

Features

Unregulated Converters

- High Isolation 2W Converter
- Approved for Medical Applications
- Custom Solutions Available
- 3kVDC and 4kVDC Isolation Options
- UL94V-0 Package Material
- Optional Continuous Short Circuit Protected
- Efficiency to 84 %
- Suitable for IGBT Applications

Description

The RKZ Series of 2W DC/DC Converters are certified to EN 60950-1 and to the medical standard EN-60601-1. This makes them suitable for high end industrial applications such as IGBT driver circuitry as well as standard medical applications.

The RUZ converters are pin-compatible with the RK and RH converter series, offering a simple way to upgrade a 1W high isolation supply to 2W.

Selection Guide

Part Number	4kV	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)	Max Capacitive Load ⁽¹⁾
RKZ-xx05S*	(H)	5, 12	5	400	82-84	1200µF
RKZ-xx12S*	(H)	5, 12	12	168	82-84	680µF
RKZ-xx15S*	(H)	5, 12	15	132	82-84	680µF
RKZ-xx05D*	(H)	5, 12	±5	±200	70-82	±470µF
RKZ-xx12D*	(H)	5, 12	±12	±84	82-84	±220µF
RKZ-xx15D*	(H)	5, 12	±15	±66	82-84	±220µF
RKZ-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. RKZ-0515D/P,

e.g. RKZ-0515D/HP has 4kV Isolation and is Short Circuit Protected.

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

Input Voltage Range			±10%
Output Voltage Accuracy			±5%
Line Voltage Regulation			1.2%/1% of V_{in} typ.
Load Voltage Regulation	5V type		15% max.
(10% to 100% load)	Other types, RKZ-xx1509D		10% max.
Output Ripple and Noise (20MHz limited)			150mVp-p max.
Operating Frequency			35kHz min. / 50kHz typ. / 85kHz max.
	RKZ-xx1509D		20kHz min. / 51kHz 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)		3000VDC
	(rated for 1 minute**)		1500VAC / 60Hz
Isolation Voltage	H-Suffix (tested for 1 second)		4000VDC
	H-Suffix (rated for 1 minute**)		2000VAC / 60Hz
Isolation Capacitance			30pF min. / 110pF max.
Isolation Resistance			15 GΩ min.
Short Circuit Protection			1 sec
Operating Temperature Range (free air convection, without derating)			-40°C to +90°C (see Graph)
Storage Temperature Range			-55°C to +125°C
Relative Humidity			95% RH
Package Weight			2.8g
Packing Quantity			25 pcs per Tube
MTBF (+25°C)	Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F	988 x 10 ³ hours
(+85°C)		using MIL-HDBK 217F	135 x 10 ³ hours

continued on next page

ECONOLINE

DC/DC-Converter

with 3 year Warranty

RECOM

2 Watt

SIP7

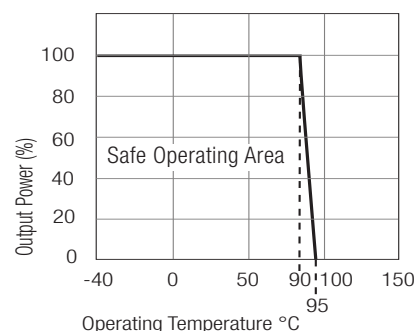
Single & Dual Output



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

RKZ

Derating-Graph (Ambient Temperature)



**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.

Refer to Application Notes

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

Certifications

EN General Safety

Report: SPCLVD1109103

EN60950-1:2006 + A12:2011

EN Medical safety

Report: SPCMDD1205098-4

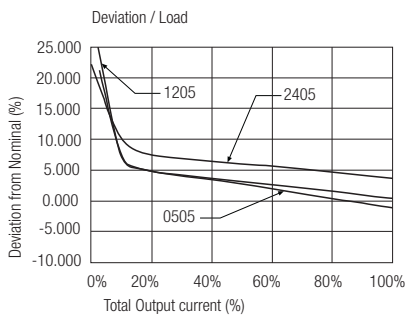
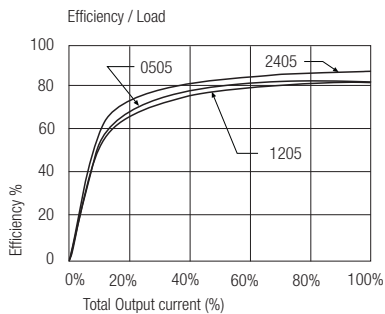
IEC/EN 60601-1:2006, 3rd Edition

Notes

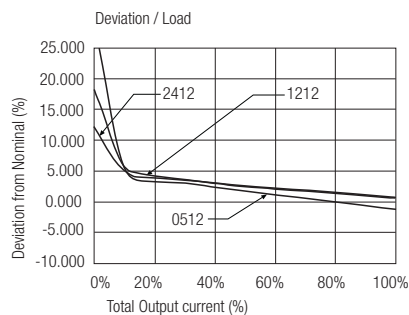
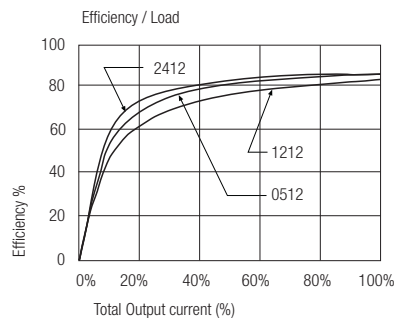
Note 1 Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter.

Typical Characteristics

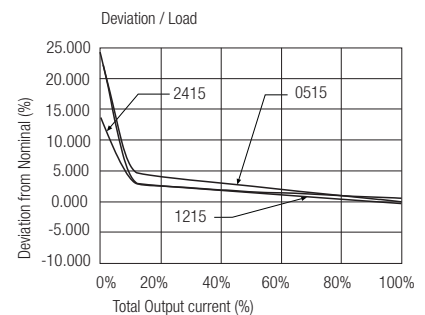
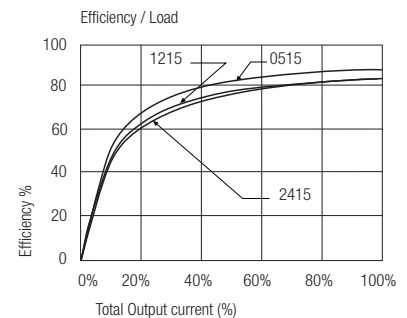
RKZ-xx05S



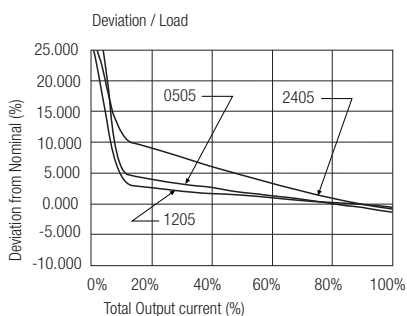
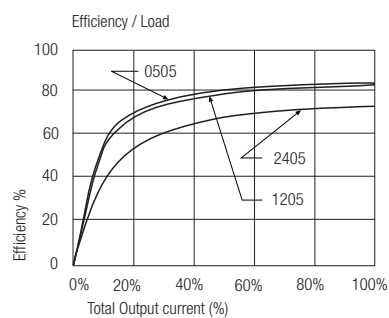
RKZ-xx12S



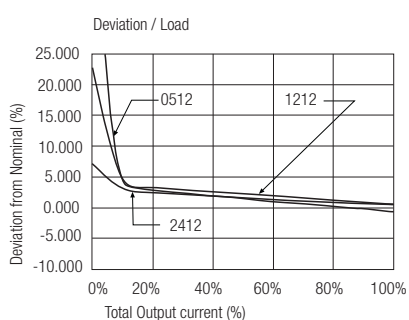
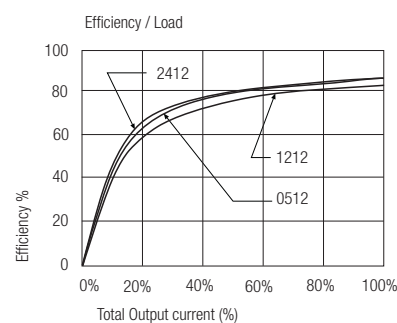
RKZ-xx15S



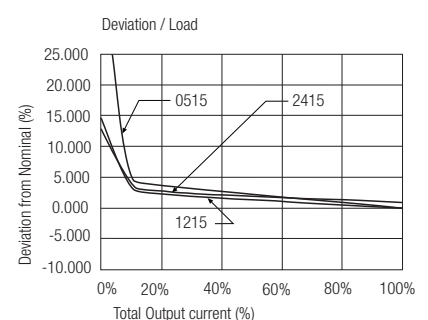
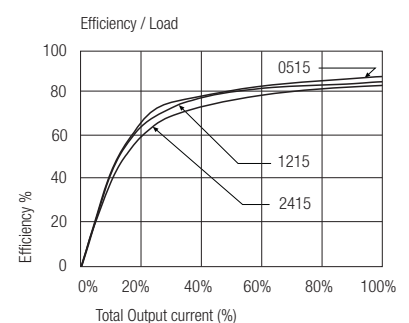
RKZ-xx05D



RKZ-xx12D

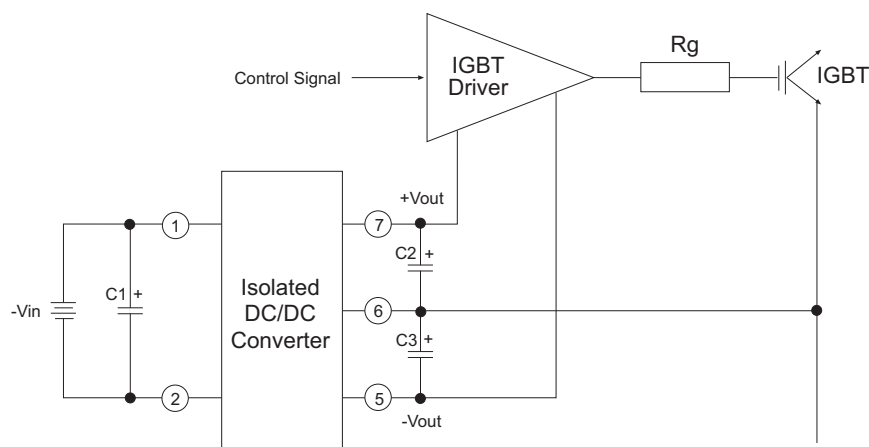


RKZ-xx15D



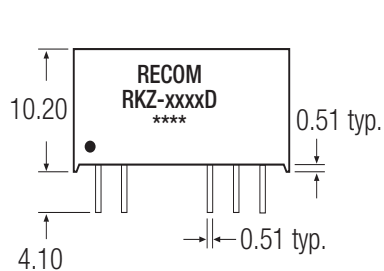
Application

IGBT Application Circuit

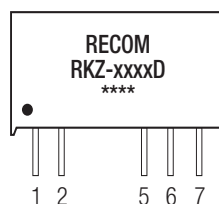


Package Style and Pinning (mm)

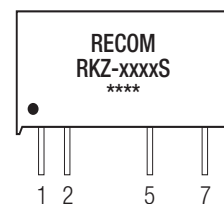
7 PIN SIP Package



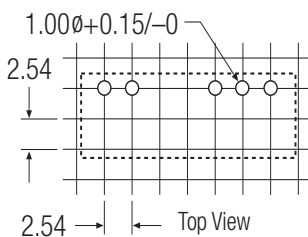
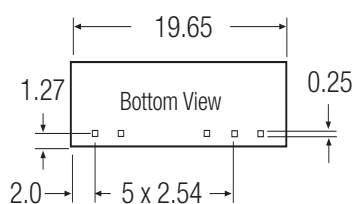
Dual Output



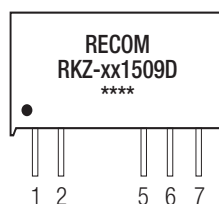
Single Output



Recommended Footprint Details



+15/-9 Output



Pin Connections

Pin #	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	No Pin	Com
7	+Vout	+Vout

NC = No Connection

XX.X ± 0.5 mm

XX.XX ± 0.25 mm