

# Features

- Micro size SIP 6 package
- Industry standard pinout
- Power sharing on dual output version
- 3kVDC/1s basic isolation
- Optional continuous short circuit protection
- Efficiency up to 84%

# Unregulated Converters

## RBM

**1 Watt**  
**SIP6 Micro**  
**Size, Single and**  
**Dual Output**



### Description

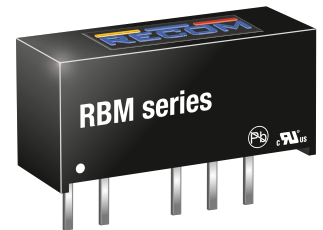
The RBM Micro Size DC/DC-Converter complements Recom's industrial range of converters. This range is widely used for PCB distributed power systems and combines small package size, high efficiency, 3kVDC isolation and low output ripple. The extended operating temperature range covering -40°C to +85°C 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.

### Selection Guide

Part Number	nom. Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ. <sup>(1)</sup> [%]	max. Capacitive Load <sup>(2)</sup> [µF]
RBM-xx05S <sup>(3)</sup>	5, 12	5	200	70-78	1000
RBM-xx12S <sup>(3)</sup>	5, 12	12	84	78-80	470
RBM-xx15S <sup>(3)</sup>	5, 12	15	66	80-84	470
RBM-xx05D <sup>(3)</sup>	5, 12	±5	±100	74-78	±470
RBM-xx12D <sup>(3)</sup>	5, 12	±12	±41	80-82	±220
RBM-xx15D <sup>(3)</sup>	5, 12	±15	±33	80-84	±220

#### Notes:

- Note1: Efficiency is tested at nominal input and full load at +25°C ambient
- Note2: Max Cap Load is tested at nominal input and full resistive load and is defined as the capacitive load that will allow start up in under 1s without damage to the converter



### Model Numbering



#### Notes:

- Note3: standard part is without continuous short circuit protection  
 add suffix „/P“ for continuous short circuit protection

#### Ordering Examples:

- RBM-1205S: 12VDC Input Voltage, 5VDC Output Voltage, Single Output
- RBM-0515D/P: 5VDC Input Voltage, ±15VDC Output Voltage, Dual Output with continuous short circuit protection

UL60950-1 certified  
 CAN/CSA-C22.2 No 60950-1 certified  
 EN60950-1 certified  
 IEC60950-1 certified  
 CB Report

**Specifications** (measured @ Ta= 25°C, nom. Vin und full load otherwise stated)

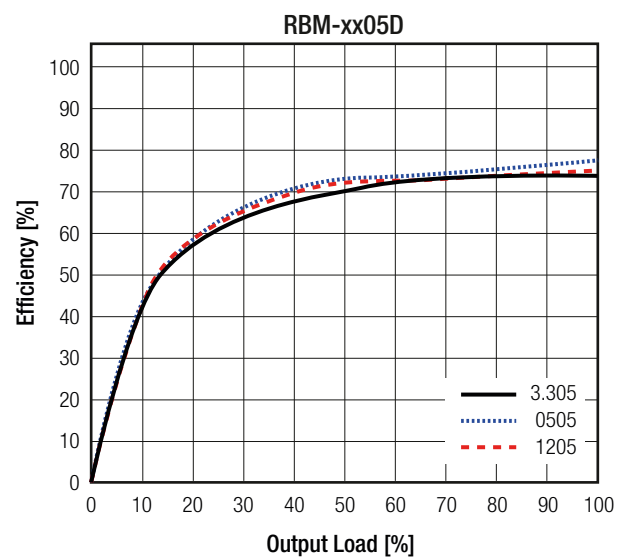
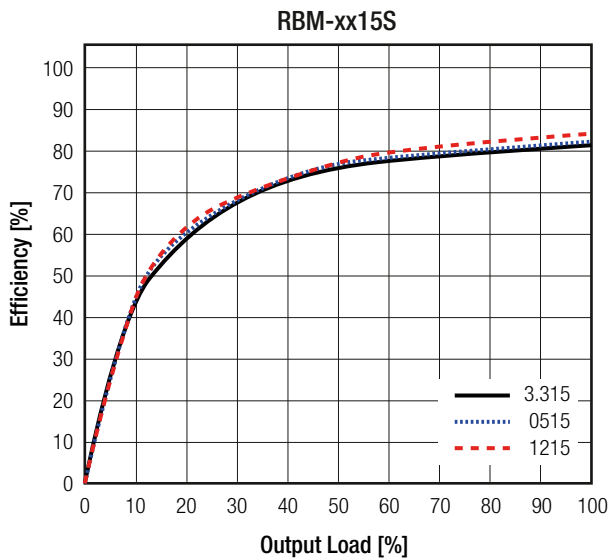
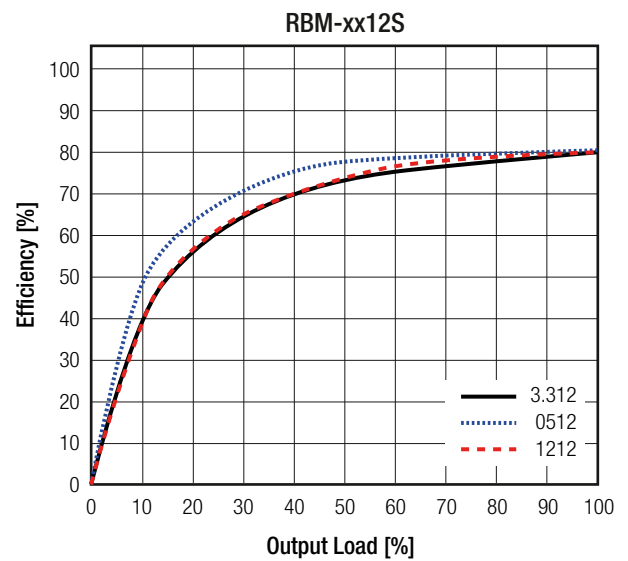
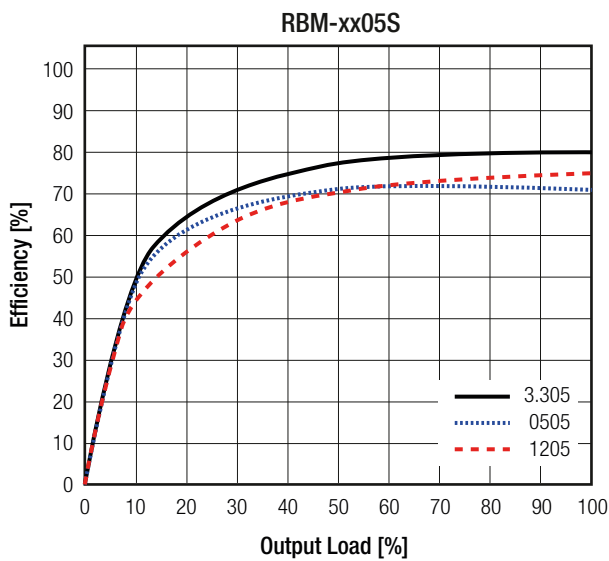
**BASIC CHARACTERISTICS**

Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range			±10%	
Minimum Load <sup>(4)</sup>		0%		
Internal Operating Frequency		50kHz	100kHz	105kHz
Output Ripple and Noise	20MHz BW			100mVp-p

**Notes:**

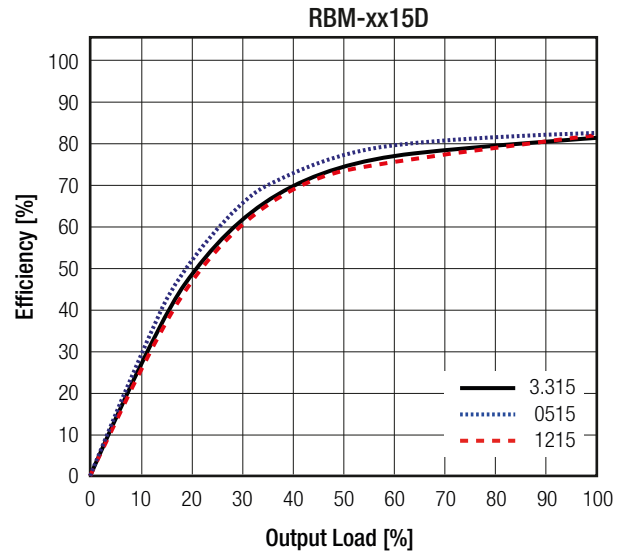
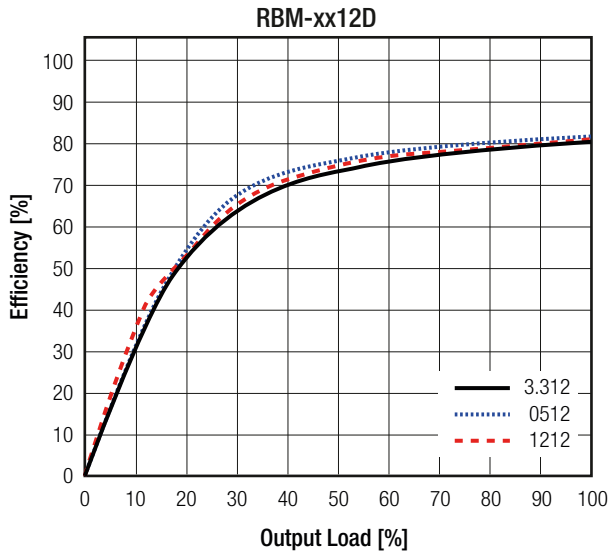
Note4: Operation below 10% load will not harm the converter, but specifications may not be met

**Efficiency vs. Load**



Specifications (measured @ Ta= 25°C, nom. Vin und full load otherwise stated)

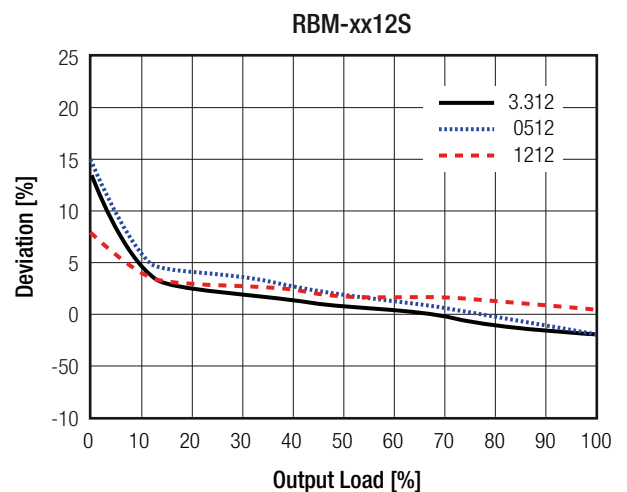
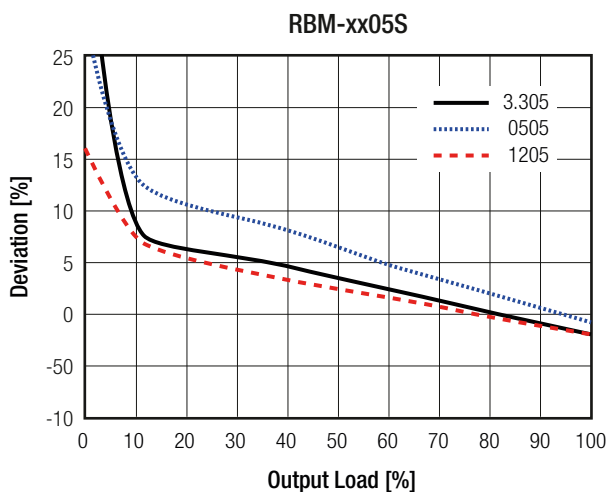
Efficiency vs. Load



REGULATIONS

Parameter	Condition		Value
Output Accuracy			±5.0% max.
Line Regulation	low line to high line		±1.2% of 1.0% Vin typ.
Load Regulation	10% to 100% load	5Vout	15.0% max.
		12, 15Vout	10.0% max.

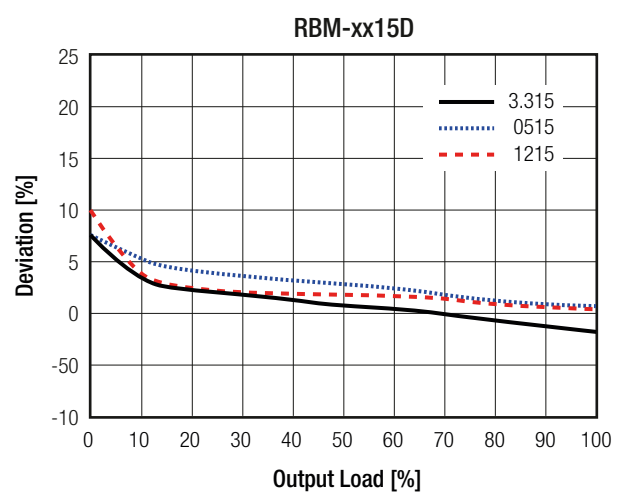
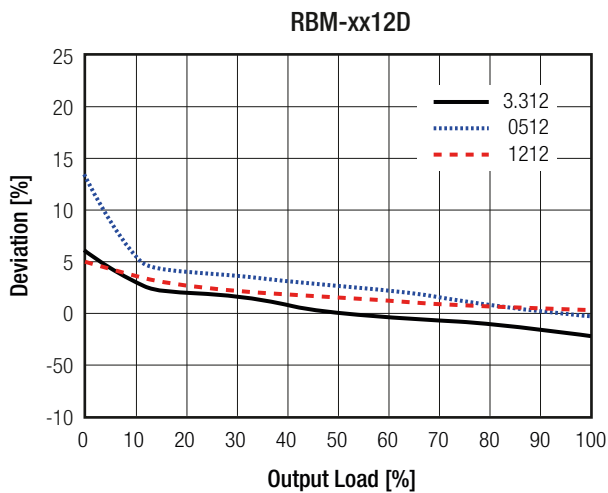
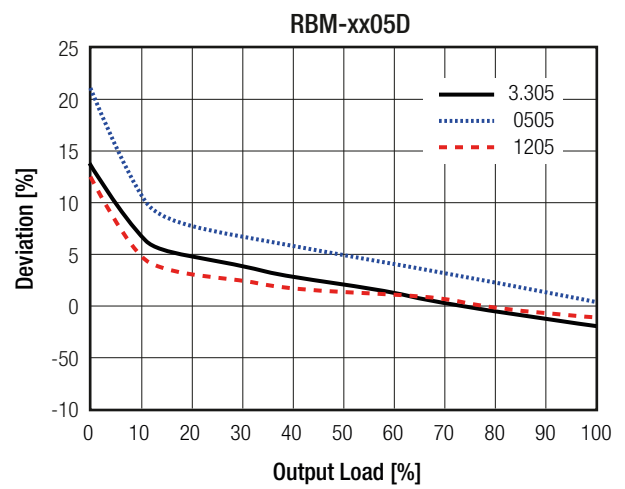
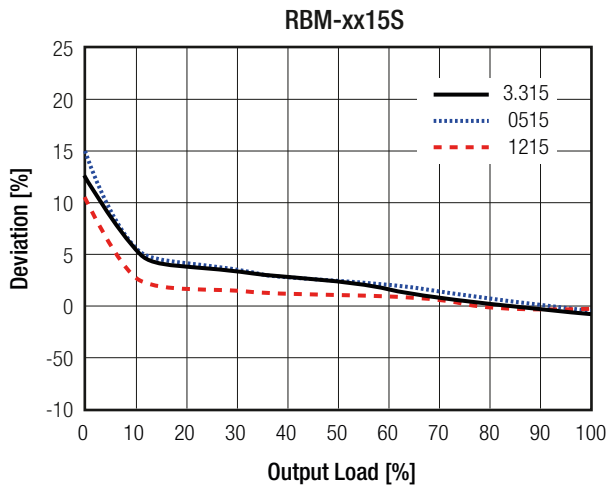
Deviation vs. Load



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**Specifications** (measured @ Ta= 25°C, nom. Vin und full load otherwise stated)

Deviation vs. Load



**PROTECTIONS**

Parameter	Type		Value
Short Circuit Protection (SCP)	without suffix with suffix "/P"		1 second continuous
Isolation Voltage <sup>(5)</sup>	I/P to O/P	tested for 1 second rated for 1 minute	3kVDC 1.5kVAC/60Hz
Isolation Resistance			15GΩ min.
Isolation Capacitance			20pF min. / 65pF max.
Insulation Grade			basic

**Notes:**

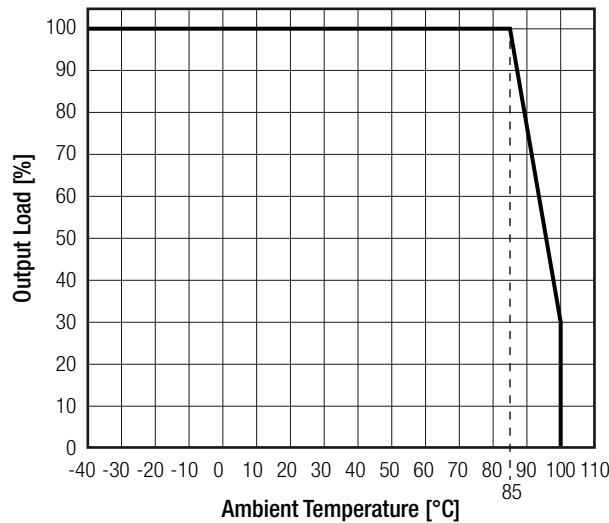
Note5: For repeat Hi-Pot testing, reduce the time and/or the test voltage

Note6: Refer to local wiring regulations if input over-current protection is also required. Recommended fuse: T1A slow blow type

**Specifications** (measured @ Ta= 25°C, nom. Vin und full load otherwise stated)

ENVIRONMENTAL			
Parameter	Condition	Value	
Operating Temperature Range	full load @ free air convection (see graph)	-40°C to + 85°C	
Operating Altitude		2000m	
Operating Humidity	non-condensing	95% RH max.	
Pollution Degree		PD2	
MTBF	according to MIL-HDBK-217F, G.B.	+25°C	19400 x 10 <sup>3</sup> hours
		+85°C	7800 x 10 <sup>3</sup> hours

**Derating Graph**  
(@ free air convection)

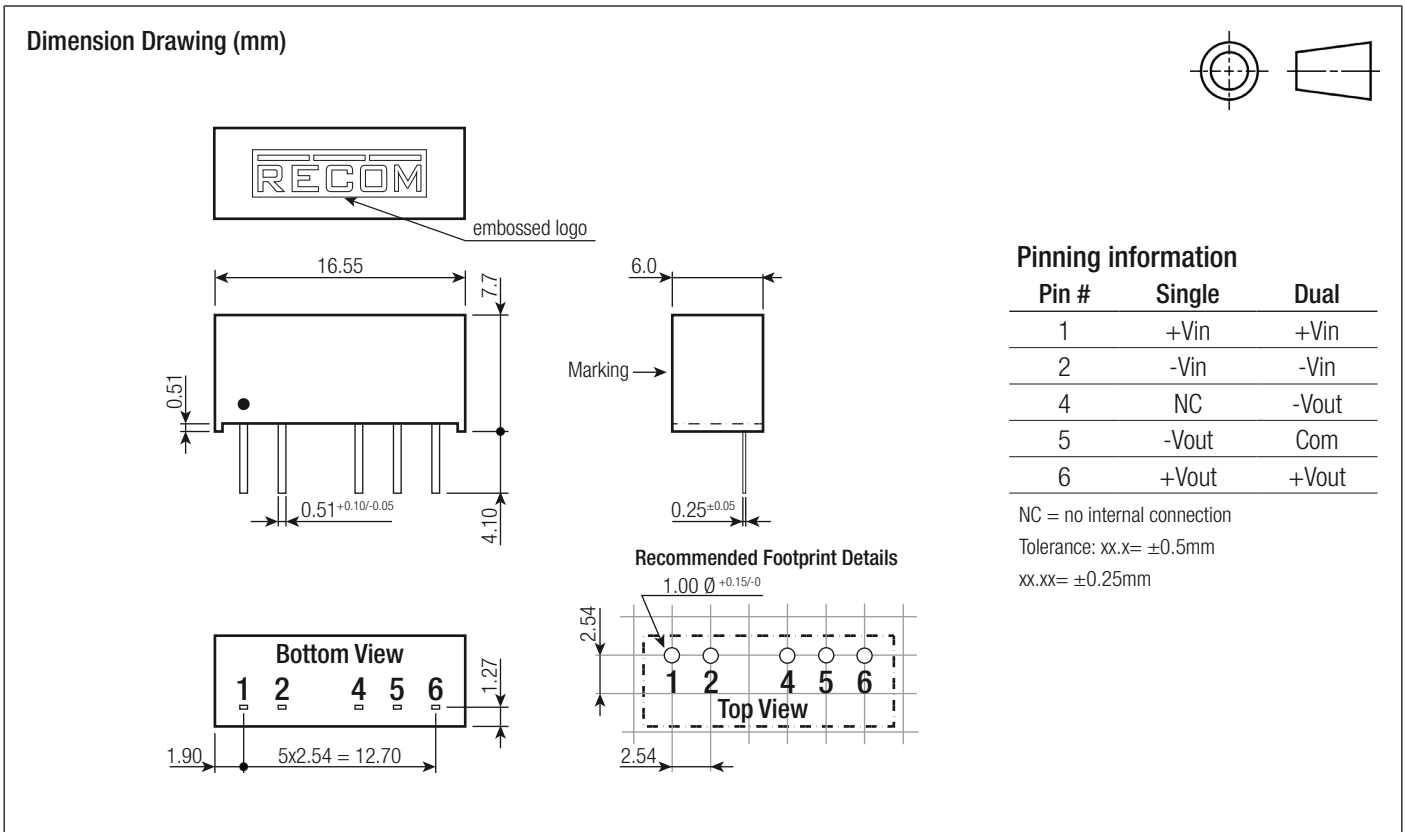


SAFETY AND CERTIFICATIONS		
Certificate Type (Safety)	Report / File Number	Standard
Information Technology Equipment, General Requirements for Safety	E358085-A4-UL	UL60950-1, 2nd Edition:2007 CAN/CSA C22.2 No. 60950-1-03, 2nd Edition:2007
Information Technology Equipment, General Requirements for Safety	1602031	IEC60950-1:2005, 2nd Edition + A2:2013 EN60950-1:2006 + A2:2013
Information Technology Equipment, General Requirements for Safety (CB)	E322406-A4-CB-1	IEC60950-1:2005, 2nd Edition
EAC	RU-AT.49.09571	TP TC 004/2011
RoHs 2+		RoHS-2011/65/EU + AM-2015/863

DIMENSION AND PHYSICAL CHARACTERISTICS		
Parameter	Type	Value
Material	case	non-conductive black plastic (UL94 V-0)
	potting	epoxy, (UL94 V-0)
	PCB	FR4, (UL94 V-0)
Dimension (LxWxH)		16.55 x 6.0 x 7.7mm
Weight		1.3g typ.

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**Specifications** (measured @ Ta= 25°C, nom. Vin und full load otherwise stated)



**PACKAGING INFORMATION**

Parameter	Type	Value
Packaging Dimension (LxWxH)	tube	520.0 x 16.0 x 9.0mm
Packaging Quantity	tube	30pcs
Storage Temperature Range		-55°C to + 125°C
Storage Humidity		95% RH max.

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