

Features

Unregulated Converters

- High Efficiency up to 84% Full Load
- Low Deviation (10% ~ 100% Load)
- 1kVDC and 2kVDC Isolation Option
- Safety Certified
- -40°C to +100°C Operating Temperature Range
- 1W SIP7 Package

Description

The RB/E series is an unregulated DC/DC converter in standard SIP7 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%). 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.) ⁽¹⁾
RB-3.305S/E*	1	3.3	5	200	83%	2200µF
RB-0505S/E*	1	5	5	200	84%	2200µF
RB-1205S/E*	1	12	5	200	84%	2200µF
RB-2405S/E*	1	24	5	200	81%	2200µF

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

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

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

Input Voltage Range			±10%
Output Voltage Accuracy			±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 (Vin=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)		1000 VDC
	(rated for 1 minute**)		500VAC / 60Hz
Isolation Voltage	H-Suffix	(tested for 1 second)	2000VDC
	H-Suffix	(rated for 1 minute**)	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			2.2g
MTBF (+25°C)	} Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F	3459 x 10 ³ hours
MTBF (+100°C)		using MIL-HDBK 217F	756 x 10 ³ 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

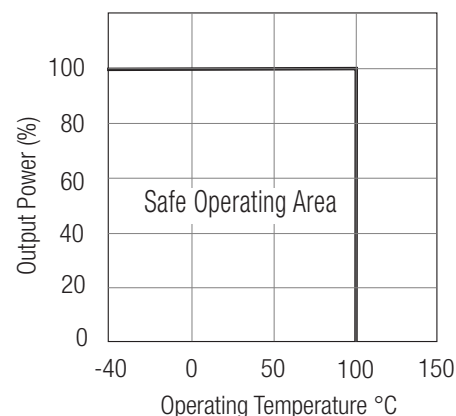
1 Watt SIP7 Single Output



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

RB/E

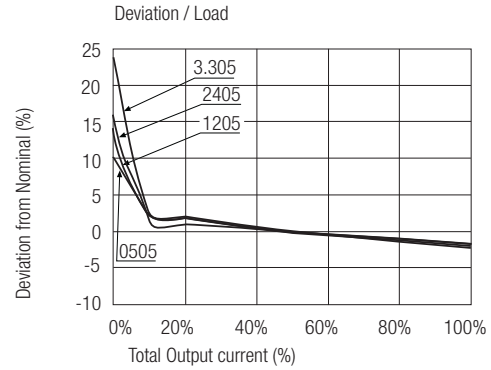
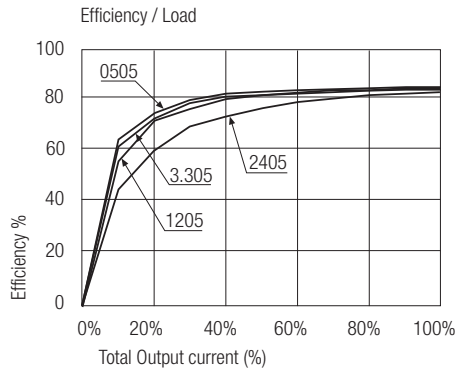
Derating-Graph (Ambient Temperature)



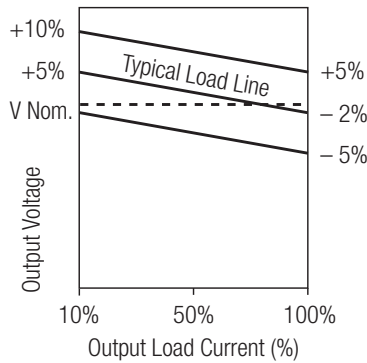
Refer to Application Notes

Typical Characteristics

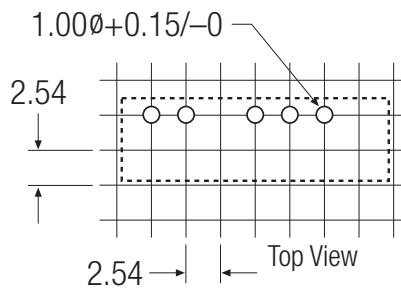
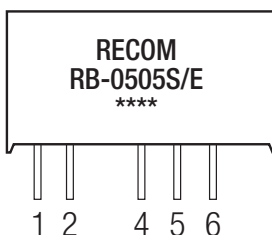
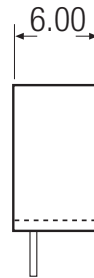
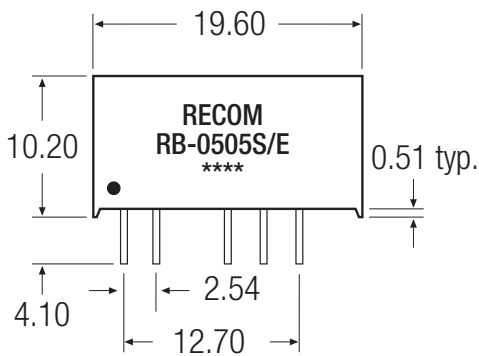
RB-xx05S/E



Tolerance Envelope



Package Style and Pinning



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

NC = No Internal Connection

Unit: mm
Tolerance: ± 0.25 mm

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.