

## Features

## Unregulated Converters

- 2W Single and Dual Outputs in DIP14
- 3kVDC and 4kVDC Isolation
- Optional Continuous Short Circuit Protected
- Custom Solutions Available
- UL94V-0 Package Material
- Efficiency up to 85 %

### Description

The RJZ and RGZ series converters are available in DIP14 packages, so can be used for applications where component height is restricted.

The wide selection of input voltage and output voltage options plus an I/O-Isolation of 3kVDC or 4kVDC as standard makes these converters suitable for many industrial and medical applications.

### Selection Guide

Part Number	DIP 14	4kV	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)	Max Capacitive Load <sup>(1)</sup>
RJZ-xx3.3S	(H)		3,3,5,9,12,15,24	3.3	606	70-75	3300µF
RJZ-xx05S	(H)		3,3,5,9,12,15,24	5	400	78-85	1200µF
RJZ-xx09S	(H)		3,3,5,9,12,15,24	9	222	78-84	1200µF
RJZ-xx12S	(H)		3,3,5,9,12,15,24	12	166	80-85	680µF
RJZ-xx15S	(H)		3,3,5,9,12,15,24	15	133	82-85	680µF
RJZ-xx24S	(H)		3,3,5,9,12,15,24	24	83	80-85	220µF
RGZ-xx3.3D	(H)		3,3,5,9,12,15,24	±3.3	±303	75	±1500µF
RGZ-xx05D	(H)		3,3,5,9,12,15,24	±5	±200	75-82	±470µF
RGZ-xx09D	(H)		3,3,5,9,12,15,24	±9	±111	75-80	±470µF
RGZ-xx12D	(H)		3,3,5,9,12,15,24	±12	±84	78-82	±220µF
RGZ-xx15D	(H)		3,3,5,9,12,15,24	±15	±66	80-84	±220µF
RGZ-xx24D	(H)		3,3,5,9,12,15,24	±24	±42	82-84	±100µF

xx = Input Voltage. Other input and output voltage combinations available on request.

\* add Suffix "P" for Continuous Short Circuit Protection, e.g. RGZ-0524D/P, RJZ-0505S/HP

## ECONOLINE

DC/DC-Converter

with 3 year Warranty

# RECOM

## 2 Watt DIP14 Single & Dual Output



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

RJZ&RGZ

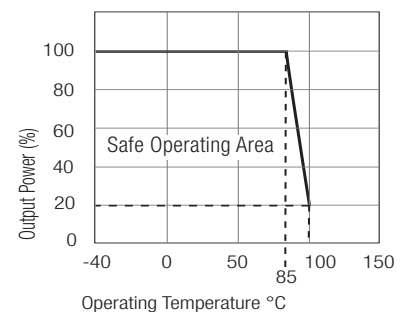
## RJZ & RGZ

### Specifications (measured at T<sub>A</sub> = 25°C, nominal input voltage, full load and after warm-up)

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)	3.3V Types	±20% max.
	5V Types	±15% max.
	All other Types	±10% max.
Output Ripple and Noise (20MHz limited)		±150mVp-p max.
Temperature Coefficient		0.02%/°C max.
Operating Frequency		20kHz min./ 50kHz typ. / 90kHz max.
Efficiency at Full Load		70% min. / 80% typ.
Minimum Load = 0%		Specifications valid for 10% minimum load only.
Isolation Voltage	(tested for 1 second)	3000VDC
	(rated for 1 minute)	1500VAC / 60Hz
Isolation Voltage	H-Suffix (tested for 1 second)	4000VDC min.
	H-Suffix (rated for 1 minute)	2000VAC / 60Hz
Isolation Capacitance		120pF max.
Isolation Resistance		15GΩ min.
Short Circuit Protection		1 Second
P-Suffix		Continuous
Operating Temperature Range (free air convection)		-40°C to +85°C (see Graph)

cont.

## Derating-Graph (Ambient Temperature)



Refer to Application Notes

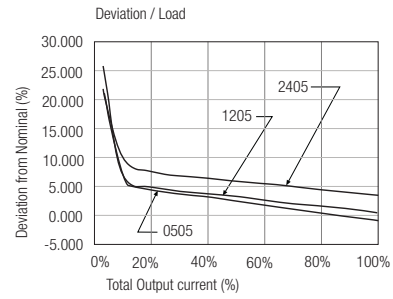
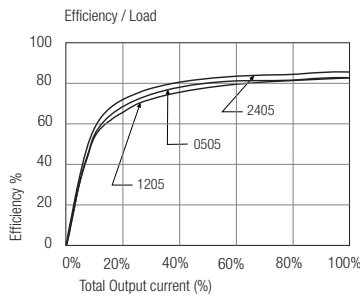
[www.recom-electronic.com](http://www.recom-electronic.com)

**Specifications - continued**

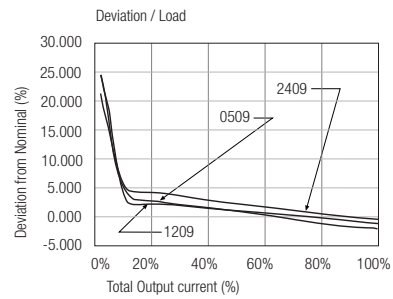
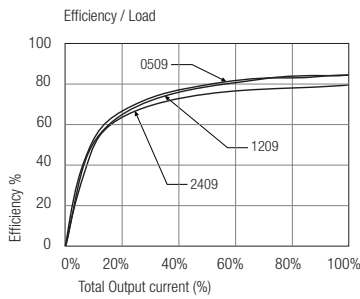
Storage Temperature Range	-55°C to +125°C		
Relative Humidity	95% RH		
Package Weight	2.8g		
Packing Quantity	24 pcs per Tube		
MTBF (+25°C)	using MIL-HDBK 217F	RJZ types	893 x 10 <sup>3</sup> hours
} DETAILED INFORMATION SEE Application Notes chapter "MTBF"		RGZ types	810 x 10 <sup>3</sup> hours
	(+85°C)	using MIL-HDBK 217F	RJZ types
		RGZ types	151 x 10 <sup>3</sup> hours

**Typical Characteristics**

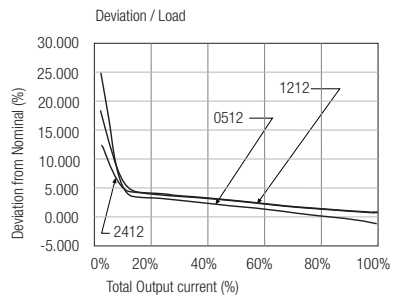
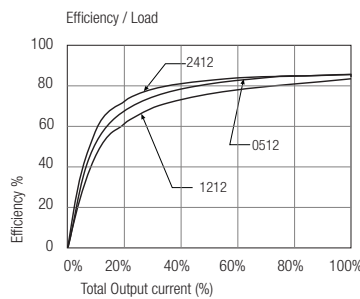
**RJZ-xx05S**



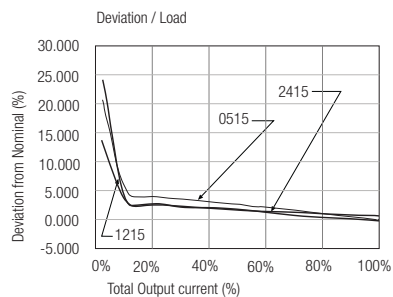
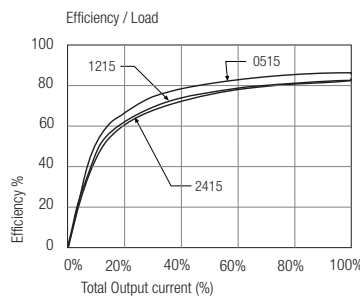
**RJZ-xx09S**



**RJZ-xx12S**



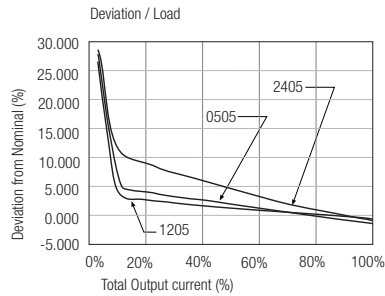
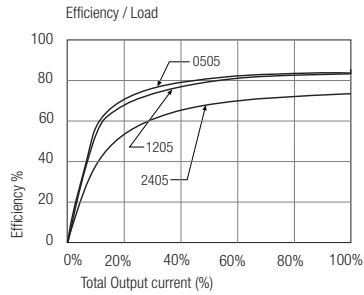
**RJZ-xx15S**



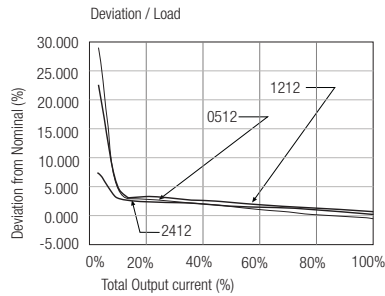
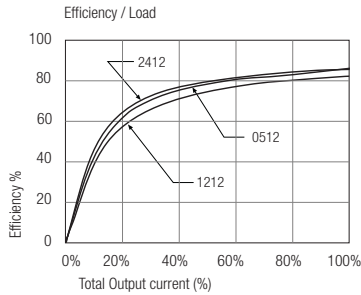
**RJZ&RGZ**

**Typical Characteristics**

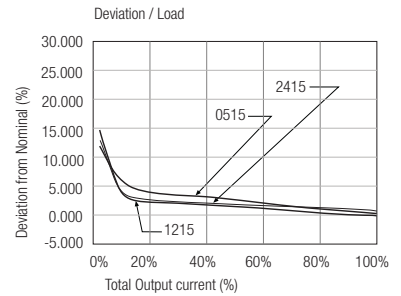
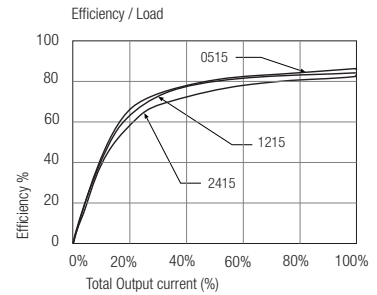
**RGZ-xx05D**



**RGZ-xx12D**



**RGZ-xx15D**



**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.

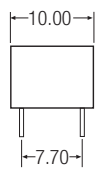
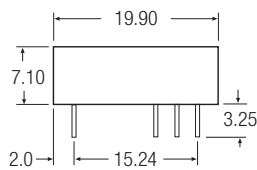
**Certifications**

EN General Safety	Report: PS-R7219C1	EN60950-1:2001 + A11:2004
EN Medical safety	Report: PS090301601	EN 60601-1

**RJZ&RGZ**

**Package Style and Pinning (mm)**

**14 PIN DIP Package**



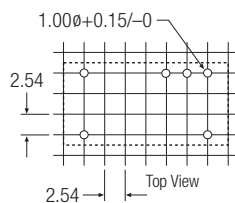
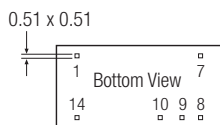
Single Output



Dual Output



**Recommended Footprint Details**



**Pin Connections**

Pin #	RJZ	RGZ
1	-Vin	-Vin
7	NC	NC
8	+Vout	+Vout
9	No Pin	Com
10	-Vout	-Vout
14	+Vin	+Vin

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