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

ECONOLINE
DC/DC-Converter
with 3 year Warranty

RECOM

2 Watt SIP7 Single & Dual Output

RoHS 2011/65/EU 6/6

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

RKZ

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 RKZ 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 SIP7	4kV	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)	Max Capacitive Load[1]
RKZ-xx05S*	(H)	5, 12, 24	5	400	82-84	1500µF
RKZ-xx12S*	(H)	5, 12, 24	12	168	82-87	330µF
RKZ-xx15S*	(H)	5, 12, 24	15	132	82-84	330µF
RKZ-xx05D*	(H)	5, 12, 24	±5	±200	70-83	±680µF
RKZ-xx12D*	(H)	5, 12, 24	±12	±84	82-84	±220µF
RKZ-xx15D*	(H)	5, 12, 24	±15	±66	82-88	±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,

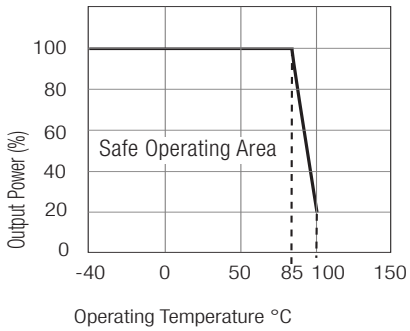
* add Suffix „**H**" for 4kV Isolation, e.g. RKZ-0515D/HP has 4kV Isolation and is Short Circuit Protected.

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		low line to high line @ 100% load	1.2%/1% of Vin 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			20kHz 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			120pF max.
Isolation Resistance			10 GΩ min.
Short Circuit Protection		only with „/P"-Suffix	continuous
Operating Temperature Range (free air convection, without derating)			-40°C to +85°C (see Graph)
Storage Temperature Range			-55°C to +125°C
Relative Humidity			5% - 95% RH
Package Weight			2.8g
Material		Case	UL94V-0, black plastic
		Potting	UL94V-0, Epoxy
Packing Quantity			25 pcs per Tube
MTBF (+25°C) } *Detailed Information see Application Notes chapter "MTBF"*		using MIL-HDBK 217F	18300 x 10^3 hours
(+85°C) }		using MIL-HDBK 217F	8070 x 10^3 hours

continued on next page

Derating-Graph
(Ambient Temperature)



**Any data referred to in this datasheet are of indivative 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°C, nominal input voltage, full load and after warm-up)

Certifications

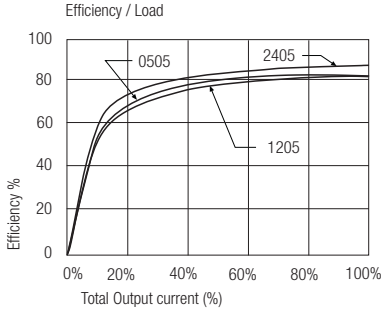
EN General Safety	Report: SPCLVD1109103	EN60950-1:2006 + A12:2011
EN Medical safety	Report: SPCMDD1205098-4	IEC/EN 60601-1:2006, 3rd Edition

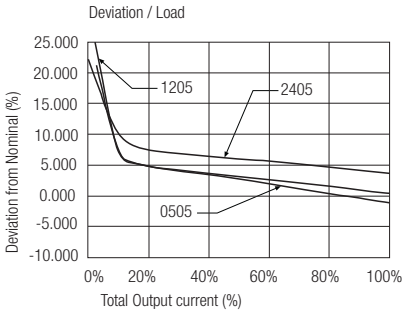
Notes

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.

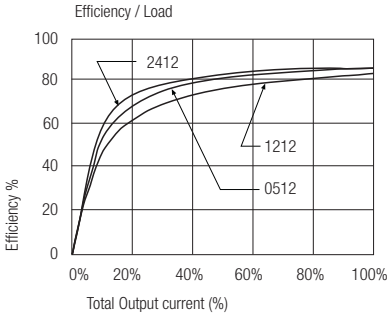
Typical Characteristics

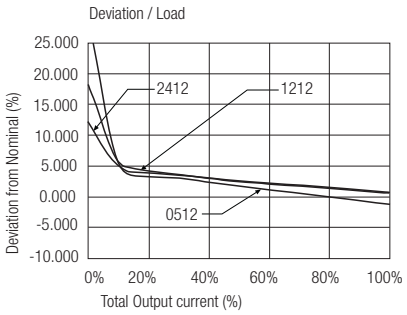
RKZ-xx05S



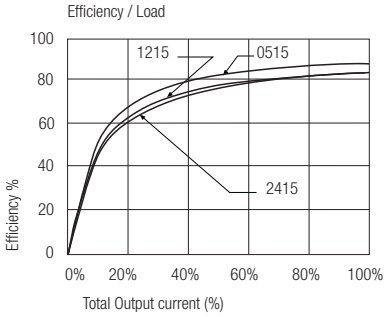


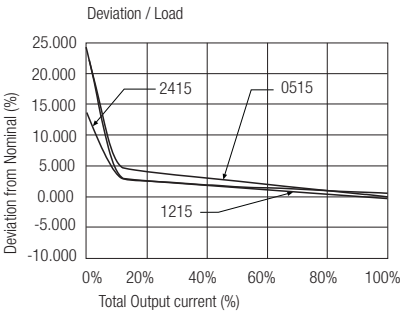
RKZ-xx12S



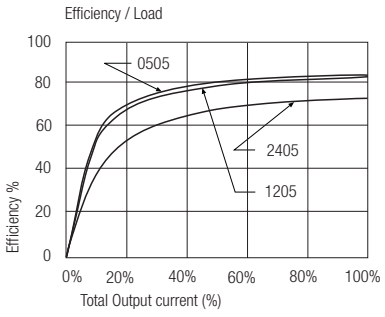


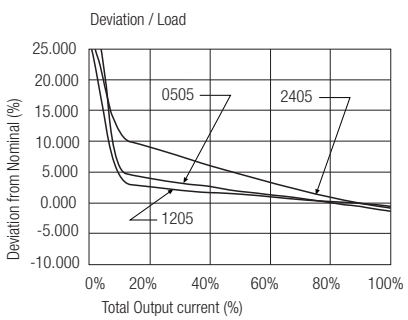
RKZ-xx15S





RKZ-xx05D





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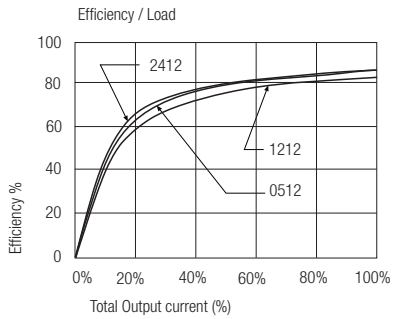
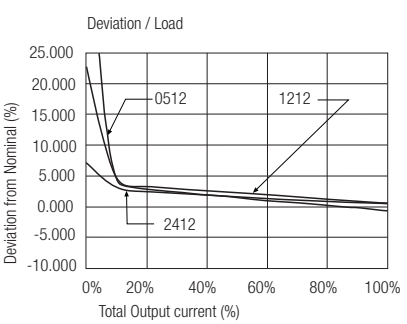
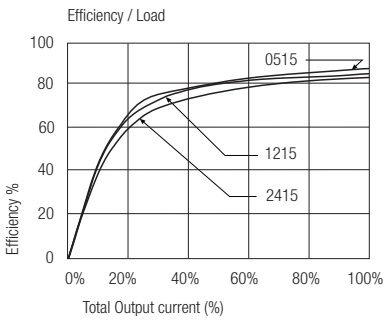
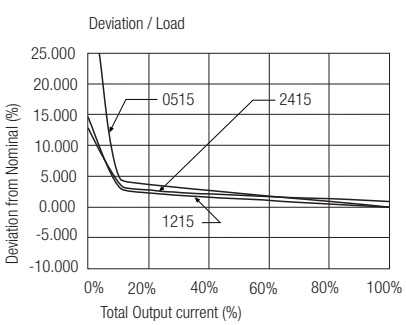




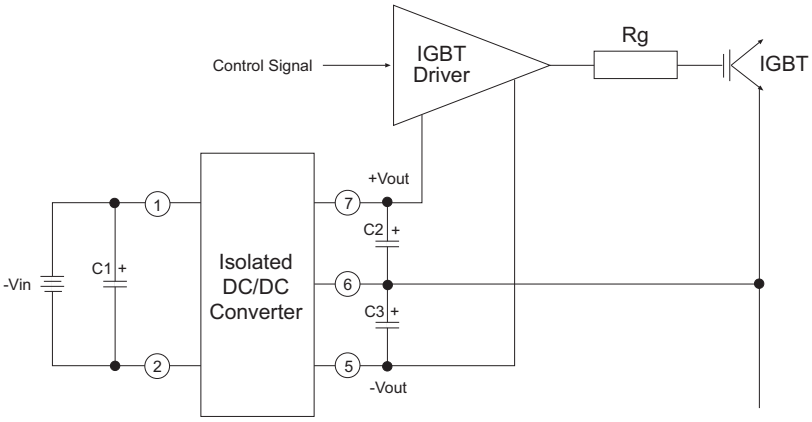
RKZ-xx15D



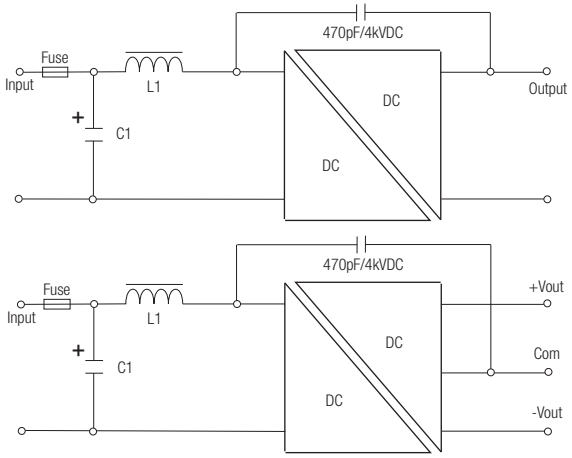


Application

IGBT Application Circuit



EMC Filter Suggestion for EN55022 Class B



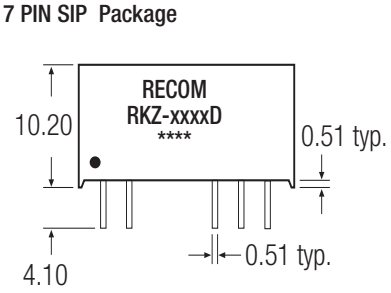
Standard and /H versions

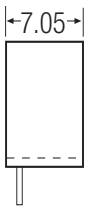
C1	L1	Vin
10µF	4.7µH	5V
4.7µF	22µH	12V
2.2µF	47µH	24V

C1 = MLCC
L1 = SMD Inductor

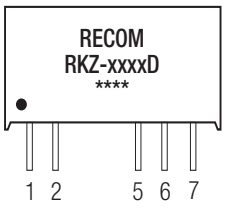
Package Style and Pinning (mm)

7 PIN SIP Package

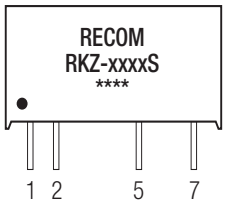




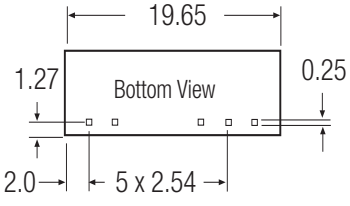
Dual Output

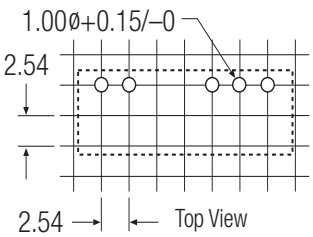


Single Output

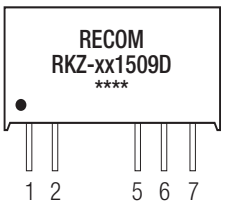


Recommended Footprint Details





+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