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# Features

## Unregulated Converter

- 1:1 Input Range
- 0.25W SIP7 Package
- Efficiency up to 82%
- 1kVDC and 2kVDC Isolation Option
- Operating Temperature from -40°C to +100°C

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

RECOM

# 0.25 Watt SIP7 Isolated Single Output


RoHS 2011/65/EU 6/6

# RBL/E

## Description

The RBL/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[1]** |
|---|---|---|---|---|---|
| RBL-3.305S/E* | 3.3 | 5 | 50 | 80 | 1000µF |
| RBL-0505S/E* | 5 | 5 | 50 | 82 | 1000µF |
| RBL-1205S/E* | 12 | 5 | 50 | 78 | 1000µF |

Other input and output voltage combinations available on request

*add Suffix „H“ for 2 kVDC Isolation, e.g. RBL-3.305/EH

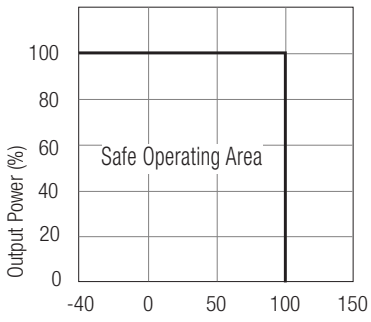
## Specifications (measured at $T_A$ = 25°C, nominal input voltage, full load and after warm-up)

| | | |
|---|---|---|
| Input Voltage Range | | ±10% max. |
| Voltage set accuracy | 100% Load/nominal Vin | -2% typ. / ±5% max. |
| Line Regulation | | 1.2% typ. / 1% of Vin typ. |
| Load Regulation | (10% to 100% Load) | 4% typ. / 10% max. |
| Ripple & Noise @ 20MHz BW | | 35mVp-p typ. / 50mVp-p max. |
| Efficiency | 100% Load | 70% min. |
| Operating Temperature | | -40°C to + 100°C |
| Storage Temperature | | -55°C to +125°C |
| Isolation Voltage | (tested for 1 second) | 1000VDC |
| | (rated for a minute**) | 500VAC / 60Hz |
| Isolation Voltage | H-Suffix (tested for 1 second) | 2000VDC |
| | H-Suffix (rated for a minute**) | 1000VAC / 60Hz |
| Isolation Capacitance | | 75pF max. |
| Isolation Resistance | | 10 GΩ min. |
| Humidity | | 95% RH |
| Operating Frequency | Vin (nom.) | 20kHz min. / 70 kHz max. |
| Quiescent Current (0% Load) | 3.3VDC | 11.2mA typ. |
| | 5VDC | 6mA typ. |
| | 12VDC | 4.2mA typ. |
| Short-Circuit Protection | | 1 Second |
| Weight | | 2.2 g |
| Packing Quantity | | 25pcs per tube |
| MTBF | Using MIL-HDBK 217F (+100°C) | 1352 x $10^3$ hours |
| | Using MIL-HDBK 217F (+25°C) | 4494 x $10^3$ hours |

*Detailed Information see Application Notes chapter „MTBF“*

**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.

## Derating-Graph (Ambient Temperature)

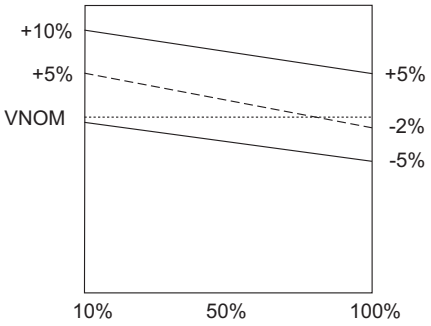


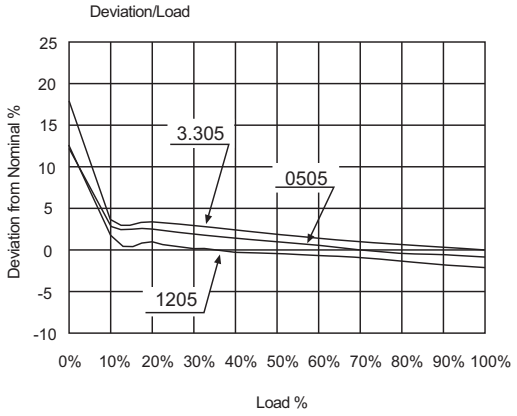

**Refer to Application Notes**

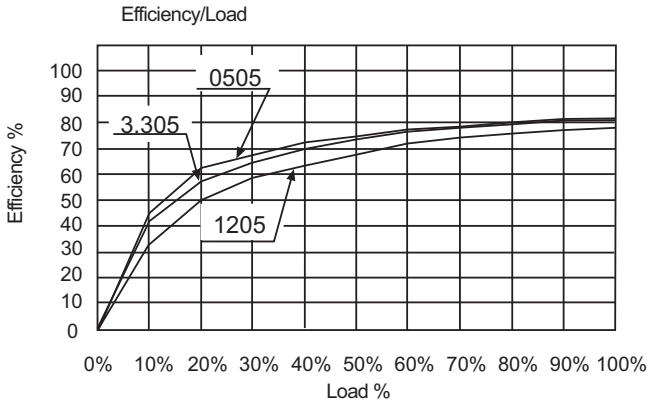
**Notes**

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

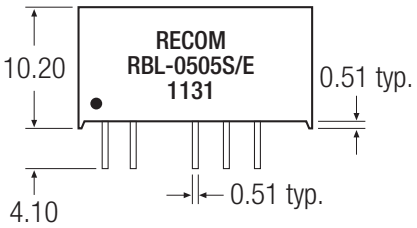
## Typical Characteristics

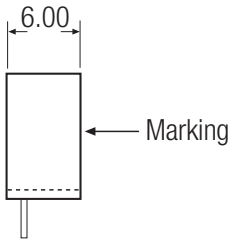


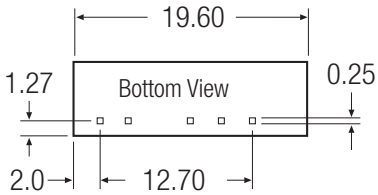



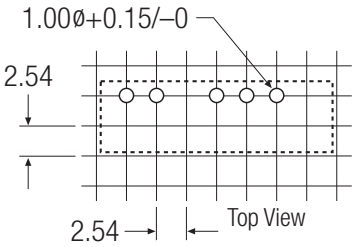

## Package Style and Pinning (mm)




*Recommended Footprint*




**Pin Connections**

| Pin # | Function |
|---|---|
| 1 | +Vin |
| 2 | -Vin |
| 4 | NC |
| 5 | -Vout |
| 6 | +Vout |

NC= No Connection

UNIT: mm
TOL.: ± 0.25 mm