

Features

Unregulated Converters

Rev.0

- Industry Standard Pinout
- 1kVDC & 2kVDC Isolation
- UL94V-0 Package Material
- Optional Continuous Short Circuit Protected
- Fully Encapsulated
- Custom Solutions Available
- Efficiency to 85 %

Description

The RO and RE series DC/DC converters are identical designs offered in two industry standard case sizes. They are typically used in general purpose power isolation and voltage matching applications, and feature a full industrial operating temperature range of -40°C ~ +85°C without derating.

Selection Guide

Part Number	SIP 7 (2kV)	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)
RO-xx3.3S	RE-xx3.3S (H)	3.3, 5, 12, 15, 24	3.3	303	75
RO-xx05S	RE-xx05S (H)	3.3, 5, 12, 15, 24	5	200	78-80
RO-xx09S	RE-xx09S (H)	3.3, 5, 12, 15, 24	9	111	78-80
RO-xx12S	RE-xx12S (H)	3.3, 5, 12, 15, 24	12	83	80-84
RO-xx15S	RE-xx15S (H)	3.3, 5, 12, 15, 24	15	66	80-84
RO-xx24S	RE-xx24S (H)	3.3, 5, 12, 15, 24	24	42	78-85

xx = Input Voltage (other input and output voltage combinations available on request)

* add Suffix "P" for Continuous Short Circuit Protection, e.g. RO-0505S/P, RO-0505S/HP

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

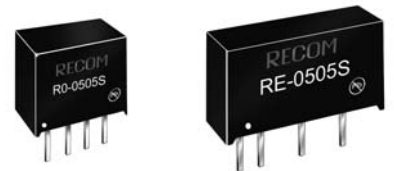
Input Voltage Range		$\pm 10\%$	
Output Voltage Accuracy		$\pm 5\%$	
Line Voltage Regulation		1.2%/1% of V_{in} typ.	
Load Voltage Regulation (10% to 100% full load)	3.3V output type	20% max.	
	5V output type	15% max.	
	9V, 12V, 15V, 24V output types	10% max.	
Output Ripple and Noise (20MHz limited)		100mVp-p max.	
Operating Frequency		50kHz min. / 100kHz typ. / 105kHz max.	
Efficiency at Full Load		70% min. / 80% typ.	
No Load Power Consumption		101mW min. / 126mW typ. / 220mW max.	
Maximum Capacitive Load		33 μF	
Isolation Voltage	(tested for 1 second)	1000VDC min.	
Rated Working Voltage	(long term isolation)	see Application Notes	
Isolation Voltage	H-Suffix (tested for 1 second)	2000VDC min.	
Rated Working Voltage	H-Suffix (long term isolation)	see Application Notes	
Isolation Capacitance		20pF min. / 75pF max.	
Isolation Resistance		10 G Ω min.	
Short Circuit Protection		1 Second	
P-Suffix		Continuous	
Operating Temperature Range (free air convection)		-40°C to +85°C (see Graph)	
Storage Temperature Range		-55°C to +125°C	
Relative Humidity		95% RH	
Package Weight	RO types	1.4g	
	RE types	2.2g	
MTBF (+25°C)	} Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F RO types	985 x 10 ³ hours
		RE types	992 x 10 ³ hours
(+85°C)		using MIL-HDBK 217F RO types	200 x 10 ³ hours
		RE types	145 x 10 ³ hours

ECONOLINE

DC/DC-Converter

RO & RE Series

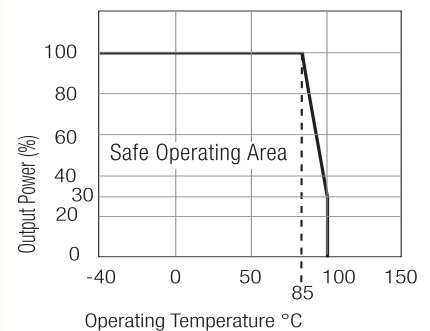
1 Watt SIP4 & SIP7 Single Output



**EN-60950-1 Certified
(RE Series only)**

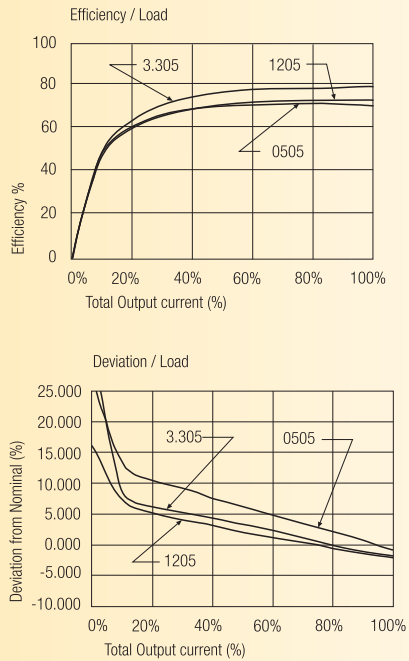
RECOM

Derating-Graph (Ambient Temperature)

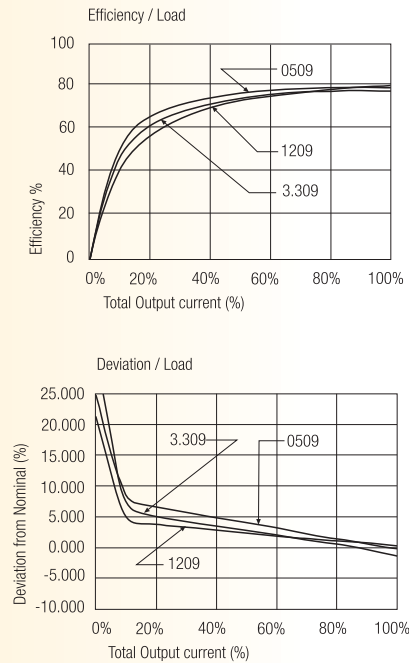


Typical Characteristics

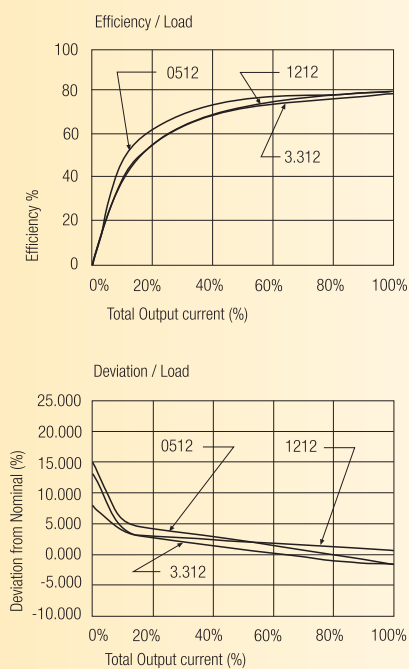
RO/RE-xx05S



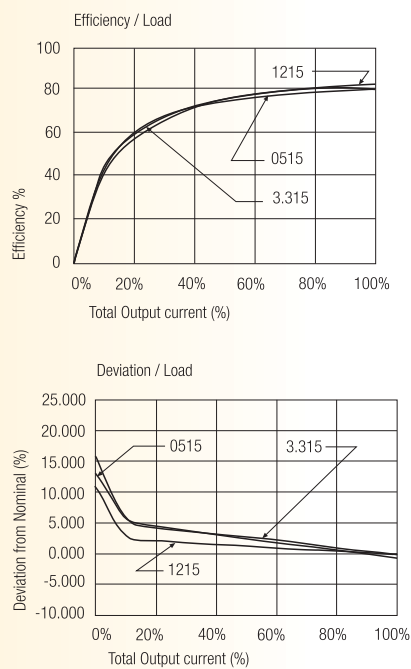
RO/RE-xx09S



RO/RE-xx12S

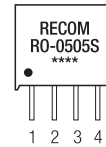
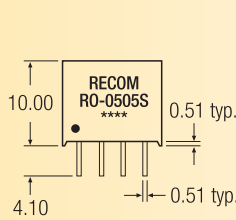


RO/RE-xx15S

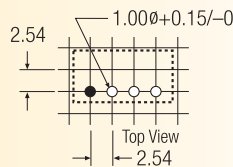
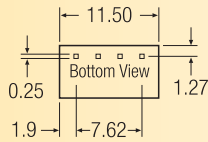


Package Style and Pinning (mm)

4 PIN SIP Package



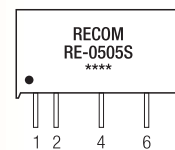
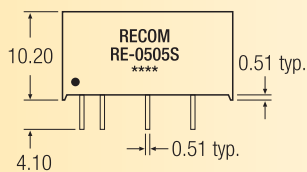
Recommended Footprint Details



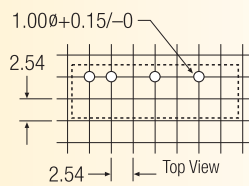
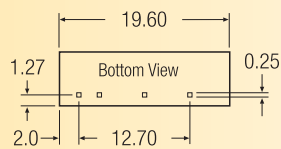
RO Pin Connections

Pin #	Single
1	-Vin
2	+Vin
3	-Vout
4	+Vout
XX.X ± 0.5 mm	
XX.XX ± 0.25 mm	

7 PIN SIP Package



Recommended Footprint Details



RE Pin Connections

Pin #	Single
1	+Vin
2	-Vin
4	-Vout
6	+Vout
XX.X ± 0.5 mm	
XX.XX ± 0.25 mm	