

## Features

## Unregulated Converters

- Micro Size SIP 6 Package
- Industry Standard Pinout
- 3kVDC Isolation
- Optional Continuous Short Circuit Protected
- Efficiency to 85%

### Selection Guide

Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)
SIP 6 Micro Size Package	(VDC)	(VDC)	(mA)	(%)
RBM-xx1.8S	1.8, 3.3, 5, 9, 12, 15, 24	1.8	555	70
RBM-xx3.3S	1.8, 3.3, 5, 9, 12, 15, 24	3.3	303	75
RBM-xx05S	1.8, 3.3, 5, 9, 12, 15, 24	5	200	70-78
RBM-xx09S	1.8, 3.3, 5, 9, 12, 15, 24	9	111	76-79
RBM-xx12S	1.8, 3.3, 5, 9, 12, 15, 24	12	83	78-80
RBM-xx15S	1.8, 3.3, 5, 9, 12, 15, 24	15	66	80-84
RBM-xx24S	1.8, 3.3, 5, 9, 12, 15, 24	24	42	74-85
RBM-xx1.8D	1.8, 3.3, 5, 9, 12, 15, 24	±1.8	±278	70
RBM-xx3.3D	1.8, 3.3, 5, 9, 12, 15, 24	±3.3	±152	70
RBM-xx05D	1.8, 3.3, 5, 9, 12, 15, 24	±5	±100	74-78
RBM-xx09D	1.8, 3.3, 5, 9, 12, 15, 24	±9	±56	76-79
RBM-xx12D	1.8, 3.3, 5, 9, 12, 15, 24	±12	±41	80-82
RBM-xx15D	1.8, 3.3, 5, 9, 12, 15, 24	±15	±33	80-84
RBM-xx24D	1.8, 3.3, 5, 9, 12, 15, 24	±24	±21	80-84

xx = Input Voltage

\* add Suffix "P" for Continuous Short Circuit Protection, e.g. RBM-0505S/P, RBM-0505D/P

### Description

The RBM Micro Size DC/DC-Converter complements Recom's industrial range of converters. This range is widely used for pcb distributed power systems and combines small package size, high efficiency, 3kVDC isolation and low output ripple.

The extended operating temperature range covering -40°C to +85°C is a standard feature. The full rated power can be taken from a single pin of this dual output converter, provided this does not exceed 1 Watt.

### Specifications (Core Operating Area)

Input Voltage Range			±10%
Output Voltage Accuracy			±5%
Line Voltage Regulation			1.2%/1% of Vin typ.
Load Voltage Regulation (10% to 100% full load)	1.8V, 3.3V output types		20% max.
	5V output type		15% max.
	9V, 12V, 15V, 24V output types		10% max.
Output Ripple and Noise (20MHz limited)			100mVp-p max.
Operating Frequency			50kHz min. / 100kHz typ. / 105kHz max.
Efficiency at Full Load			70% min. / 80% typ.
No Load Power Consumption	Single	101mW min. / 126mW typ. / 220mW max.	
	Dual	87mW min. / 130mW typ. / 230mW max.	
Isolation Voltage	(tested for 1 second)	3000VDC min.	
Rated Working Voltage	(long term isolation)	see Application Notes	
Isolation Capacitance			20pF min. / 65pF max.
Isolation Resistance			15 GΩ min.
Short Circuit Protection			1 Second
P-Suffix			Continuous
Operating Temperature Range (free air convection)			-40°C to +85°C (see Graph)

continued on next page

## ECONOLINE

DC/DC-Converter

# RBM Series

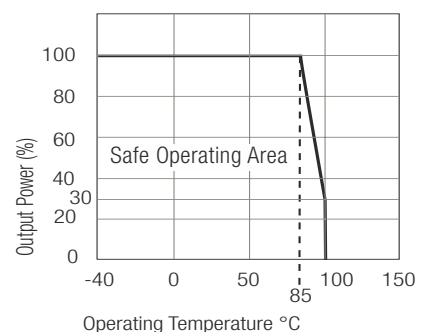
## 1 Watt SIP 6 Micro Size, Single & Dual Output



EN-60950-1 Certified  
EN-60601-1 Certified



## Derating-Graph (Ambient Temperature)

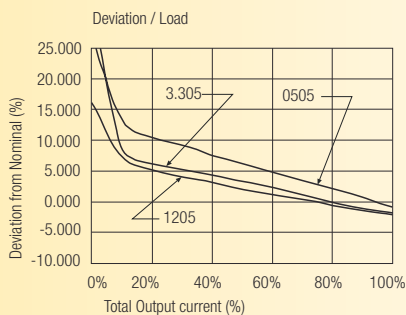
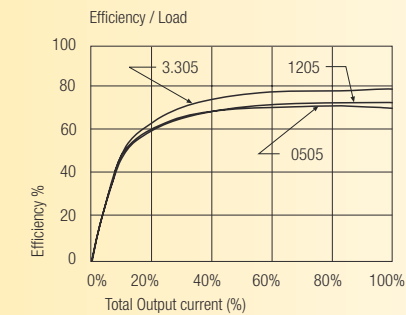


## Specifications (Core Operating Area)

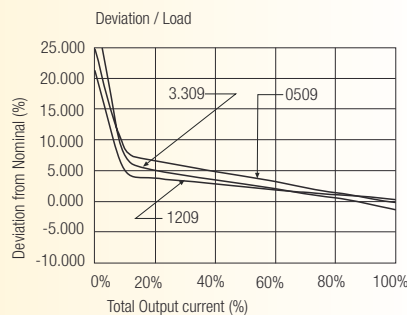
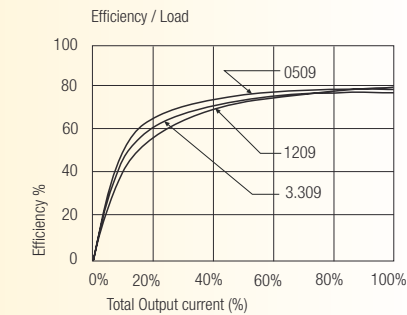
Storage Temperature Range	-55°C to +125°C		
Relative Humidity	95% RH		
Package Weight	1.3g		
MTBF (+25°C)	} Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F	1005 x 10 <sup>3</sup> hours
(+85°C)		using MIL-HDBK 217F	195 x 10 <sup>3</sup> hours

## Typical Characteristics

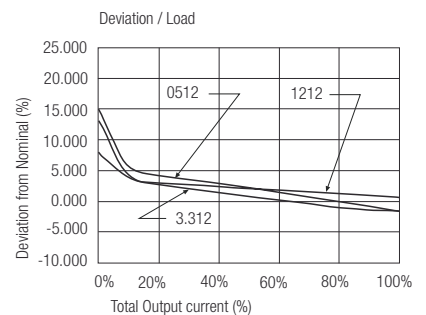
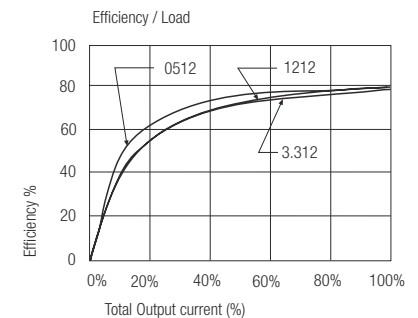
### RBM-xx05S



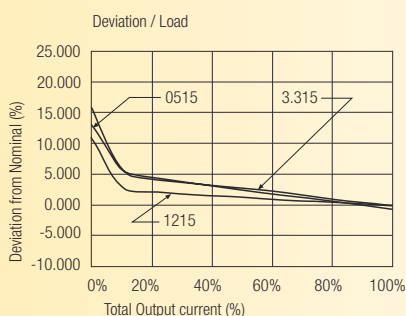
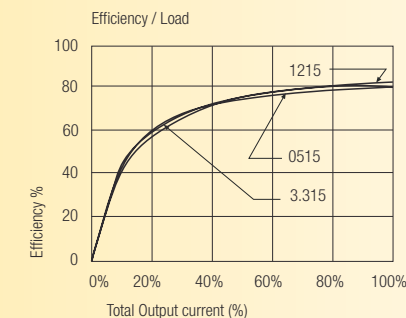
### RBM-xx09S



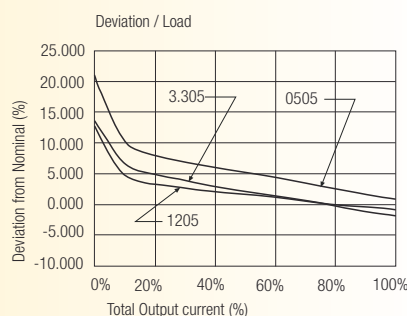
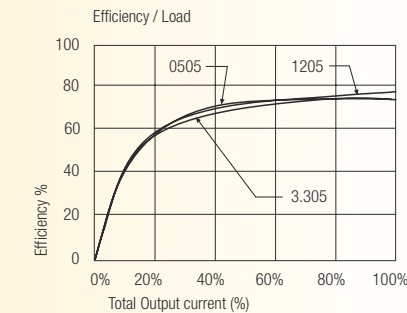
### RBM-xx12S



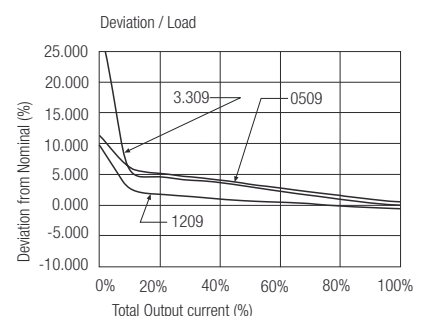
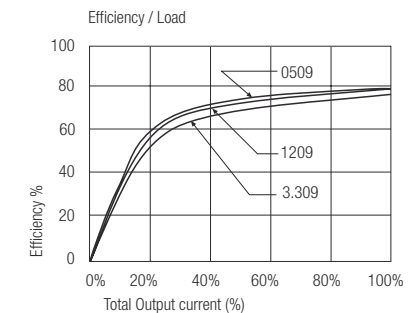
### RBM-xx15S



### RBM-xx05D

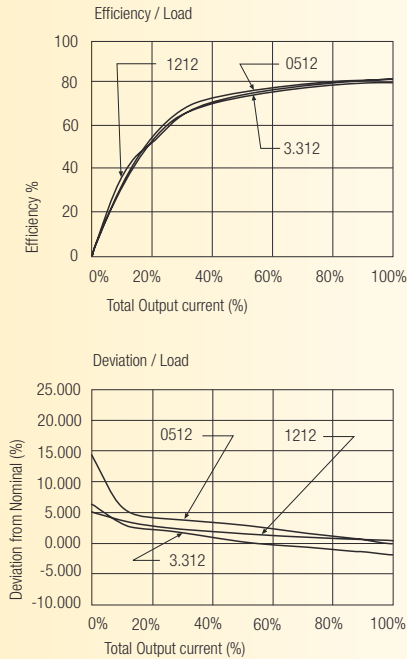


### RBM-xx09D

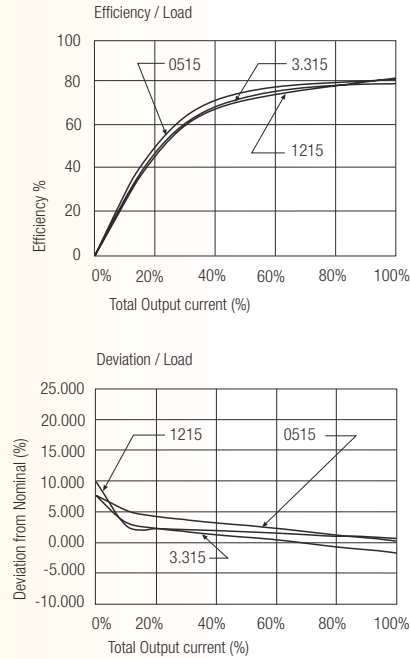


**Typical Characteristics**

**RBM-xx12D**

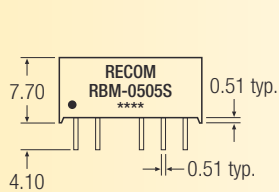


**RBM-xx15D**

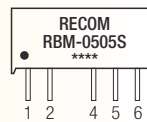


**Package Style and Pinning (mm)**

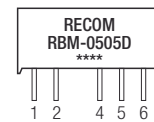
**6 PIN SIP Micro Size Package**



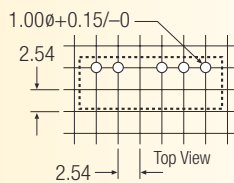
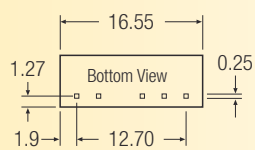
**Single Output**



**Dual Output**



**Recommended Footprint Details**



**Pin Connections**

Pin #	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
4	NC	-Vout
5	-Vout	Com
6	+Vout	+Vout

NC = No Connection  
XX.X ± 0.5 mm  
XX.XX ± 0.25 mm