

Features

Unregulated Converters

- Efficiency 84% Full Load/70% with 20% 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 DC/DC converter has been designed to offer exceptionally high efficiency over a wide load range, 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	Isolation Voltage (kVDC)	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (typ.)	Capacitive Load (max.)
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	82%	2200µF
RB-2405S/E*	1	24	5	200	82%	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	$\pm 10\%$		
Output Voltage Accuracy	$\pm 5\%$ max.		
Line Voltage Regulation	low line to high line at full load		1.2% typ.
Load Voltage Regulation	$V_{out}=5\text{V}$ (10% to 100% full load)		7% typ., 15% max.
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	RB-xx05S/E	tested for 1 second	1000 VDC
	RB-xx05S/EH	tested for 1 second	2000 VDC
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)	using MIL-HDBK 217F	3459 x 10 ³ hours	
MTBF (+100°C)	using MIL-HDBK 217F	756 x 10 ³ hours	

Note: Detailed information see Application Notes chapter "MTBF"

ECONOLINE

DC/DC-Converter

with 3 year Warranty

RECOM

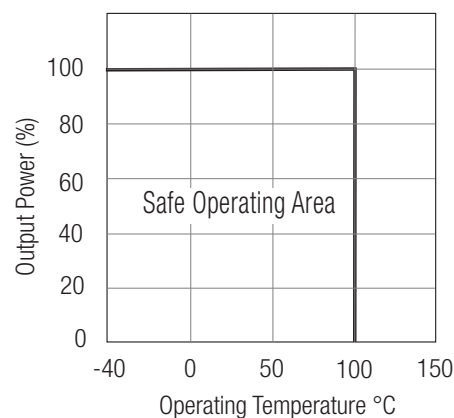
1 Watt SIP7 Single Output



EN-60950-1 Certified

RB-xx05/E

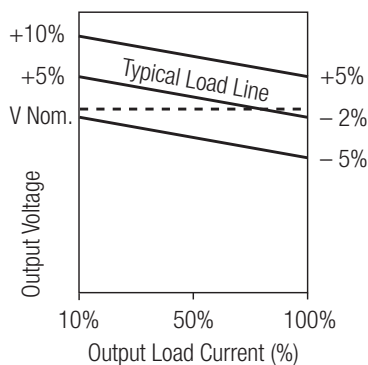
Derating-Graph (Ambient Temperature)



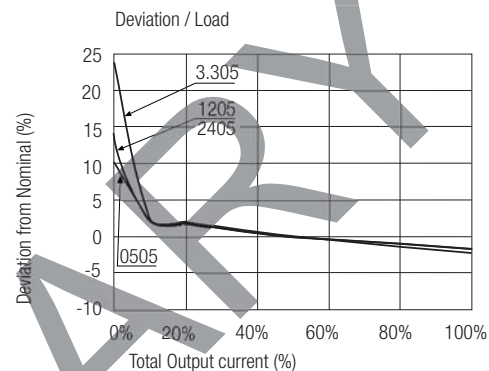
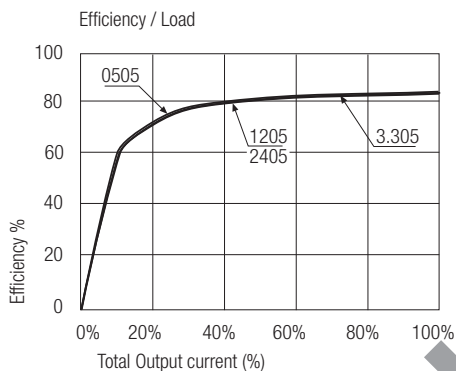
Refer to Application Notes

Typical Characteristics

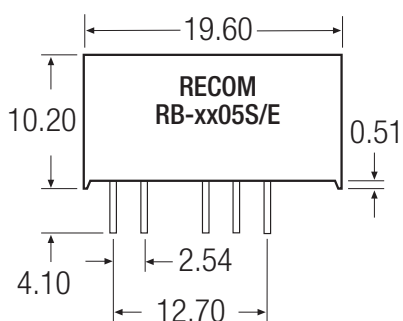
Tolerance Envelope



RB-xx05S/E



Package Style and Pinning



3rd angle projection

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

NC = No Internal Connection

Unit: mm
Tolerance: ± 0.25 mm

