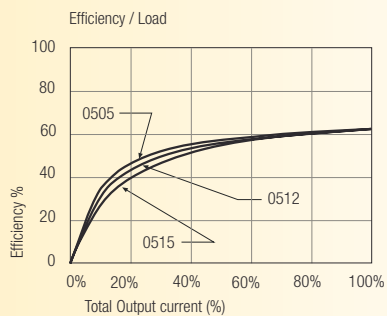
**RECOM**

### Derating-Graph (Ambient Temperature)

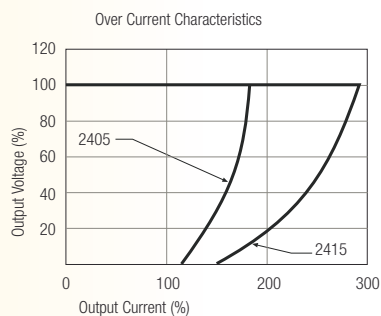
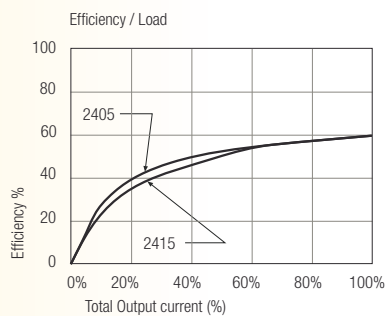


## Typical Characteristics

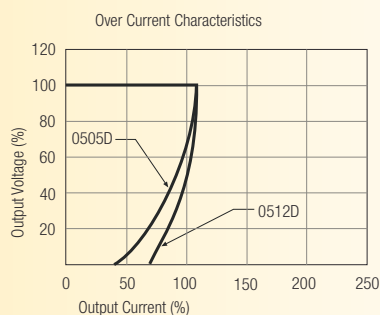
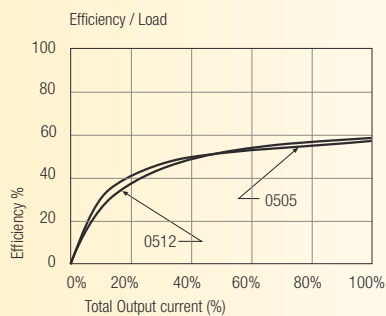
### RY-05xxSCP



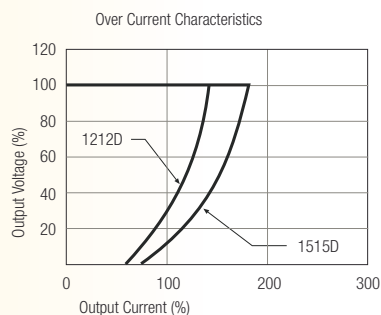
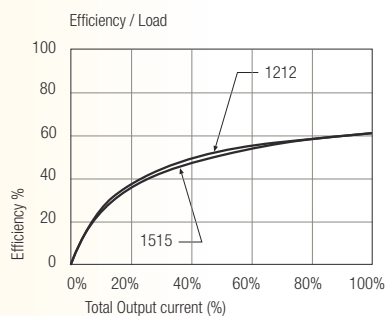
### RY-24xxSCP



### RY-05xxDCP



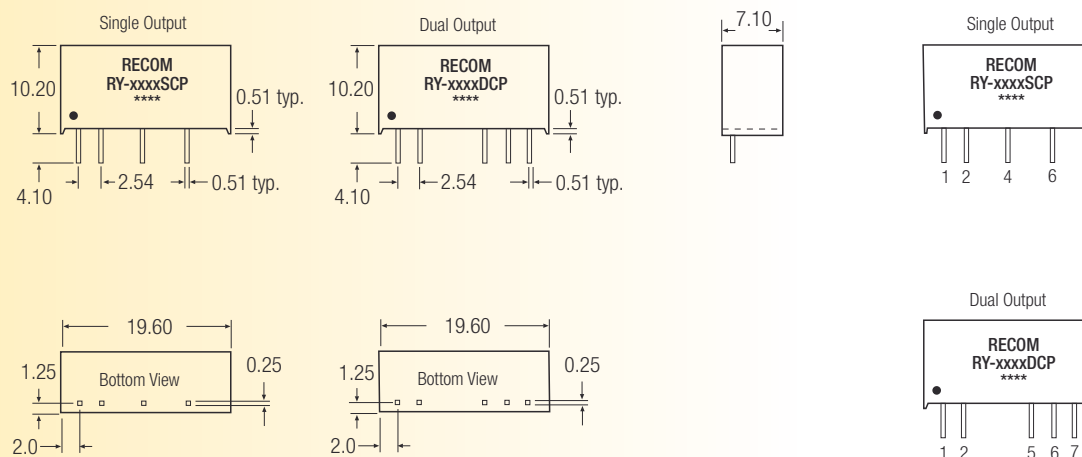
### RY-1212\_1515DCP



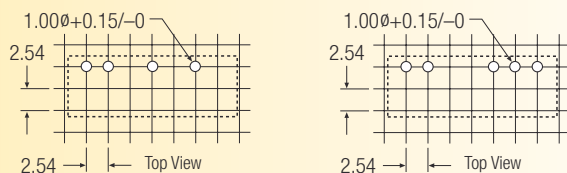
## Package Style and Pinning (mm)

### 7 PIN SIP Package

3rd angle projection



### Recommended Footprint Details



### Pin Connections

| Pin # | Single | Dual   |
|-------|--------|--------|
| 1     | +Vin   | +Vin   |
| 2     | -Vin   | -Vin   |
| 4     | -Vout  | No Pin |
| 5     | No Pin | -Vout  |
| 6     | +Vout  | Com    |
| 7     | No Pin | +Vout  |

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