Features

Unregulated Converters

- Single Output Rail
- Industry Standard Pinout
- 1kVDC & 2kVDC Isolation
- High Efficiency for Low Power Applications
- UL94V-0 Package Material
- Toroidal Magnetics
- Fully Encapsulated
- Efficiency to 80%

ECONOLINE
DC/DC-Converter

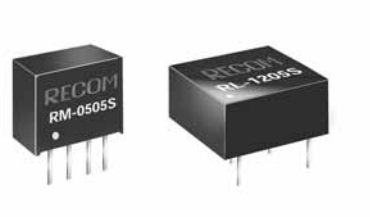
RM & RL Series

Selection Guide

Part Number			Input Voltage	Output Voltage	Output Current	Efficiency
SIP 4	DIP8	(2kV)	(VDC)	(VDC)	(mA)	(%)
RM-xx1.8S	RL-xx1.8S	(H)	1.8, 3.3, 5, 9, 12, 15, 24	1.8	139	70
RM-xx3.3S	RL-xx3.3S	(H)	1.8, 3.3, 5, 9, 12, 15, 24	3.3	76	65-70
RM-xx05S	RL-xx05S	(H)	1.8, 3.3, 5, 9, 12, 15, 24	5	50	66-72
RM-xx09S	RL-xx09S	(H)	1.8, 3.3, 5, 9, 12, 15, 24	9	28	70-72
RM-xx12S	RL-xx12S	(H)	1.8, 3.3, 5, 9, 12, 15, 24	12	21	70-72
RM-xx15S	RL-xx15S	(H)	1.8, 3.3, 5, 9, 12, 15, 24	15	17	70-76
RM-xx24S	RL-xx24S	(H)	1.8, 3.3, 5, 9, 12, 15, 24	24	10	70-80

xx = Input Voltage

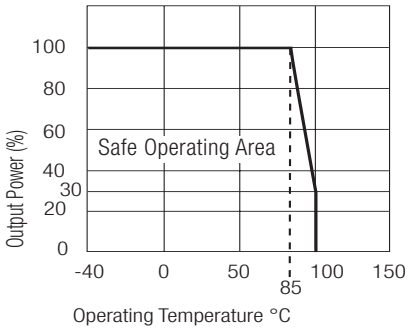
0.25 Watt SIP4 & DIP8 Single Output



Specifications (Core Operating Area)

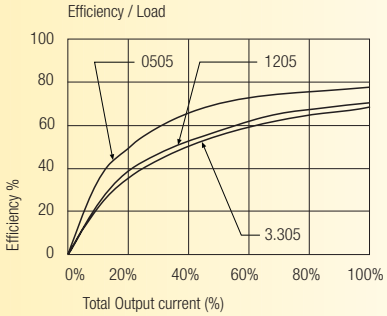
Input Voltage Range			±10%
Output Voltage Accuracy			±5%
Line Voltage Regulation			1.2%/1% of Vin max.
Load Voltage Regulation (10% to 100% full load)		1.8V, 3.3V output types 5V output type 9V, 12V, 15V, 24V output types	20% max. 15% max. 10% max.
Output Ripple and Noise (20MHz limited)			50mVp-p max.
Operating Frequency			50kHz min. / 90kHz typ. / 105kHz max.
Efficiency at Full Load			65% min. / 75% typ.
No Load Power Consumption			45mW min. / 75mW typ. / 105mW max.
Isolation Voltage Rated Working Voltage		(tested for 1 second) (long term isolation)	1.000VDC min. see Application Notes
Isolation Voltage Rated Working Voltage	H-Suffix H-Suffix	(tested for 1 second) (long term isolation)	2.000VDC min. see Application Notes
Isolation Capacitance			25pF min. / 82pF 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
Relative Humidity		MSL Level 1	95% RH
Package Weight		RM types	1.4g
		RL types	1.8g
MTBF (+25°C) (+85°C) } *Detailed Information see Application Notes chapter "MTBF"*		using MIL-HDBK 217F using MIL-HDBK 217F	1327 x 10^3 hours 302 x 10^3 hours

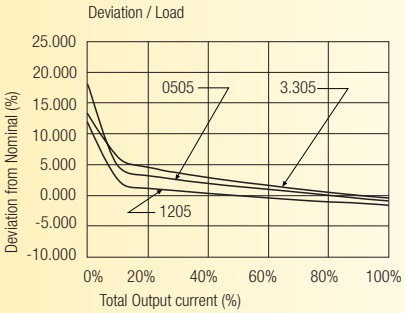
Derating-Graph
(Ambient Temperature)



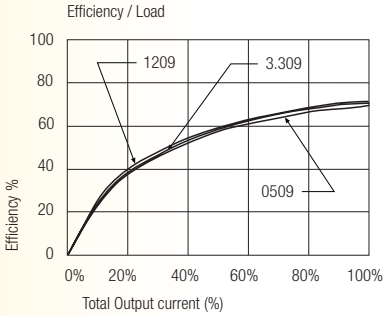
Typical Characteristics

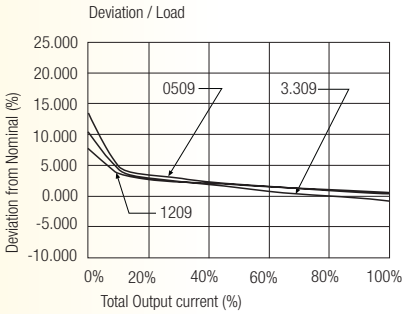
RM/RL-xx05S



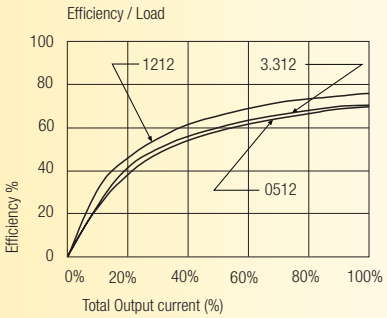


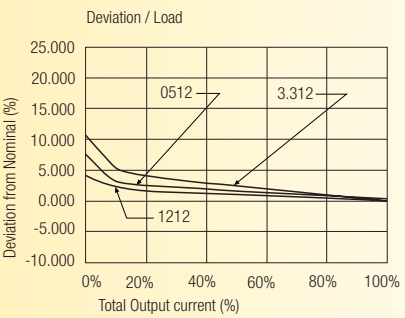
RM/RL-xx09S



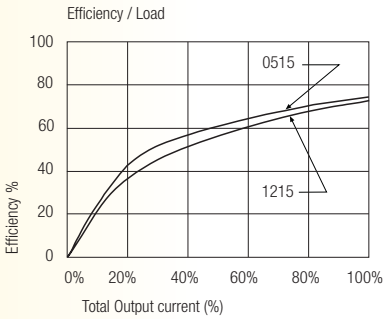


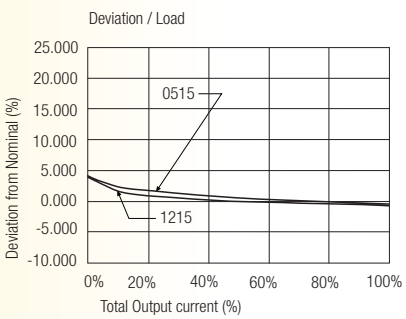
RM/RL-xx12S





RM/RL-xx15S

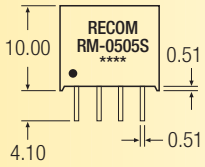


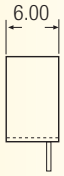


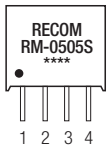
Package Style and Pinning (mm)

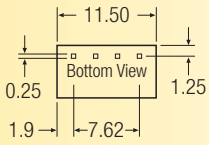
3rd angle projection

4 PIN SIP Package

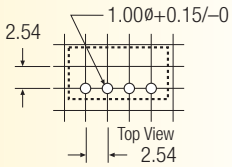








Recommended Footprint Details

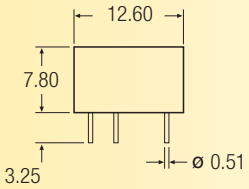


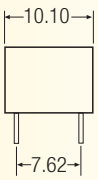
RM Pin Connections

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

XX.X ± 0.5 mm
XX.XX ± 0.25 mm

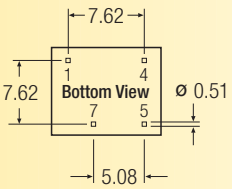
8 PIN DIP Package

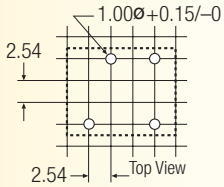






Recommended Footprint Details





RL Pin Connections

Pin #	Single
1	–Vin
4	+Vin
5	+Vout
7	–Vout

XX.X ± 0.5 mm
XX.XX ± 0.25 mm