Features

Unregulated Converters

- UL/CSA and EN-60950-1 Safety certified
- EN-60601 for Medical Applications
- 6kVDC Isolation
- Optional Continuous Short Circuit Protection
- Efficiency up to 82%
- Space Saving „Skinny DIP“ Package
- Very Low Isolation Capacitance
- Suitable for IGBT Applications

Selection Guide

Part Number SIP 7	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency Std (%)	Max Capacitive Load[1]
RV-xx3.3S*	3.3, 5, 12, 15, 24	3.3	600	70	3300µF
RV-xx05S*	3.3, 5, 12, 15, 24	5	400	70-75	1200µF
RV-xx09S*	3.3, 5, 12, 15, 24	9	222	70-75	1200µF
RV-xx12S*	3.3, 5, 12, 15, 24	12	167	70-75	680µF
RV-xx15S*	3.3, 5, 12, 15, 24	15	132	75-80	680µF
RV-xx24S*	3.3, 5, 12, 15, 24	24	83	75-80	220µF
RV-xx3.3D*	3.3, 5, 12, 15, 24	±3.3	±300	70	±1500µF
RV-xx05D*	3.3, 5, 12, 15, 24	±5	±200	70-75	±470µF
RV-xx09D*	3.3, 5, 12, 15, 24	±9	±111	70-75	±470µF
RV-xx12D*	3.3, 5, 12, 15, 24	±12	±85	70-75	±220µF
RV-xx15D*	3.3, 5, 12, 15, 24	±15	±66	75-80	±220µF
RV-xx24D*	3.3, 5, 12, 15, 24	±24	±42	75-80	±100µF
RV-xx1509D	5, 12, 24	+15/-9	+67/-111	70-82	±330µF

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

* add Suffix “P” for Continuous Short Circuit Protection, e.g. RV-0505S/P, RV-0505D/P

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 output types	20% max.
	5V output type	15% max.
	9V, 12V, 15V, 24V output types, RV-xx1509D	10% max.
Output Ripple and Noise (20MHz limited)		200mVp-p max.
Operating Frequency		20kHz min. / 50kHz typ. / 85kHz max.
	RV-xx1509D	20kHz min. / 47kHz typ.
Efficiency at Full Load		70% min. / 75% typ.
Minimum Load = 0%		Specifications valid for 10% minimum load only.
Isolation Voltage	(tested for 1 second)	6000VDC
	(rated for 1 minute)	3000VAC / 60Hz
Isolation Capacitance		2pF min. / 12pF max.
Isolation Resistance		15 GΩ min.
Short Circuit Protection		1 Second
P-Suffix		Continuous
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		9g
Packing Quantity		15 pcs per Tube

cont.

ECONOLINE

DC/DC-Converter

with 3 year Warranty

RECOM

2 Watt DIP24 Miniature Single & Dual Output

RoHS 2011/65/EU 6/6

E358085

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

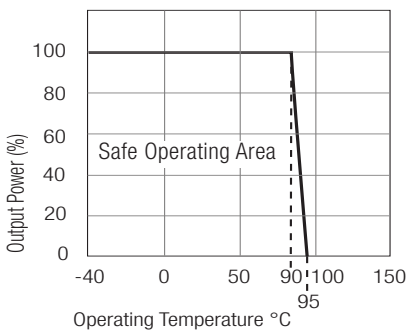
RV

Description

Very high isolation in a small size are the main features of this miniature DIP24 converter, ideal for highly sophisticated industrial, test and measurement and medical designs where board space is at a premium.

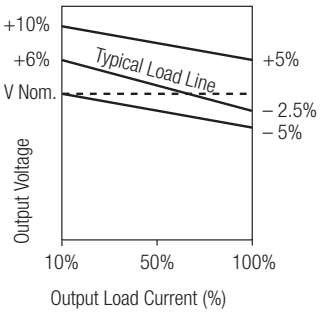
Derating-Graph

(Ambient Temperature)



Refer to Application Notes

Tolerance Envelope



Specifications (continued)

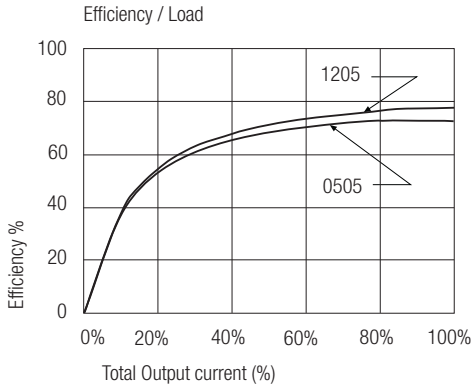
MTBF (+25°C)	*Detailed Information see Application Notes chapter "MTBF"*	using MIL-HDBK 217F	1154 x 10^3 hours
(+85°C)		using MIL-HDBK 217F	168 x 10^3 hours
Certifications	UL/cUL General Safety	Report: E358085	UL 60950-1 2nd Ed.
	EN General Safety	Report: SPCLVD1109103	EN60950-1:2006 + A12: 2011
	EN Medical Safety	Report: SPCMDD1205098-4	IEC/EN60601-1:2006, 3rd Edition

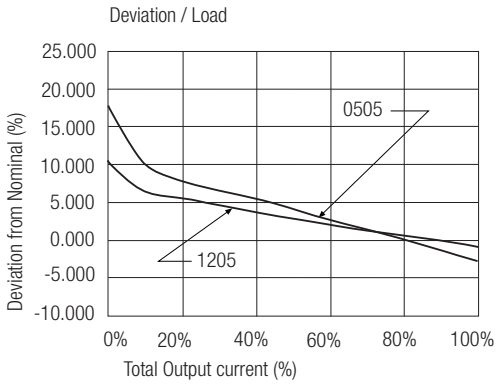
Notes

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.

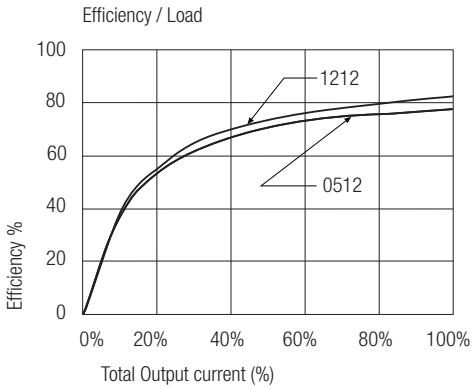
Typical Characteristics

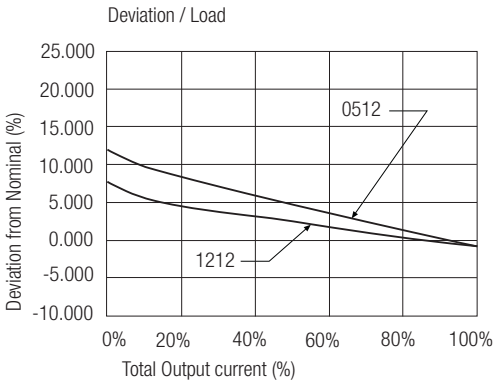
RV-xx05S





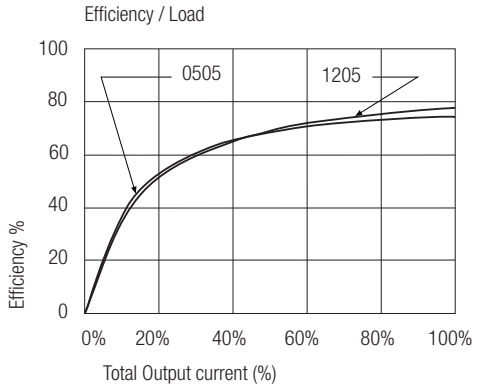
RV-xx12S

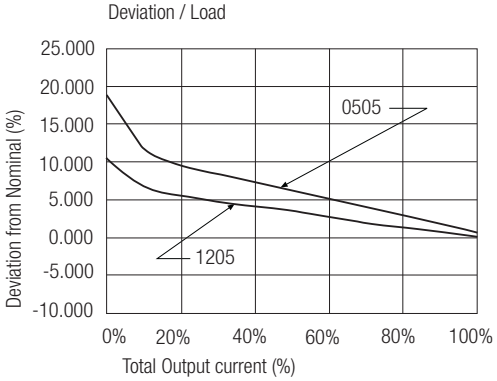




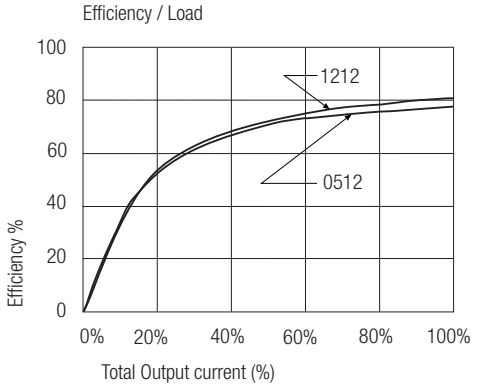
Typical Characteristics

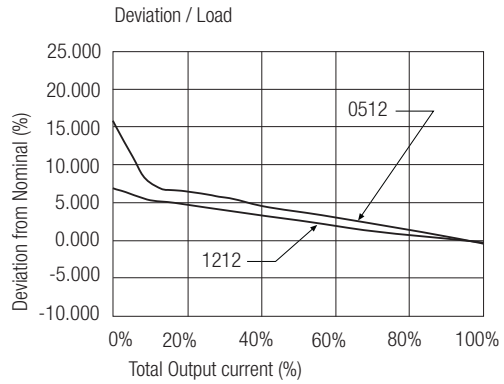
RV-xx05D





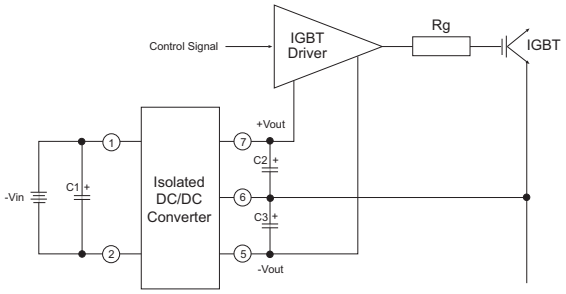
RV-xx12D





Applications

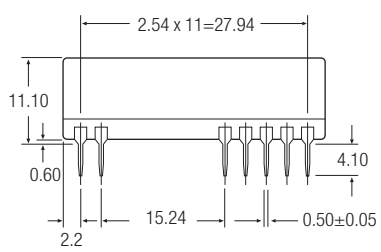
IGBT Application Circuit

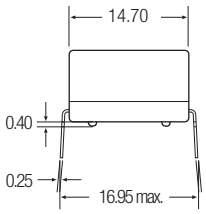


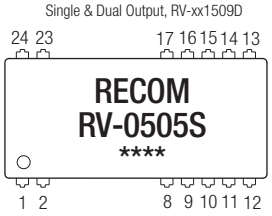
Package Style and Pinning (mm)

3rd angle projection

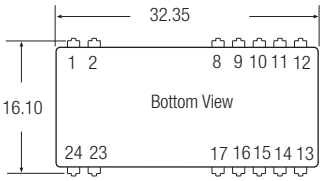
24 PIN DIP Miniature Package Style

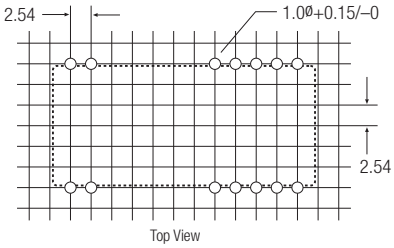






Recommended Footprint Details





Pin Connections	
Pin #	Single
1	+Vin
2	-Vin
8, 9, 11, 14	NC
10, 15	-Vout
12 & 13	+Vout
16, 17, 23, 24	NC

NC = No Connection

Pin Connections	
Pin #	Dual
1	+Vin
2	-Vin
8, 17	-Vout
9, 11, 14,16, 23, 24	NC
10 & 15	Com
12, 13	+Vout

NC = No Connection

XX.X ± 0.5 mm
XX.XX ± 0.25 mm

RV