Features

Unregulated Converters

- Industry Standard Pinout
- 1kVDC & 2kVDC Isolation
- UL94V-0 Package Material
- Toroidal Magnetics
- Fully Encapsulated
- Custom Solutions Available
- Efficiency to 85%

ECONOLINE
DC/DC-Converter

RO & RE Series

1 Watt SIP4 & SIP7 Single Output

Selection Guide

Part Number			Input Voltage	Output Voltage	Output Current	Efficiency
SIP 4	SIP 7	(2kV)	(VDC)	(VDC)	(mA)	(%)
RO-xx1.8S	RE-xx1.8S	(H)	1.8, 3.3, 5, 9, 12, 15, 24	1.8	555	70
RO-xx3.3S	RE-xx3.3S	(H)	1.8, 3.3, 5, 9, 12, 15, 24	3.3	303	75
RO-xx05S	RE-xx05S	(H)	1.8, 3.3, 5, 9, 12, 15, 24	5	200	70-78
RO-xx09S	RE-xx09S	(H)	1.8, 3.3, 5, 9, 12, 15, 24	9	111	76-78
RO-xx12S	RE-xx12S	(H)	1.8, 3.3, 5, 9, 12, 15, 24	12	83	78-80
RO-xx15S	RE-xx15S	(H)	1.8, 3.3, 5, 9, 12, 15, 24	15	66	80-84
RO-xx24S	RE-xx24S	(H)	1.8, 3.3, 5, 9, 12, 15, 24	24	42	74-85

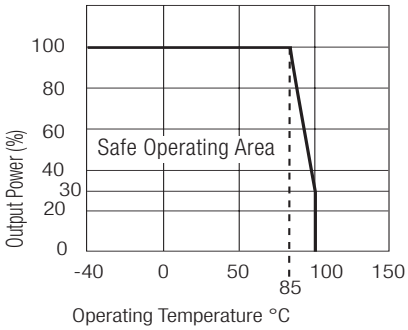
xx = Input Voltage

*add Suffix "P" for Continuous Schort Circuit Protection

Specifications (Core Operating Area)

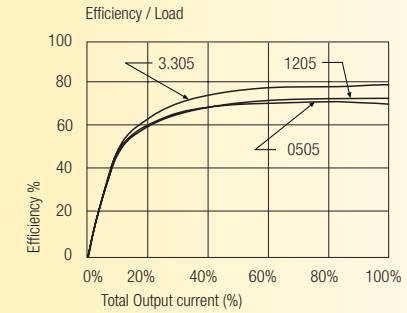
Input Voltage Range			±10%
Output Voltage Accuracy			±5%
Line Voltage Regulation			1.2%/1% of Vin max.
Load Voltage Regulation (10% to 100% full load)		1.8V, 3.3V output types 5V output type 9V, 12V, 15V, 24V output types	20% max. 15% max. 10% max.
Output Ripple and Noise (20MHz limited)			100mVp-p max.
Operating Frequency			50kHz min. / 100kHz typ. / 105kHz max.
Efficiency at Full Load			70% min. / 80% typ.
No Load Power Consumption			101mW min. / 126mW typ. / 171mW max.
Isolation Voltage		(tested for 1 second)	1.000VDC min.
Rated Working Voltage		(long term isolation)	see Application Notes
Isolation Voltage	H-Suffix	(tested for 1 second)	2.000VDC min.
Rated Working Voltage	H-Suffix	(long term isolation)	see Application Notes
Isolation Capacitance			20pF min. / 75pF max.
Isolation Resistance			10 GΩ 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		MSL Level 1	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

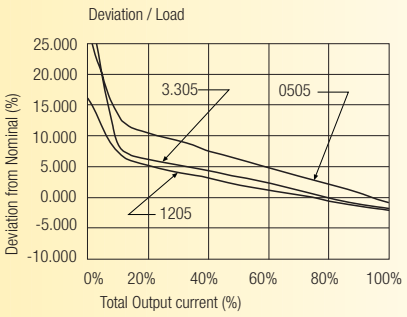
Derating-Graph
(Ambient Temperature)



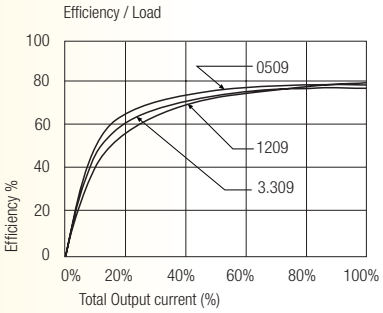
Typical Characteristics

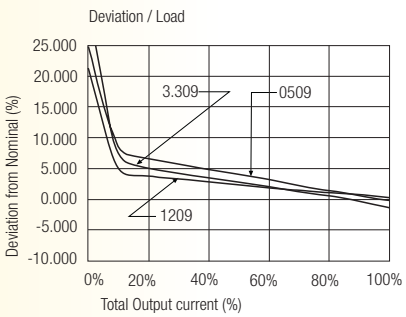
RO/RE-xx05S



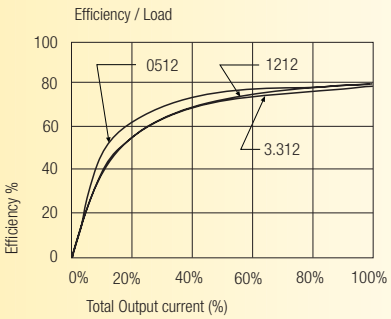


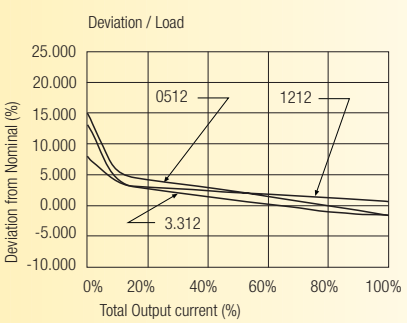
RO/RE-xx09S



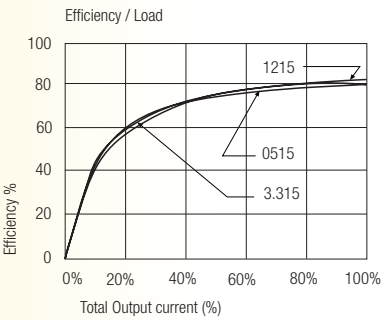


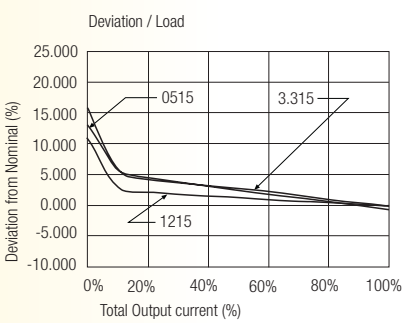
RO/RE-xx12S





RO/RE-xx15S

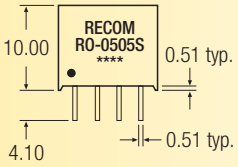


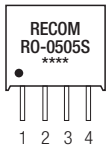


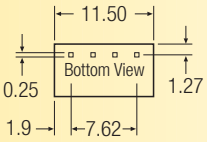
Package Style and Pinning (mm)

3rd angle projection

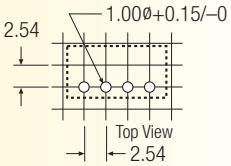
4 PIN SIP Package







Recommended Footprint Details

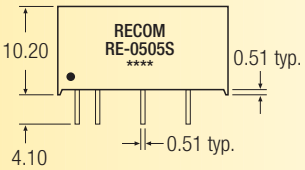


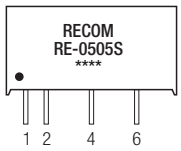
RO Pin Connections

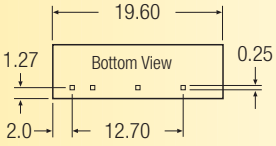
Pin #	Single
1	–Vin
2	+Vin
3	–Vout
4	+Vout

XX.X ± 0.5 mm
XX.XX ± 0.25 mm

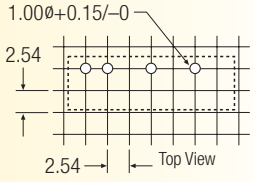
7 PIN SIP Package







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