

## Features

### Unregulated Converters

- High Efficiency up to 84%
- Low Deviation (10% ~ 100% Load)
- 1kVDC and 2kVDC Isolation Option
- Safety Certified
- -40°C to +100°C Operating Temperature Range
- 1W SIP4 Package

#### Description

The RO/E series is an unregulated DC/DC converter in standard SIP4 package style. This series has been designed to offer exceptionally high efficiency at low loads, an extended operating temperature range and low deviation (10% to 100% load). Uses include applications with restricted energy budget and industrial applications where a high efficiency level is required.

#### Selection Guide

Part Number SMD	Isolation Voltage (kVDC)	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (typ.)	Capacitive Load (max.) <sup>(1)</sup>
RO-3.305S/E*	1	3.3	5	200	83%	2200µF
RO-0505S/E*	1	5	5	200	84%	2200µF
RO-1205S/E*	1	12	5	200	84%	2200µF
RO-2405S/E*	1	24	5	200	81%	2200µF

\* add Suffix "/H" for 2kVDC Isolation Voltage - e.g. RO-3.305S/EH

\* add Suffix "/P" for Continuous Short Protection - e.g. RO-3.305S/EHP, RO-3.305S/EP

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

Input Voltage Range	$\pm 10\%$	
Output Voltage Accuracy	$\pm 5\%$ max.	
Line Voltage Regulation	low line to high line at full load	1.2% max.
Load Voltage Regulation	Load Deviation 10% to 100%	12% typ.
Output Ripple and Noise (20MHz BW)	50mVp-p typ., 100mVp-p max.	
Operating Frequency ( $V_{in}$ =nominal input)	20kHz min. / 90kHz max.	
Efficiency	see Selection Guide	
Minimum Load = 0%	Specifications valid for 10% minimum load only	
Isolation Voltage	(tested for 1 second) (rated for 1 minute**)	1000 VDC 500VAC / 60Hz
Isolation Voltage	H-Suffix (tested for 1 second) (rated for 1 minute**)	2000 VDC 1000VAC / 60Hz
Isolation Capacitance	75pF max.	
Isolation Resistance	(Viso=500V)	10GΩ min.
Short-Circuit Protection	1 second	
Operating Temperature Range	-40°C to +100°C	
Storage Temperature	-55°C to +125°C	
Relative Humidity	95% RH	
Package Weight	1.4g	
MTBF (+25°C)	} Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F 3459 x 10 <sup>3</sup> hours
MTBF (+100°C)		using MIL-HDBK 217F 756 x 10 <sup>3</sup> hours

\*\*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.

#### 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.

## ECONOLINE

### DC/DC-Converter

with 3 year Warranty

# RECOM

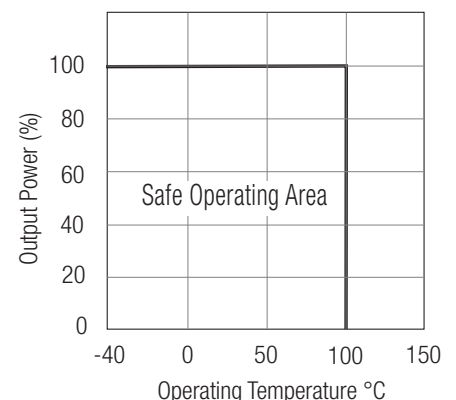
## 1 Watt SIP4 Single Output



**EN-60950-1 (pending)**  
**UL-60950-1 (pending)**

# RO/E

## Derating-Graph (Ambient Temperature)

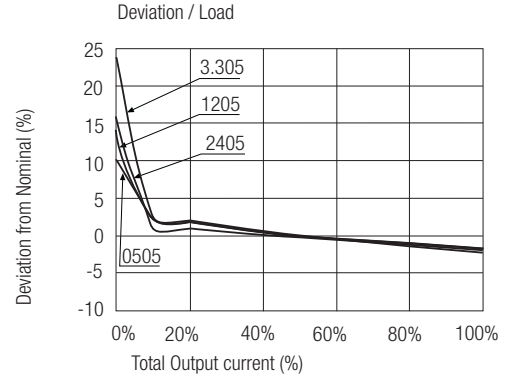
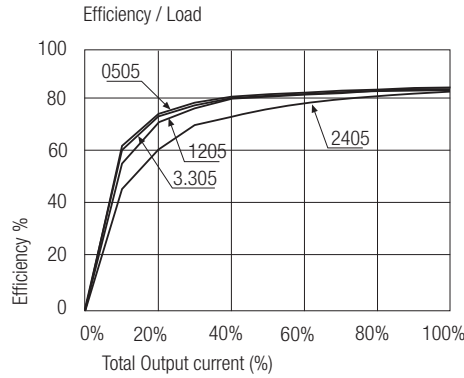
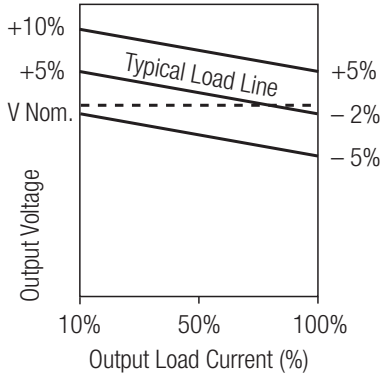


Refer to Application Notes

**Typical Characteristics**

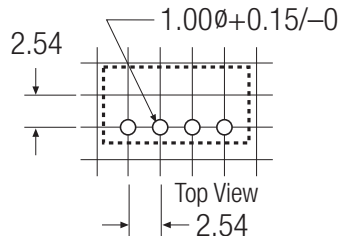
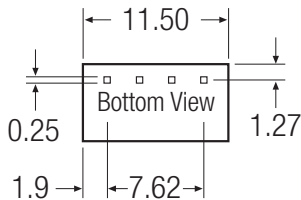
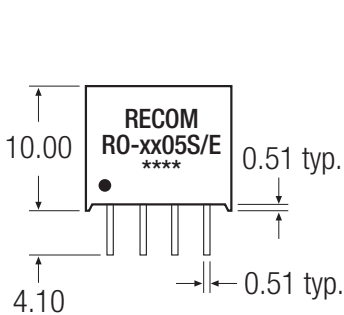
**RO-xx05S/E**

**Tolerance Envelope**



**Package Style and Pinning**

**RO/E**



Pin Connections	Function
Pin #	4 Pins
1	-Vin
2	+Vin
3	-Vout
4	+Vout

Unit: mm  
Tolerance: ± 0.25 mm