

## Features

## Unregulated Converters

- New Micro Size SIP 6 Package
- Industry Standard Pinout
- 3kVDC Isolation
- UL94V-0 Package Material
- Efficiency to 85%

## ECONOLINE

DC/DC-Converter

# RBM Series

### 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

### 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)

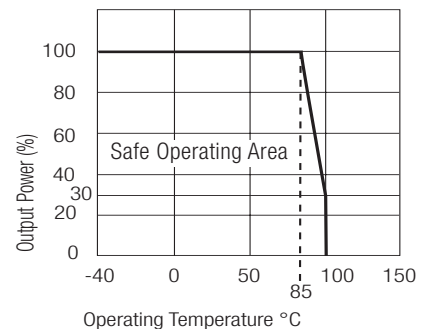
Input Voltage Range	±10%		
Output Voltage Accuracy	±5%		
Line Voltage Regulation	1.2%/1% of Vin max.		
Load Voltage Regulation (10% to 100% full load)	1.8V, 3.3V output types	20% max.	
	5V output type	15% max.	
	9V, 12V, 15V, 24V output types	10% max.	
Output Ripple and Noise (20MHz limited)	100mVp-p 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. / 171mW max.	
	Dual	87mW min. / 130mW typ. / 190mW max.	
Isolation Voltage (tested for 1 second)	3.000VDC 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		
Operating Temperature Range (free air convection)	-40°C to +85°C (see Graph)		
Storage Temperature Range	-55°C to +125°C		
Relative Humidity	MSL Level 1	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

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



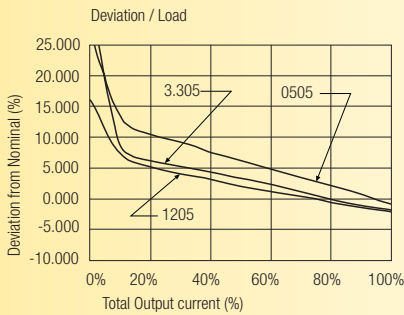
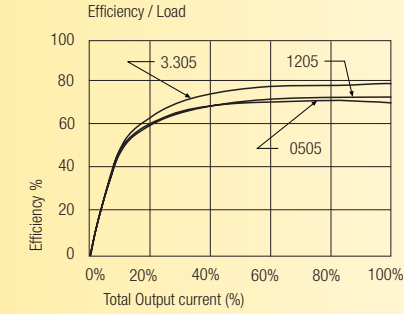
# RECOM

## Derating-Graph (Ambient Temperature)

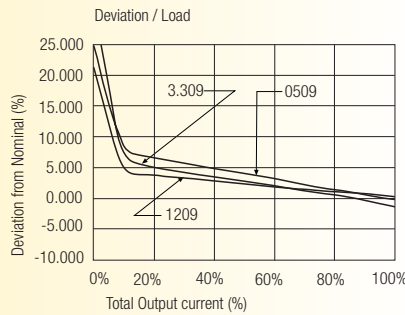
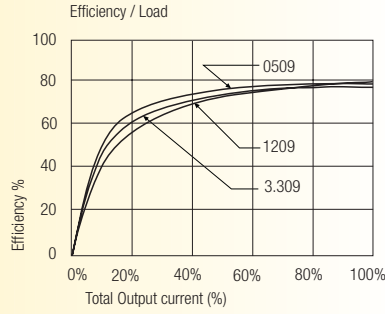


**Typical Characteristics**

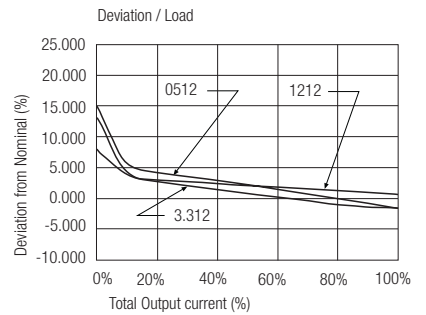
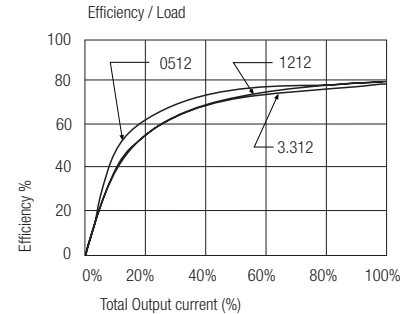
**RBM-xx05S**



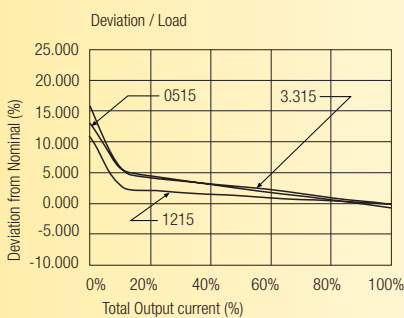
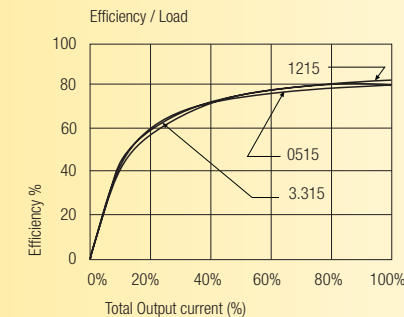
**RBM-xx09S**



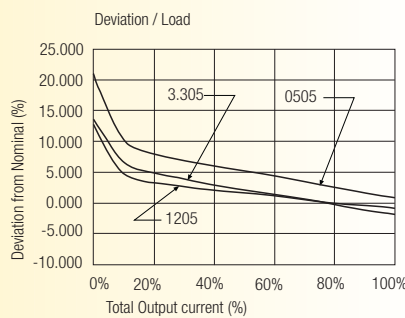
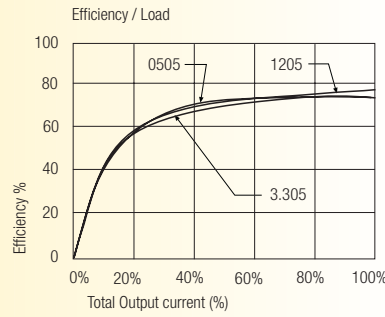
**RBM-xx12S**



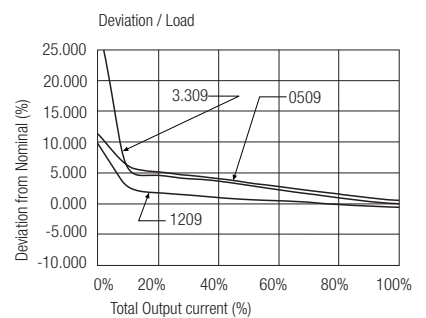
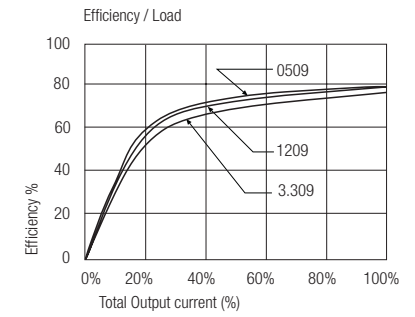
**RBM-xx15S**



**RBM-xx05D**

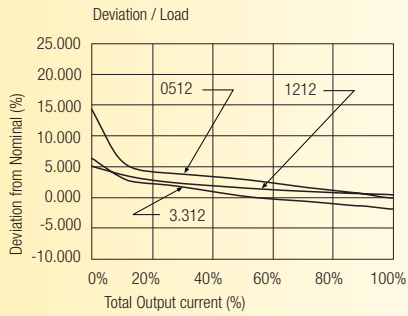
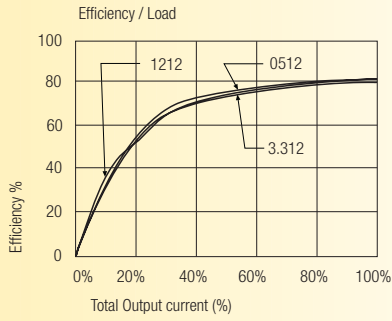


**RBM-xx09D**

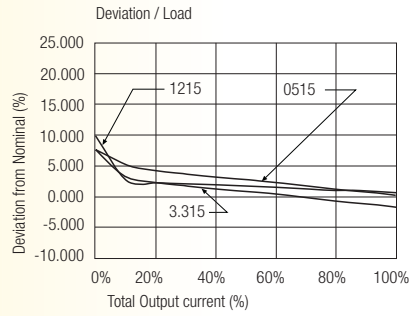
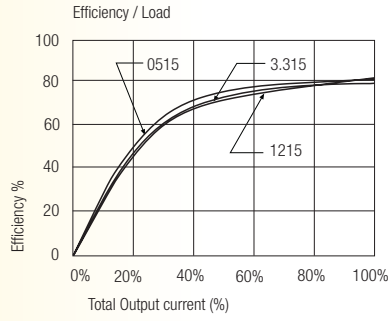


**Typical Characteristics**

**RBM-xx12D**

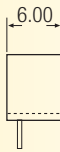
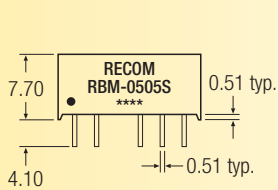


**RBM-xx15D**

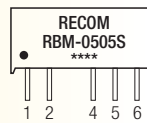


**Package Style and Pinning (mm)**

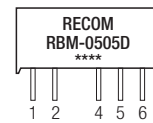
**6 PIN SIP Micro Size Package**



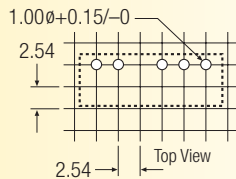
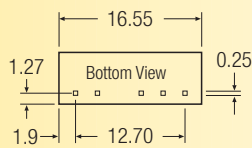
**Single Output**



**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