

Features

Unregulated Converter

- Single Output Rail
- Industry Standard Pinout
- 1kVDC or 2kVDC Isolation
- High Efficiency for Low Power Applications
- UL94V-0 Package Material
- Optional Continuous Short Circuit Protected
- Fully Encapsulated
- Custom versions available
- Efficiency to 76%

Description

The RM series DC/DC converter has been designed for isolating or converting DC power rails with very light loads. Efficiencies are typically 10% higher than a comparable 0.5W or 1W converters run at the same low load.

Selection Guide

Part Number SIP 4	(2kV)	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)	Max. Capacitive Load ⁽¹⁾
RM-xx3.3S	(H)	3.3, 5, 12, 15, 24	3.3	76	65-70	1000µF
RM-xx05S	(H)	3.3, 5, 12, 15, 24	5	50	66-72	470µF
RM-xx09S	(H)	3.3, 5, 12, 15, 24	9	28	70-72	470µF
RM-xx12S	(H)	3.3, 5, 12, 15, 24	12	21	70-72	150µF
RM-xx15S	(H)	3.3, 5, 12, 15, 24	15	17	70-76	150µF

xx = Input Voltage (other input and output voltage combinations and output powers available on request)

* add Suffix "P" for Continuous Short Circuit Protection, e.g. RM-0505S/P, RM-0505S/HP

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	$\pm 5\%$	
Line Voltage Regulation	1.2%/1% of V_{in} typ.	
Load Voltage Regulation	3.3V output types	20% max.
(10% to 100% full load)	5V output type	15% max.
	12V, 15V, 24V output types	10% max.
Output Ripple and Noise (20MHz limited)	50mVp-p max.	
Operating Frequency	50kHz min. / 90kHz typ. / 105kHz max.	
Efficiency at Full Load	65% min. / 75% typ.	
Minimum Load = 0%	Specifications valid for 10% minimum load only.	
Isolation Voltage	(tested for 1 second)	1000VDC
	(rated for 1 minute**)	500VAC / 60Hz
Isolation Voltage	H-Suffix (tested for 1 second)	2000VDC
	H-Suffix (rated for 1 minute**)	1400VAC / 60Hz
Isolation Capacitance	25pF min. / 82pF max.	
Isolation Resistance	10 GΩ min.	
Short Circuit Protection	1 Second	
P-Suffix	Continuous	
Operating Temperature Range (free air convection)	-40°C to $+85^\circ\text{C}$ (see Graph)	
Storage Temperature Range	-55°C to $+125^\circ\text{C}$	
Relative Humidity	95% RH	
Package Weight	RM types	1.4g
	RL types	1.8g
Packing Quantity	42 pcs per Tube	
MTBF ($+25^\circ\text{C}$)	} Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F 1327 x 10^3 hours
($+85^\circ\text{C}$)		using MIL-HDBK 217F 302 x 10^3 hours

continued on the next page

**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.

ECONOLINE

DC/DC-Converter

with 3 year Warranty

RECOM

0.25 Watt SIP4 Single Output

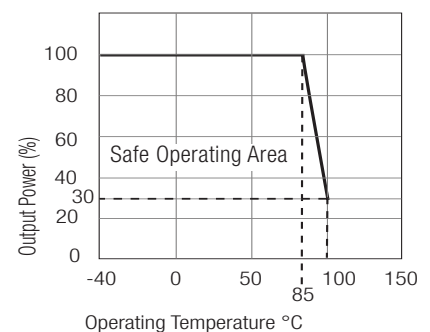


E358085

EN-60950-1 Certified
UL-60950-1 Certified
IEC/EN-60601-1 Certified*
* (/H suffix)

RM

Derating-Graph (Ambient Temperature)



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

Certifications

UL General Safety

Report: E358085

UL 60950-1, 2nd Edition

EN General Safety

Report: SPCLVD1109103

EN 60950-1:2006 + A12:2011

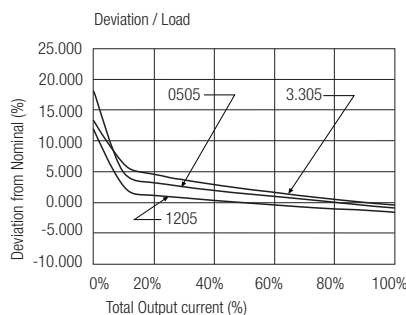
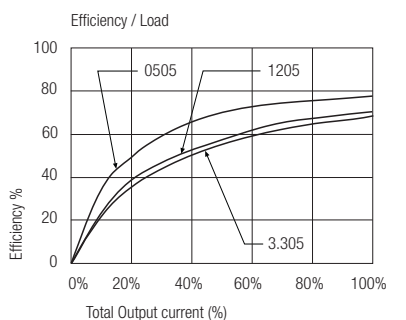
EN Medical Safety

Report: MDD1112018 + RM1112018

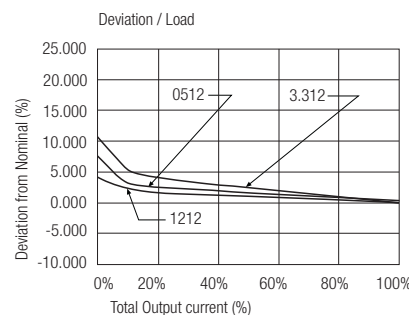
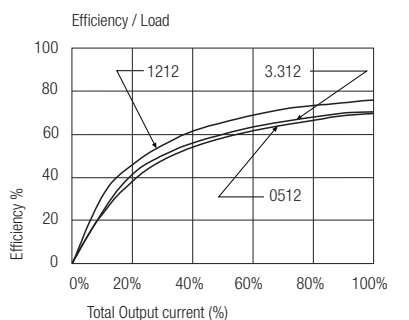
IEC/EN 60601-1 3rd Edition Medical Report + ISO14971 Risk Assessment

Typical Characteristics

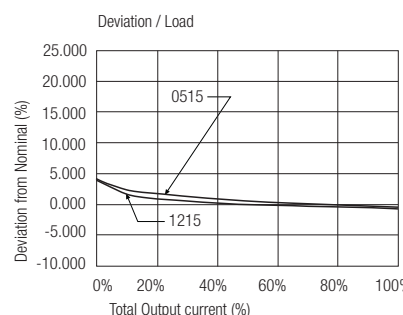
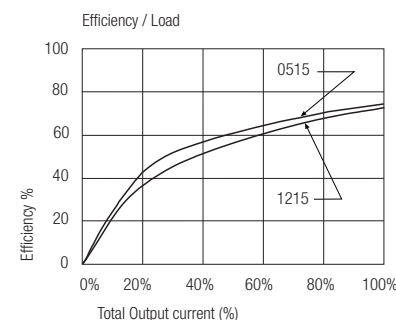
RM-xx05S



RM-xx12S



RM-xx15S

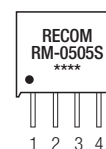
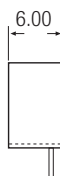
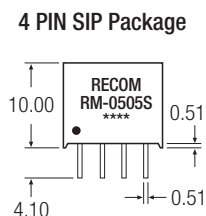


Notes

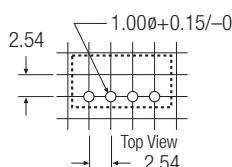
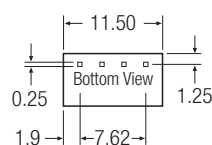
Note 1 Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter.

Package Style and Pinning (mm)

4 PIN SIP Package



Recommended Footprint Details



RM Pin Connections

Pin #	Single
1	-Vin
2	+Vin
3	-Vout
4	+Vout
XX.X	$\pm 0.5 \text{ mm}$
XX.XX	$\pm 0.25 \text{ mm}$