

Features

Unregulated Converters

- Dual Output from a Single Input Rail
- Power Sharing on Output
- Industry Standard Pinout
- 1kVDC & 2kVDC Isolation
- Custom Solutions Available
- UL94V-0 Package Material
- Efficiency to 85%

ECONOLINE

DC/DC-Converter

RB & RA Series

Selection Guide

Part Number	Input Voltage	Output Voltage	Output Current	Efficiency
SIP 7 DIP 14 (2kV)	(VDC)	(VDC)	(mA)	(%)
RB-xx1.8S RA-xx1.8S (H)	1.8, 3.3, 5, 9, 12, 15, 24	1.8	555	70
RB-xx3.3S RA-xx3.3S (H)	1.8, 3.3, 5, 9, 12, 15, 24	3.3	303	75
RB-xx05S RA-xx05S (H)	1.8, 3.3, 5, 9, 12, 15, 24	5	200	70-78
RB-xx09S RA-xx09S (H)	1.8, 3.3, 5, 9, 12, 15, 24	9	111	76-78
RB-xx12S RA-xx12S (H)	1.8, 3.3, 5, 9, 12, 15, 24	12	84	78-80
RB-xx15S RA-xx15S (H)	1.8, 3.3, 5, 9, 12, 15, 24	15	66	80-84
RB-xx24S RA-xx24S (H)	1.8, 3.3, 5, 9, 12, 15, 24	24	42	74-85
RB-xx1.8D RA-xx1.8D (H)	1.8, 3.3, 5, 9, 12, 15, 24	±1.8	±278	70
RB-xx3.3D RA-xx3.3D (H)	1.8, 3.3, 5, 9, 12, 15, 24	±3.3	±152	70
RB-xx05D RA-xx05D (H)	1.8, 3.3, 5, 9, 12, 15, 24	±5	±100	74-78
RB-xx09D RA-xx09D (H)	1.8, 3.3, 5, 9, 12, 15, 24	±9	±56	76-79
RB-xx12D RA-xx12D (H)	1.8, 3.3, 5, 9, 12, 15, 24	±12	±42	80-82
RB-xx15D RA-xx15D (H)	1.8, 3.3, 5, 9, 12, 15, 24	±15	±33	80-84
RB-xx24D RA-xx24D (H)	1.8, 3.3, 5, 9, 12, 15, 24	±24	±21	80-84

xx = Input Voltage

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	20% max.
	5V output type	15% max.
	9V, 12V, 15V, 24V output types	10% max.
Output Ripple and Noise (20MHz limited)	Single output types	100mVp-p max.
	Dual output types	±75mVp-p max.
Operating Frequency		50kHz min. / 100kHz typ. / 105kHz max.
Efficiency at Full Load		70% min. / 80% typ.
No Load Power Consumption	Single	101mW min. / 126mW typ. / 171mW max.
	Dual	87mW min. / 130mW typ. / 190mW 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
Operating Temperature Range (free air convection)		-40°C to +85°C (see Graph)
Storage Temperature Range		-55°C to +125°C

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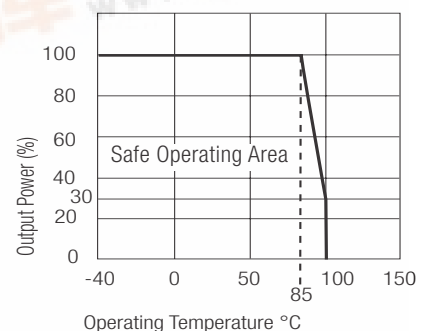
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1 Watt SIP7 & DIP14 Single & Dual Output



RECOM

Derating-Graph (Ambient Temperature)



PDFDZSC.COM

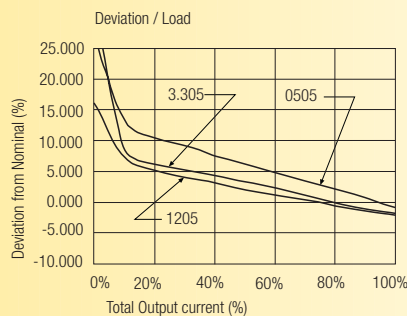
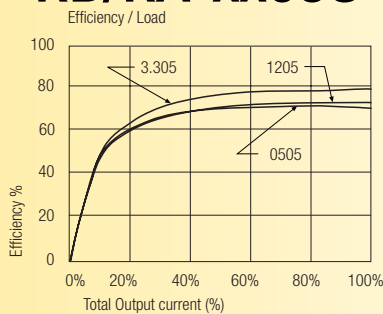
Specifications (Core Operating Area)

Relative Humidity	MSL Level 1	95% RH
Package Weight	RB types	2.2g
	RA types	2.6g
MTBF (+25°C)	using MIL-HDBK 217F	1012 x 10 ³ hours
(+85°C)		151 x 10 ³ hours

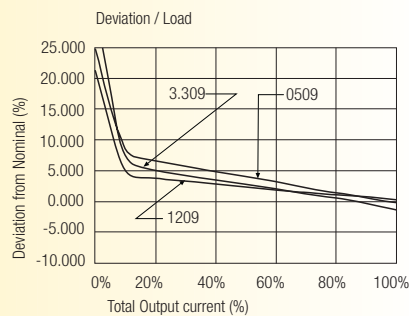
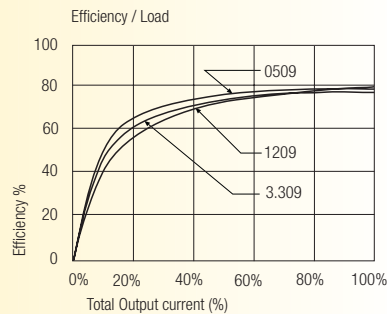
*Detailed Information see
Application Notes chapter "MTBF"*

Typical Characteristics

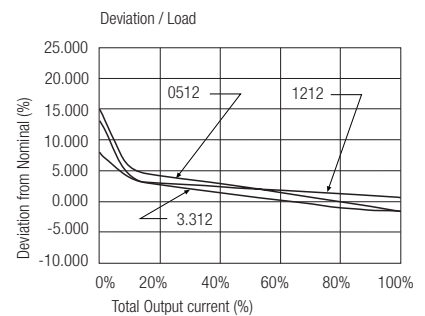
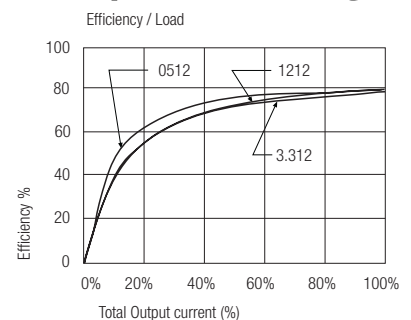
RB/RA-xx05S



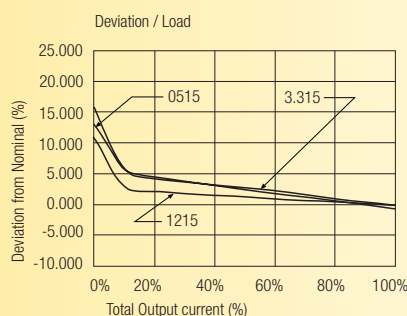
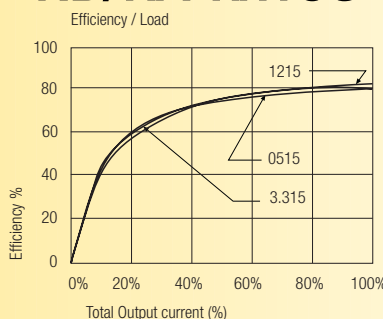
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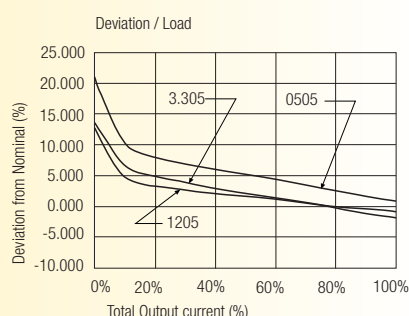
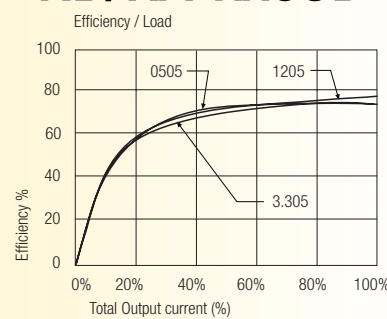
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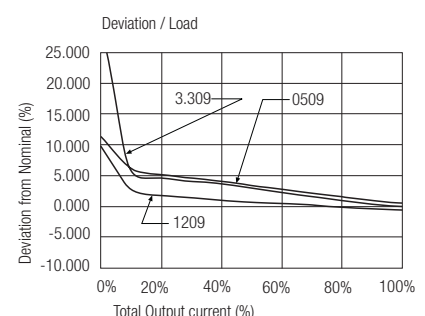
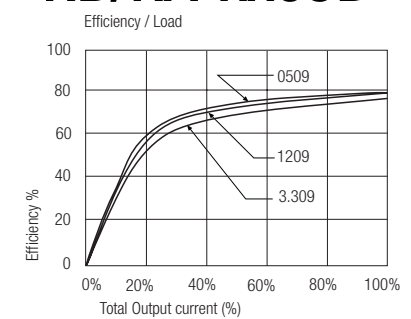
RB/RA-xx15S



RB/RA-xx05D

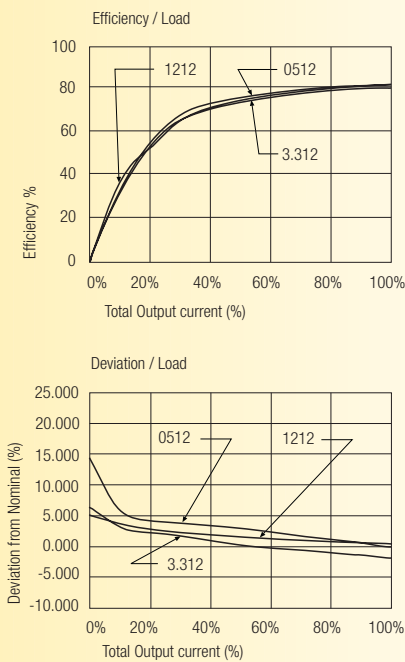


RB/RA-xx09D

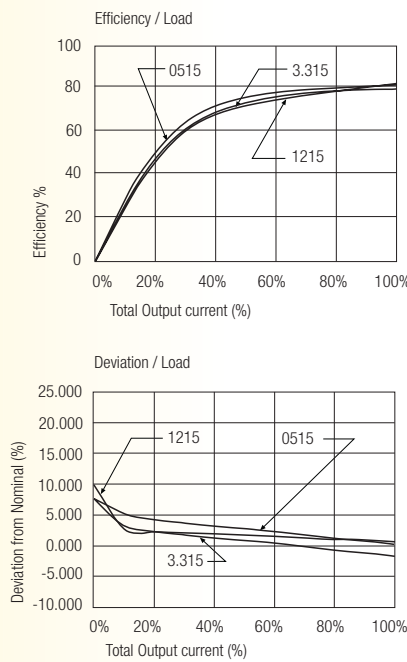


Typical Characteristics

RB/RA-xx12D

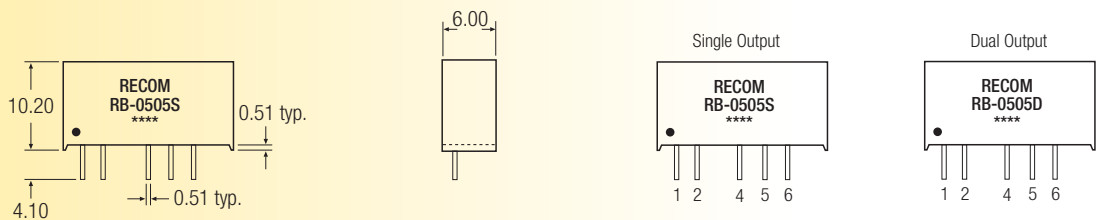


RB/RA-xx15D

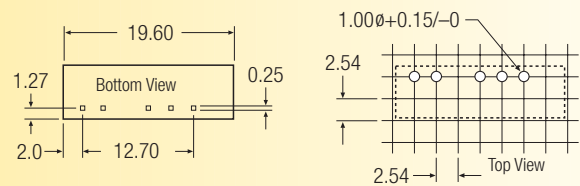


Package Style and Pinning (mm)

7 PIN SIP Package



Recommended Footprint Details



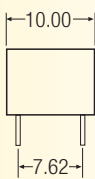
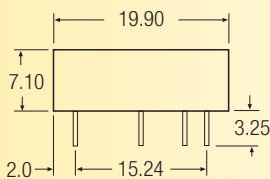
Pin Connections

Pin #	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
4	NC	-Vout
5	-Vout	Com
6	+Vout	+Vout

NC = No Connection
XX.X ± 0.5 mm
XX.XX ± 0.25 mm

Package Style and Pinning (mm)

14 PIN DIP Package



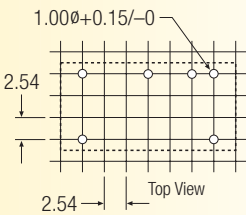
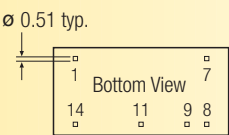
Single Output



Dual Output



Recommended Footprint Details



Pin Connections

Pin #	Single	Dual
1	-Vin	-Vin
7	NC	NC
8	-Vout	Com
9	+Vout	+Vout
11	NC	-Vout
14	+Vin	+Vin

NC = No Connection
XX.X ± 0.5 mm
XX.XX ± 0.25 mm