

Features

Unregulated Converters

- 2W Single and Dual Outputs in DIP 14
- 3kVDC or 4kVDC Isolation
- Optional Continuous Short Circuit Protected
- Custom Solutions Available
- UL94V-0 Package Material
- Efficiency up to 85%
- Suitable for IGBT Applications

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, medical and IGBT applications.

Selection Guide

Part Number	4kV	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)	Max Capacitive Load ⁽¹⁾
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
RGZ-xx1509D*	(H)	5, 12, 24	+15/-9	+67/-111	70-81	±330µF

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

Specifications (measured at T_A = 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 5V Types All other Types, RGZ-xx1509D	±20% max. ±15% max. ±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. RGZ-xx1509D 20kHz min. / 45kHz typ.
Efficiency at Full Load		70% min. / 80% typ.
Minimum Load = 0%		Specifications valid for 10% minimum load only.
Isolation Voltage	(tested for 1 second) (rated for 1 minute)	3000VDC 1500VAC / 60Hz
Isolation Voltage	H-Suffix (tested for 1 second) H-Suffix (rated for 1 minute)	4000VDC min. 2000VAC / 60Hz
Isolation Capacitance		120pF max.
Isolation Resistance		15GΩ min.
Short Circuit Protection		1 Second
P-Suffix		Continuous
Operating Temperature Range (free air convection, without derating)		-40°C to +90°C (see Graph)

cont.

ECONOLINE

DC/DC-Converter

with 3 year Warranty

RECOM

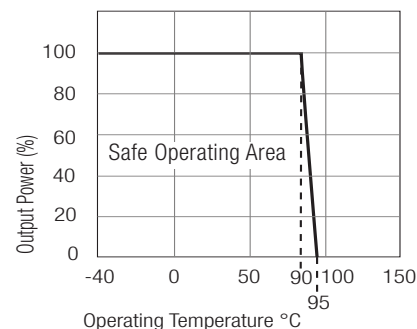
2 Watt DIP14 Single & Dual Output



EN-60950-1 Certified
IEC/EN-60601-1 Certified*
* +15/-9 Version excluded

RJZ_RGZ

Derating-Graph (Ambient Temperature)



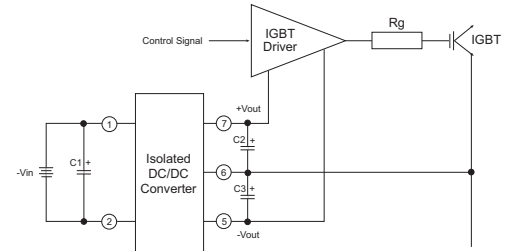
Refer to Application Notes

www.recom-electronic.com

Specifications - continued

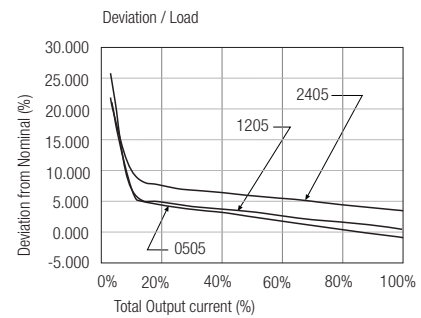
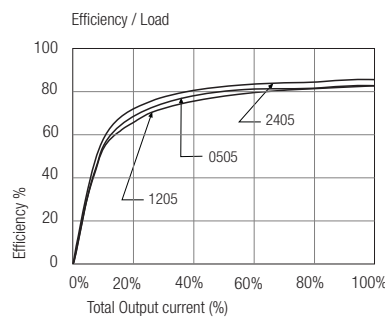
Storage Temperature Range	-55°C to +125°C		
Relative Humidity	95% RH		
Package Weight	2.8g		
Packing Quantity	24 pcs per Tube		
MTBF (+25°C)	using MIL-HDBK 217F	RJZ types	893 x 10 ³ hours
	} Detailed Information see Application Notes chapter "MTBF"		RGZ types
(+85°C)	using MIL-HDBK 217F	RJZ types	208 x 10 ³ hours
		RGZ types	151 x 10 ³ hours

IGBT Application Circuit

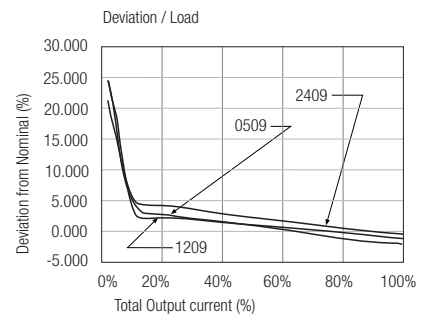
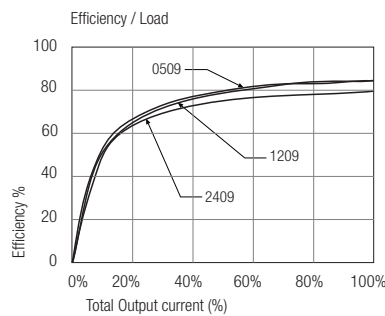


Typical Characteristics

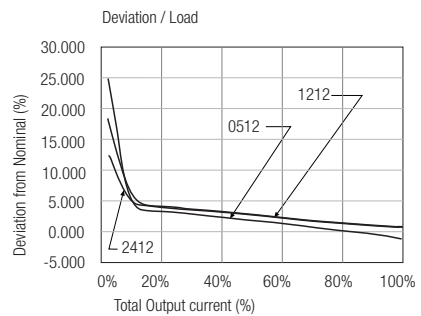
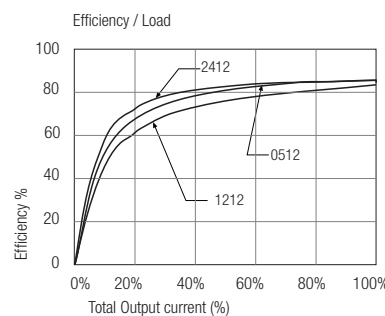
RJZ-xx05S



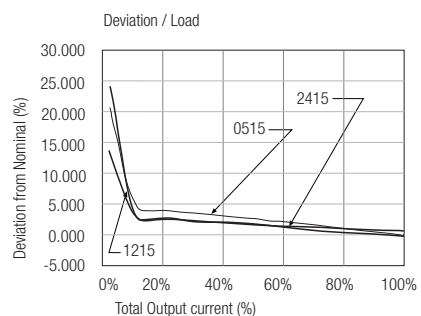
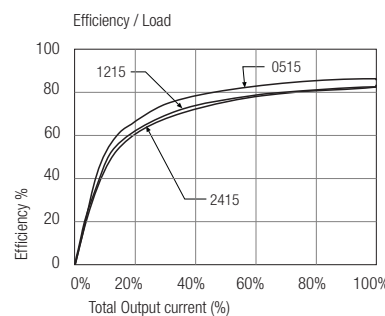
RJZ-xx09S



RJZ-xx12S



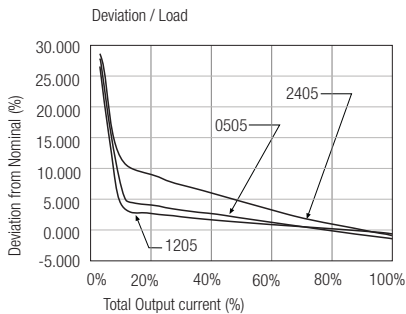
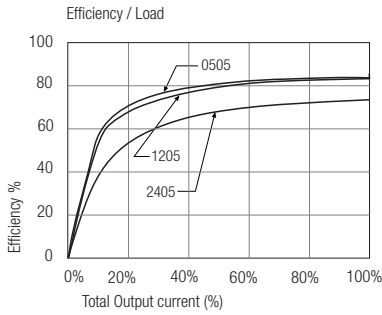
RJZ-xx15S



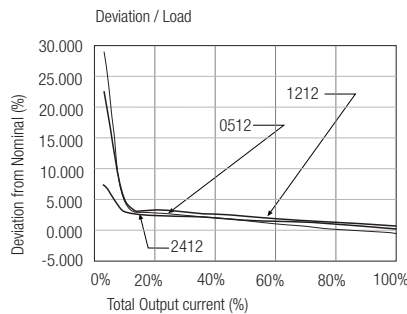
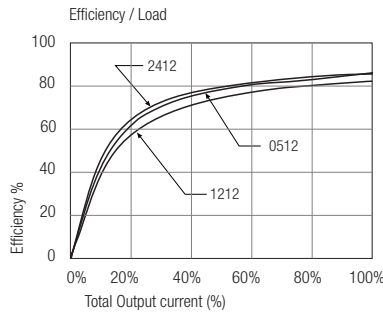
RJZ_RGZ

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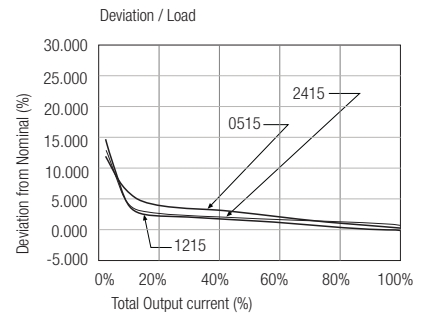
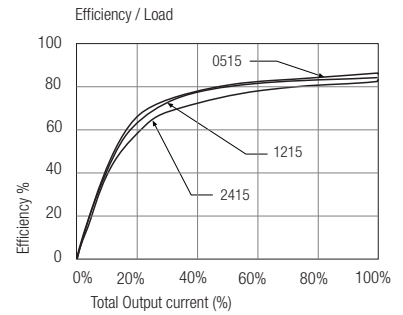
RGZ-xx05D



RGZ-xx12D



RGZ-xx15D



Notes

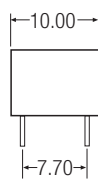
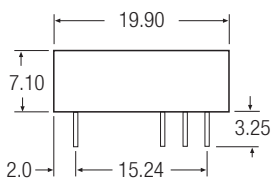
Note 1 Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter.

Certifications

EN General Safety	Report: SPCLVD1109103	EN60950-1:2006 + A12:2011
EN Medical Safety	Report: SPCMDD120598-4	IEC/EN 60601-1:2006, 3rd Edition

Package Style and Pinning (mm)

14 PIN DIP Package



Single Output



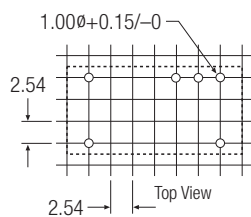
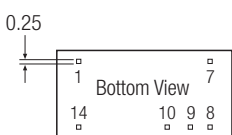
Dual Output



+15/-9 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