

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

ECONOLINE

DC/DC-Converter

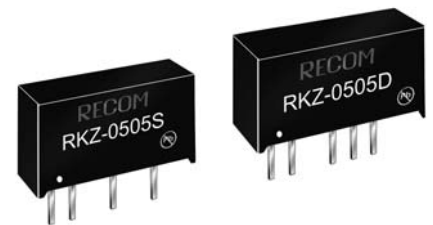
with 3 year Warranty

RECOM

2 Watt

SIP7

Single & Dual Output

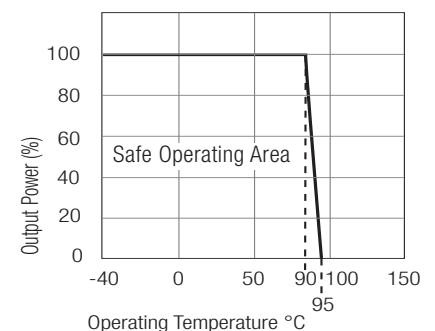


EN-60950-1 Certified
IEC/EN-60601-1 Certified*

* +15/-9 Version excluded

RKZ

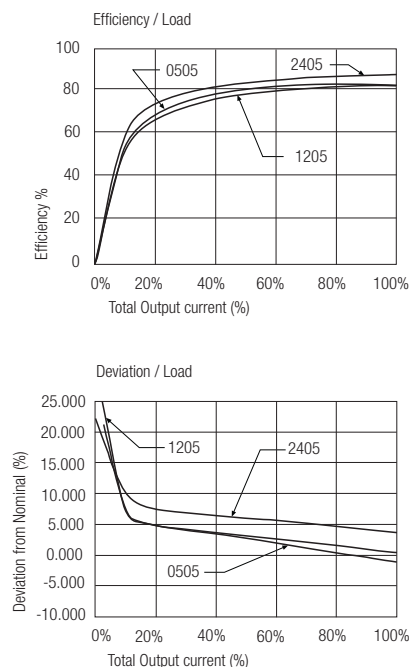
Derating-Graph (Ambient Temperature)



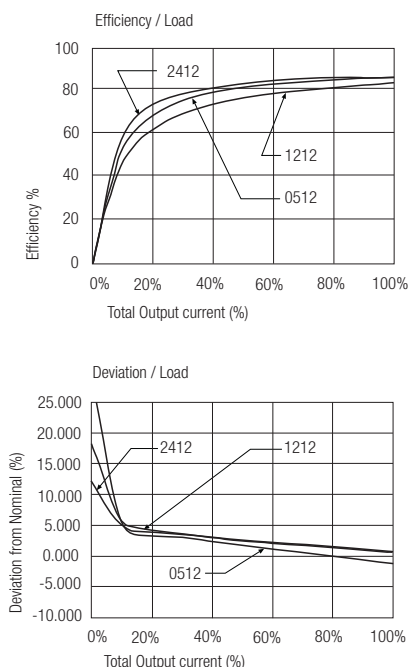
Refer to Application Notes

Typical Characteristics

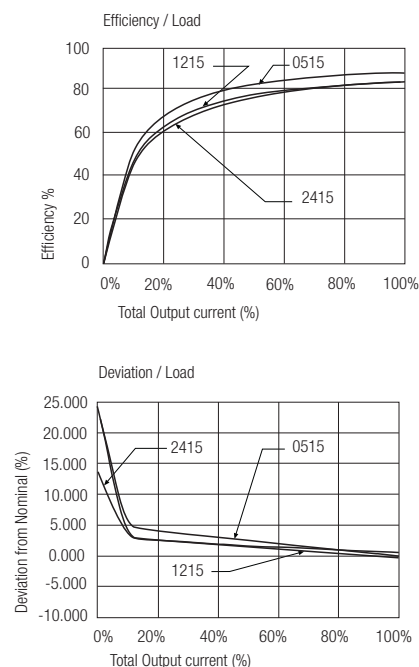
RKZ-xx05S



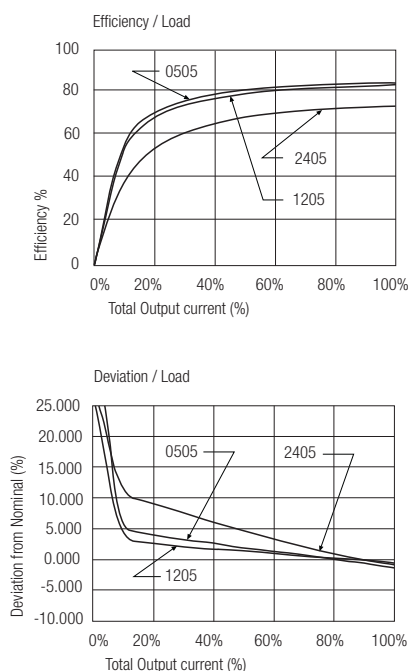
RKZ-xx12S



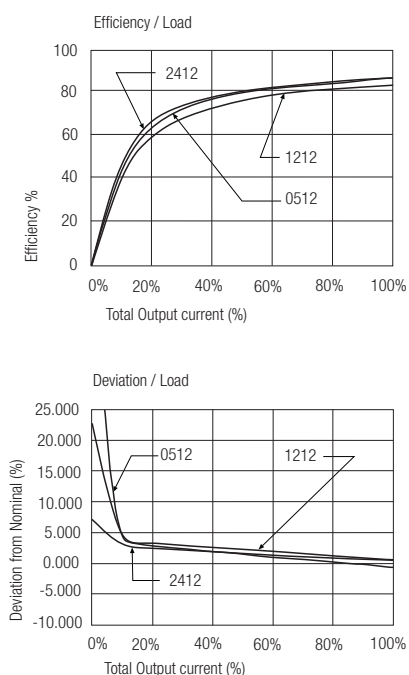
RKZ-xx15S



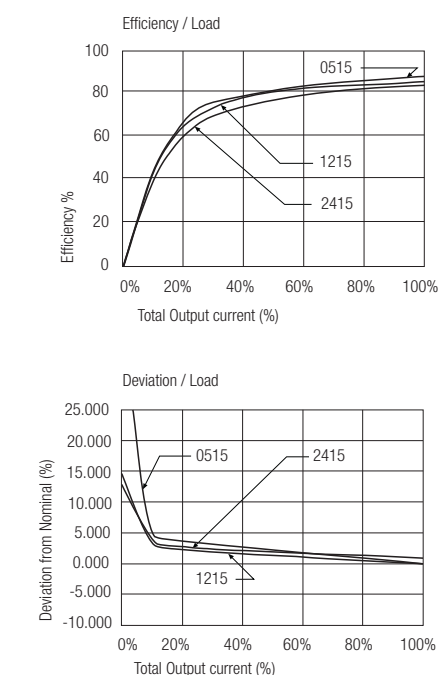
RKZ-xx05D



RKZ-xx12D



RKZ-xx15D



Typical Characteristics

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.

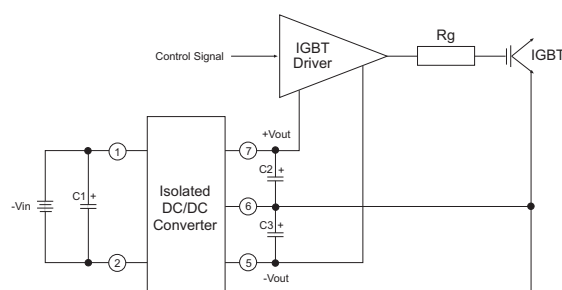
Certifications

EN General Safety Report: SPCLVD1109103 EN60950-1:2006 + A12:2011

EN Medical safety Report: SPCMDD1205098-4 IEC/EN 60601-1:2006, 3rd Edition

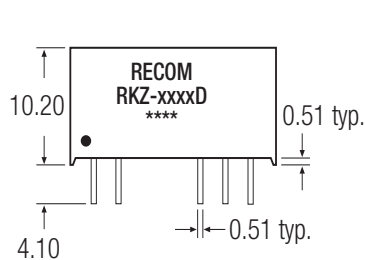
Application

IGBT Application Circuit

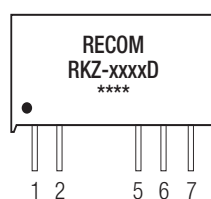


Package Style and Pinning (mm)

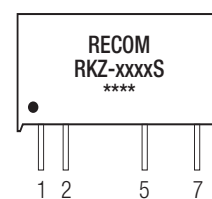
7 PIN SIP Package



Dual Output

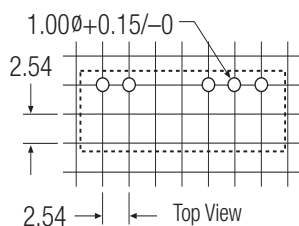
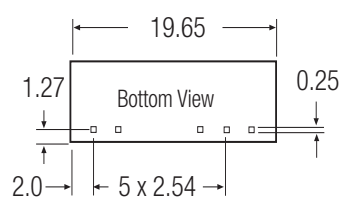


Single Output

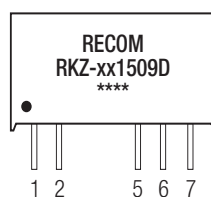


RKZ

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