

Features

Unregulated Converters

- Ultra-compact - only 8.3 x 8.3 x 6.8mm
- 1kVDC Isolation
- No External Components Required
- Optional Continuous Short Circuit Protected
- Fully Encapsulated
- UL94V-0 Package Material
- Efficiency to 84%

Description

The RNM series DC/DC converters are ultra-compact isolated single output converters for applications where board space is at a premium. Despite their small size, the converters are fully featured with a full industrial operating temperature range of -40°C to +85°C without derating (+100°C with derating), 1kVDC isolation and optional short circuit protection.

Selection Guide

Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)
RNM-xx3.3S	3.3, 5, 12, 15	3.3	303	75
RNM-xx05S	3.3, 5, 12, 15	5	200	70-78
RNM-xx09S	3.3, 5, 12, 15	9	111	70-78
RNM-xx12S	3.3, 5, 12, 15	12	83	76-78
RNM-xx15S	3.3, 5, 12, 15	15	66	78-84

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

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

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 (10% to 100% full load)	3.3V output type 5V output type 9V, 12V and 15V output types	20% max. 15% max. 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.	
No Load Power Consumption		101mW min. / 126mW typ. / 220mW max.	
Maximum Capacitive Load		33 μF	
Isolation Voltage	(tested for 1 second)	1000VDC min.	
Rated Working Voltage	(long term isolation)	see Application Notes	
Isolation Capacitance		20pF min. / 75pF max.	
Isolation Resistance		10 G Ω min.	
Short Circuit Protection		1 Second	
P-Suffix		Continuous	
Operating Temperature Range (free air convection)		-40°C to +85°C (see Graph)	
Storage Temperature Range		-55°C to +125°C	
Relative Humidity		95% RH	
Package Weight			
MTBF (+25°C)	Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F	977 x 10 ³ hours
(+85°C)		using MIL-HDBK 217F	189 x 10 ³ hours

ECONOLINE

DC/DC-Converter

RECOM

1 Watt

DIP6

Single Output

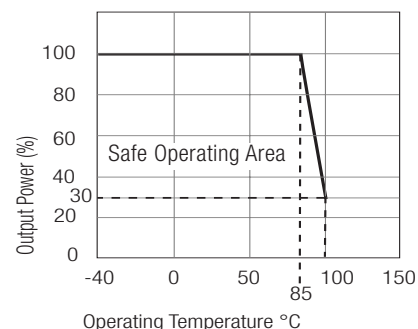


UL-60950-1 certification
EN-60950-1 certification

RNM

RNM

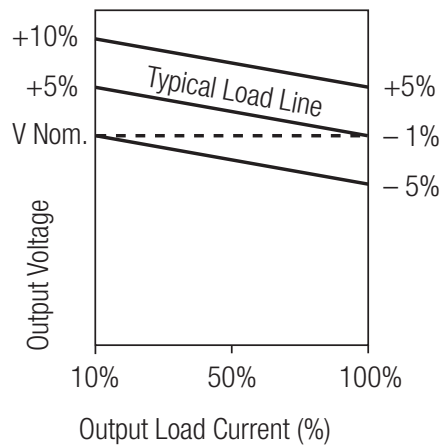
Derating-Graph (Ambient Temperature)



Refer to Application Notes

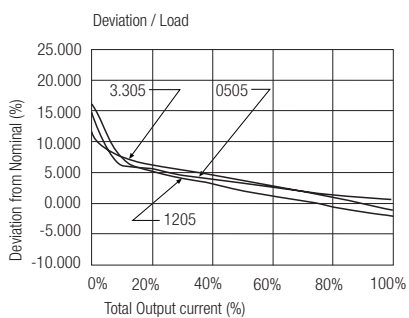
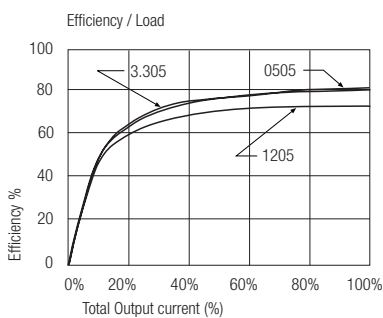
www.recom-electronic.com

Tolerance Envelope

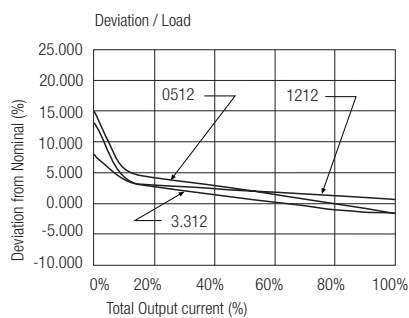
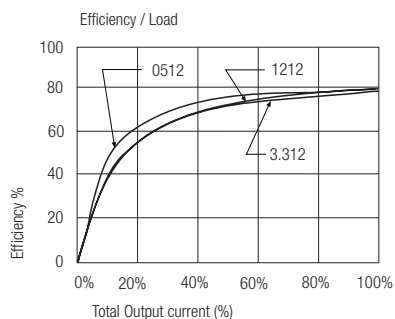


Typical Characteristics

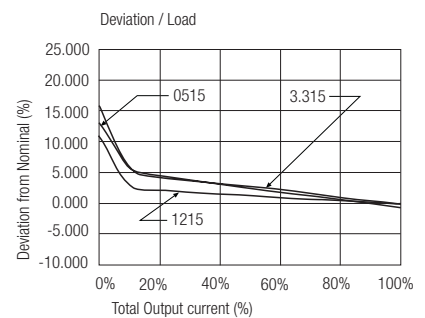
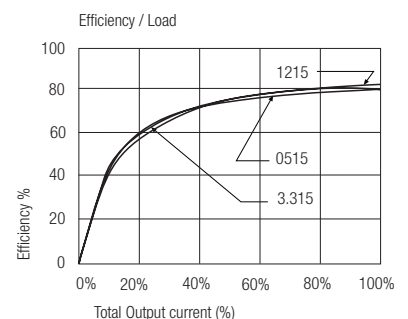
RNM-xx05S



RNM-xx12S



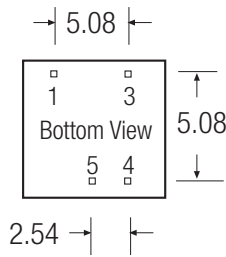
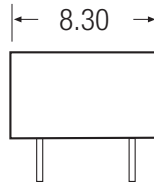
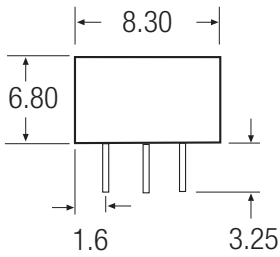
RNM-xx15S



Package Style and Pinning (mm)

4 PIN DIP Package

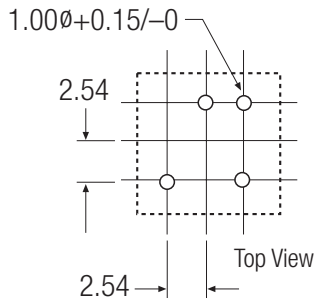
3rd angle projection 



RNM Pin Connections

Pin #	Single
1	-Vin
3	+Vin
4	+Vout
5	-Vout

XX.XX ± 0.25 mm



Recommended Footprint Details