

## Features

### Unregulated Converter

- 1:1 Input Range
- 0.25W SMD Package
- Efficiency up to 77%
- 1kVDC and 2kVDC Isolation Option
- Operating Temperature from -40°C to +100°C
- EN/UL60950-1 Certified

### Description

The R0.25S/E series DC/DC converter has been designed to offer exceptionally high efficiency, low quiescent current and an extended operating temperature range. Uses include battery powered supplies, high efficiency designs or high temperature applications.

### Selection Guide

Part Number SMD	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency typ. (%)	Max Capacitive Load <sup>(1)**</sup>
R0.25S**-3.305/E*	3.3	5	50	75	1000µF
R0.25S**-0505/E*	5	5	50	77	1000µF
R0.25S**-1205/E*	12	5	50	74	1000µF

Other input and output voltage combinations available on request.

\*add Suffix „H“ for 2kVDC Isolation, e.g. R0.25S-3.305/HE

\*add Suffix „-R“ for tape & reel packaging, e.g. R0.25S-3.305/E -R

\*add Suffix „P“ for Continuous Short Circuit Protection, e.g. R0.25S/PE

\*\*without marking denotes 5 pins out of 8 fitted (includes „H“ option)

with marking 8 denotes 8 pins out of 8 fitted („H“ option not available), e.g R0.25S8-3.305/E

## ECONOLINE

### DC/DC-Converter

with 3 year Warranty



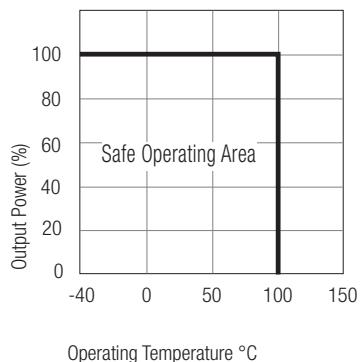
## 0.25 Watt SMD Isolated Single Output



**EN-60950-1 Certified**  
**UL-60950-1 Certified**

## RO.25S/E

## Derating-Graph (Ambient Temperature)



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

Input Voltage Range	$\pm 10\%$ max.	
Voltage Set Accuracy	100% Load/nominal Vin	-2% typ. / $\pm 5\%$ max.
Line Regulation	Low Line to High Line @ max. Load	1,2% typ.
Load Regulation	(10% to 100% Load)	4% typ. / 10% max.
Ripple & Noise @ 20MHz BW		50mVp-p typ. / 100mVp-p max.
Efficiency	100% Load	70% min.
Operating Temperature		-40°C to + 100°C
Storage Temperature		-55°C to +125°C
Isolation Test Voltage	(tested for 1 second)	1000VDC
	(rated for 1 minute***)	500VAC / 60Hz
Isolation Test Voltage	H-Suffix (tested for 1 second)	2000VDC
	H-Suffix (rated for 1 minute***)	1000VAC / 60Hz
Isolation Capacitance		75pF max.
Isolation Resistance	$V_{iso} = 500\text{V}$	10 GΩ min.
Humidity		95% max.
Operating Frequency	Vin (nom.)	20kHz min. / 70 kHz max.
Short-Circuit Protection		1 Second
MTBF	Using MIL-HDBK 217F (+100°C)	$1352 \times 10^3$ hours
	Using MIL-HDBK 217F (+25°C)	$4494 \times 10^3$ hours
Detailed Information see Application Notes chapter „MTBF“		
Weight		1.0g
Certification		
UL General Safety	Report: E224736	UL60950-1
EN General Safety		EN60950-1

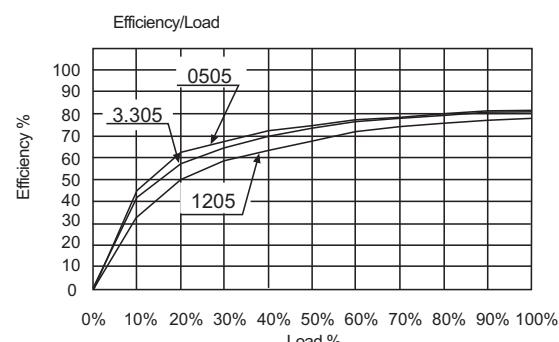
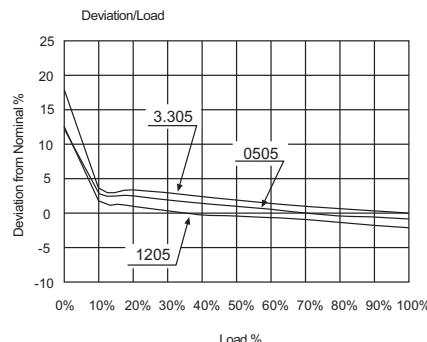
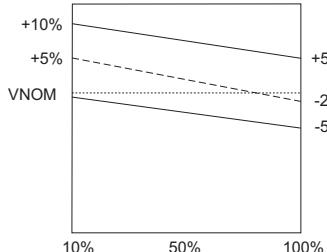
\*\*\*Any data referred to in this datasheet are of indicative nature and based on our practical experience only. For further details, please refer to our Application Notes.

### Refer to Application Notes

Typical Characteristics

**RO.25S-xx05/E**

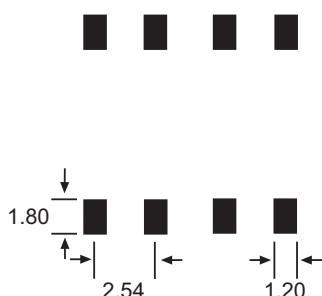
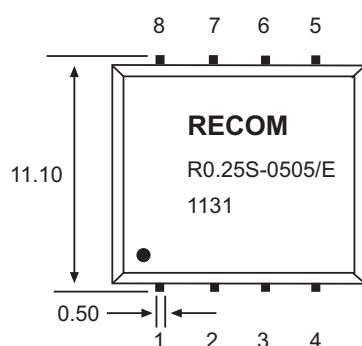
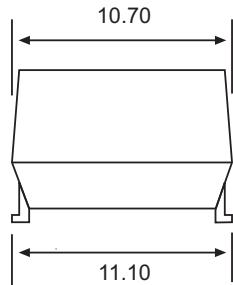
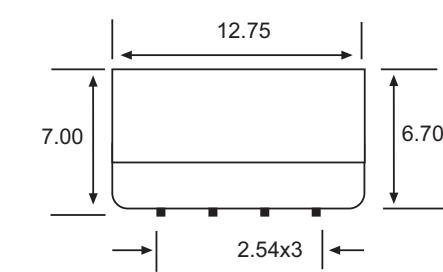
Tolerance Envelope



Notes

Note1: Maximum capacitive load is defined as the capacitive load that will allow start up in under 1second without damage to the converter.

Package Style and Pinning (mm)



Pin Connections

Pin #	Function for 5 Pins	Function for 8 Pins
1	-Vin	- Vin
2	+Vin	+Vin
4	-Vout	-Vout
5	+Vout	+Vout
3, 6, 7	NA	NC
8	NC	NC

NC= No Connection

NA= No Available Electrical Connection

UNIT: mm

TOL.:  $\pm 0.25$  mm

**Footprint**

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.

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