

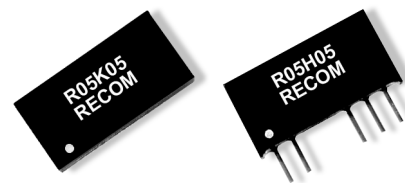
# EUROLINE - DC/DC-Converter

RxxG/H and RxxJ/K Series, 1 Watt, DIP14/SIP7, 3kVDC Isolation (Single & Dual Output)

# RECOM

## Features

- Wide Temperature Performance at full 1 Watt Load,  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- 3kVDC Isolation
- Efficiency to 80%
- UL 94V-0 Package Material
- Internal SMD Construction
- MTTF up to 2.9 Million Hours
- Power Sharing on Dual Output



## Selection Guide 5V, 12 V, 24V and 48V input types

Part Number	Nom. Input Voltage (VDC)	Rated Output Voltage (VDC)	Rated Output Current (mA)	Efficiency (%)	Isolation Capacitance (pF)	Package Style
<b>Single Output Types</b>						
RxxJ05	5/12	5	200	68	23	DIP14
RxxJ09	5/12	9	111	75	30	
RxxJ12	5/12	12	84	77	26	
RxxJ15	5/12	15	67	78	27	
RxxJ05	24/48	5	200	70	33/48	DIP14
RxxJ09	24/48	9	111	80/70	40/59	
RxxJ12	24/48	12	84	80/70	55/70	
RxxJ15	24/48	15	67	80/70	70/81	
RxxK05	5/12	5	200	68	23	SIP7
RxxK09	5/12	9	111	75	30	
RxxK12	5/12	12	84	77	26	
RxxK15	5/12	15	67	78	27	SIP7
RxxK05	24/48	5	200	70	33/48	
RxxK09	24/48	9	111	80/70	40/59	
RxxK12	24/48	12	84	80/70	55/70	
RxxK15	24/48	15	67	80/70	70/81	
<b>Dual Output Types</b>						
RxxG05	5/12	$\pm 5$	$\pm 100$	71	27	DIP14
RxxG09	5/12	$\pm 9$	$\pm 55$	74	35	
RxxG12	5/12	$\pm 12$	$\pm 42$	75	42	
RxxG15	5/12	$\pm 15$	$\pm 33$	76	41	
RxxG05	24/48	$\pm 5$	$\pm 100$	80/70	45	DIP14
RxxG09	24/48	$\pm 9$	$\pm 55$	70	52/58	
RxxG12	24/48	$\pm 12$	$\pm 42$	70	65/68	
RxxG15	24/48	$\pm 15$	$\pm 33$	70	70/75	
RxxH05	5/12	$\pm 5$	$\pm 100$	71	27	SIP7
RxxH09	5/12	$\pm 9$	$\pm 55$	74	35	
RxxH12	5/12	$\pm 12$	$\pm 42$	75	42	
RxxH15	5/12	$\pm 15$	$\pm 33$	76	41	
RxxH05	24/48	$\pm 5$	$\pm 100$	70/80	45	SIP7
RxxH09	24/48	$\pm 9$	$\pm 55$	70	52/58	
RxxH12	24/48	$\pm 12$	$\pm 42$	70	65/68	
RxxH15	24/48	$\pm 15$	$\pm 33$	70	70/75	

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## Absolute Maximum Ratings

Input Voltage $V_{IN}$	5V types 12V types 24V types 48V types	7V typ. 15V typ. 24V typ. 48V typ.
Short Circuit Duration <sup>1)</sup>		1s
Internal Power Dissipation		560mW
Lead Temperature (1.5 mm from case for 10 seconds)		300 °C

<sup>1)</sup> Supply voltage must be discontinued at the end of the short circuit duration.

## Electrical Specifications (measured at $T_A = 25^\circ\text{C}$ , at nominal input voltage and rated output current unless otherwise specified)

Input Voltage Range $V_{IN}$ (continuous operation)	5V input types 12V input types 24V input types 48V input types	4.5VDC min./ 5.5VDC max. 10.8VDC min./ 13.2VDC max. 28VDC max. 54VDC max.
Reflected Ripple Current (depending on the type)		20 mA p-p min. to 40 mA p-p max.
Voltage Set Point Accuracy		See Tolerance Envelope
Line Regulation		1.0% / 1.2% of $V_{IN}$
Load Voltage Regulation (10% load to 100% full load)	single output types dual output types	6.7% min. / 15% max. 6.8% min. / 10% max.
Ripple & Noise (20MHz band limited)	single output types dual output types	32mVp-p min. / 80mVp-p max. 24mVp-p min. / 40mVp-p max.
Isolation Voltage (for 1 minute)		3000VDC min.
Test Voltage (50Hz, 10 seconds)		3000 Vpk min.
Resistance (Viso = 1000V)		10 G $\Omega$ typ.
Switching Frequency at Full Load (depending on the type)	$V_{IN}$ 5V output types $V_{IN}$ 12V output types $V_{IN}$ 24V output types $V_{IN}$ 48V output types	120kHz min. / 135kHz max. 150kHz min. / 170kHz max. 150kHz max. 150kHz max.
Package Weight		2.11 g
Operating Temperature Range (all output types)		-40°C min. to +85°C max. (see graph)
Storage Temperature Range		-50°C min. +125°C max.
Case Temperature Above Ambient (depending on the type)	5V output types all other output types	+28°C max. +25°C max.
MTTF <sup>1)</sup> (depending on the type)	-40°C, single output types +25°C, single output types +85°C, single output types -40°C, dual output types +25°C, dual output types +85°C, dual output types	303kHrs min. / 2938kHrs max. 252kHrs min. / 2414kHrs max. 212kHrs min. / 1961kHrs max. 185kHrs min. / 2068kHrs max. 154kHrs min. / 1697kHrs max. 130kHrs min. / 1368kHrs max.

<sup>1)</sup> Calculated using MIL-HDBK-217F with nominal input voltage at full load.

Please contact us, if you need exact parameters for the converter you have selected.

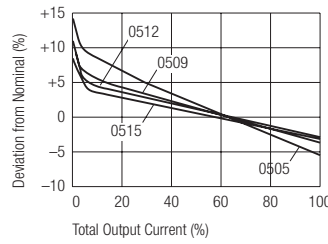
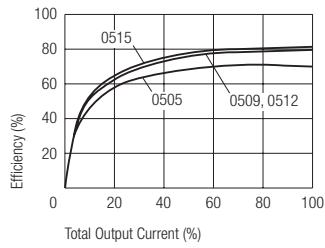
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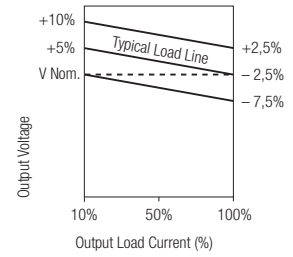
# RECOM

## Typical Characteristics, Tolerance Envelope and Temperature Derating Graph

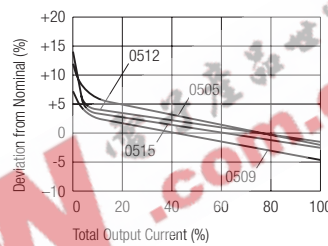
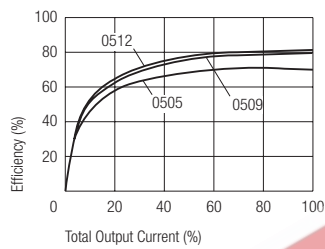
### R05G/H/J/Kxx Single Output Types



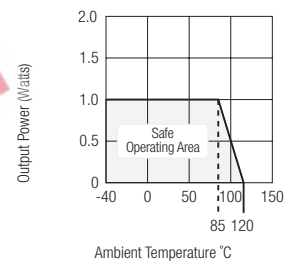
### Tolerance Envelope



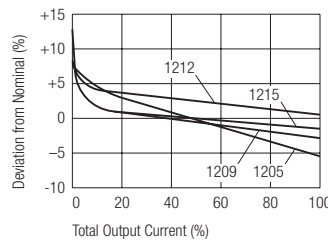
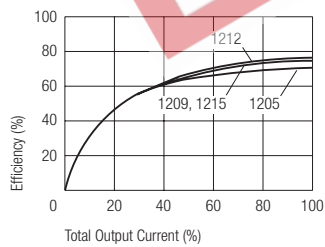
### R05G/H/J/Kxx Dual Output Types



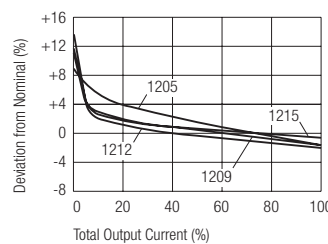
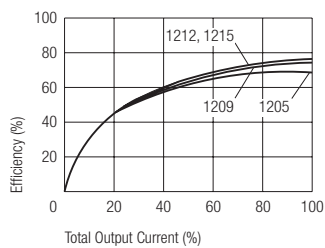
### Temperature Derating Graph



### R012G/H/J/Kxx Single Output Types



### R012G/H/J/Kxx Dual Output Types



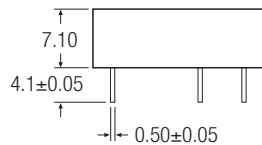
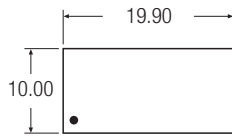
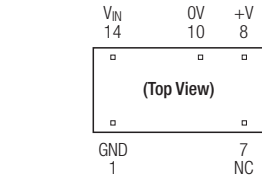
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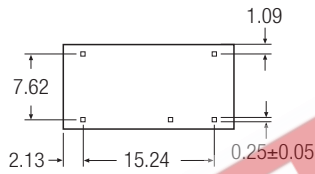
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## Package Style and Pinning (mm)

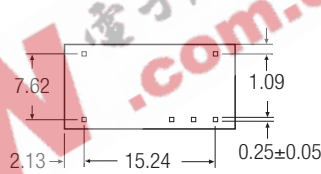
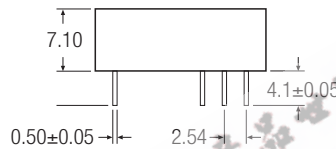
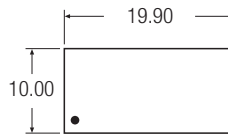
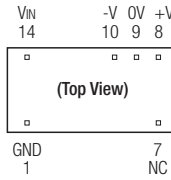
### 14 Pin, Single Output



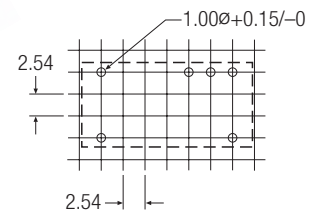
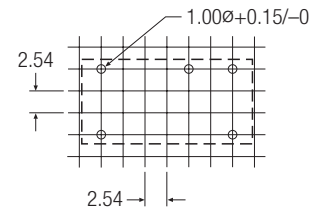
<sup>1</sup> 7.70 mm for 48V variants



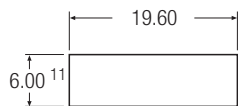
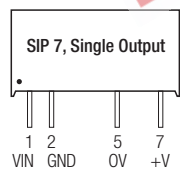
### 14 Pin, Dual Output



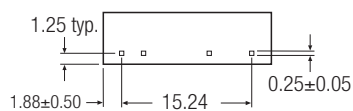
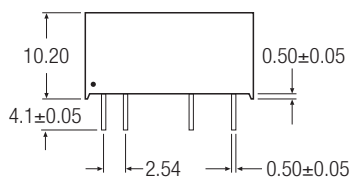
### Recommended Footprint Details



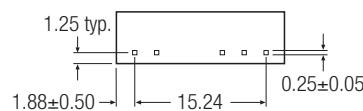
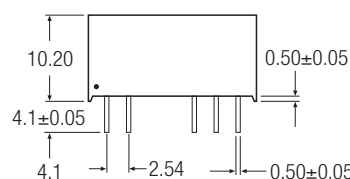
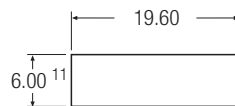
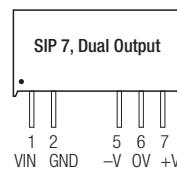
### 7 Pin, Single Output



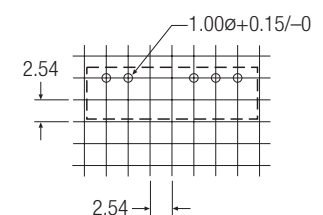
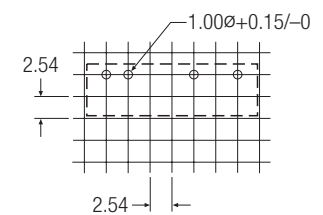
<sup>11</sup> 7.50 mm for 48V variants



### 7 Pin, Dual Output



### Recommended Footprint Details



XXX ± 0.5 mm  
XX.XX ± 0.25 mm