

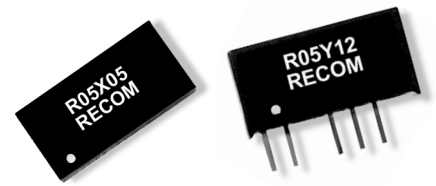
# EUROLINE - DC/DC-Converter

RxxX and RxxY Series, 1 Watt, SIP7/DIP14, Regulated / Isolated (Single Output)

# RECOM

## Features

- 1kVDC Isolation
- Efficiency to 62%
- UL 94V-0 Package Material
- Internal SMD Construction
- Toroidal Magnetics
- Fully Encapsulated
- MTTF up to 2.4 Million Hours
- Output Regulation <1.5%



## Selection Guide

Part Number	Output Voltage (VDC)	Output Current (mA)	Power Out (mW)	Package Style
<b>Flash PROM types</b>				
R05X12	12	83	1000	DIP14
R05Y12	12	83	1000	SIP7
R05X13	12.75	78	1000	DIP14
R05Y13	12.75	78	1000	SIP7
<b>5V and 12V input types</b>				
RxxX05	5	100	500	DIP14
RxxX09	9	100	900	
RxxX12	12	83	1000	
RxxX15	15	67	1000	
RxxY05	5	100	500	SIP7
RxxY09	9	100	900	
RxxY12	12	83	1000	
RxxY15	15	67	1000	
<b>24V and 48V input types</b>				
RxxX05	5	100	500	DIP14
RxxX09	9	100	900	
RxxX12	12	83	1000	
RxxX15	15	67	1000	
RxxY05	5	100	500	SIP7
RxxY09	9	100	900	
RxxY12	12	83	1000	
RxxY15	15	67	1000	

## Absolute Maximum Ratings Over Operating Free Air Temperature Range

Input Voltage $V_{IN}$	5V types	7V
	12V types	15V
	24V types	28V
	48V types	54V
Output Power Total		1W
Short Circuit Duration		1s
Maximum Output Voltage Rise Time (after control pin high)		35 $\mu$ s
Isolation Voltage (flash tested for 1 second)		1000VDC
Operating Free Air Temperature Range (requires a minimum of 10 mm air space around the component)		0°C to 70°C (see derating curve)
Storage Temperature Range		-55°C to 150°C
Lead Temperature (1.5 mm from case for 10 seconds)		300 °C

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## Typical Isolation Capacitance (pF)

Part Number	Output Voltage (V)				
	05	09	12	13	15
R05X/Yxx	28	32	33	31	39
R12X/Yxx	48	63	68	–	69
R24X/Yxx	84	106	132	–	152
R48X/Yxx	54	75	92	–	109

## 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 types	5V±5%
	12V types	12V±5%
	24V types	24V±5%
	48V types	48V±5%
Load Voltage Regulation (10% load to 100% full load)		0.9% typ. / 1.5% max.
Line Voltage Regulation (depending on the Type)		0.25% / 1.0% of $V_{IN}$
Output Voltage Accuracy (control pin open circuit)		±5%
Input Reflected Ripple (20MHz band limited)		40mVp-p max.
Output Ripple (20MHz band limited)		60mVp-p max.
Insulation Resistance (at 500VDC)		100M $\Omega$ min.
Efficiency (at full load)	5V output types	45% min. / 50% typ.
	9V, 12V and 15V output types	55% min. / 62% typ.
Temperature Drift ( $V_{OUT}$ )		0.03% per °C max.
Temperature Rise above Ambient (at full load)		8°C max.
Switching Frequency at Full Load (depending on the type)		80kHz typ.
Package Weight	SIP and DIP 5/12/24V types	2.3 g
	SIP and DIP 48V types	2.9 g
MTTF <sup>1)</sup> (depending on the type)	-25°C	165kHrs min. / 2406kHrs max.
	+25°C	135kHrs min. / 1307kHrs max.
	+70°C	69kHrs min. / 144kHrs 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.

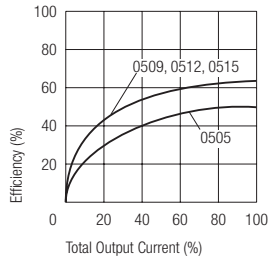
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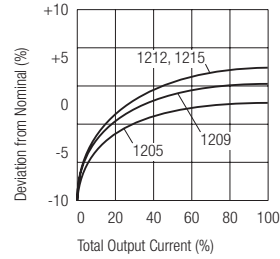
RECOM

## Typical Characteristics, Tolerance Envelope and Temperature Derating Graph

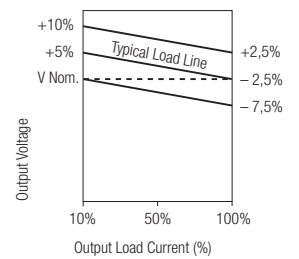
R05Y/Xxx



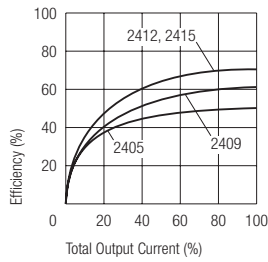
R12Y/Xxx



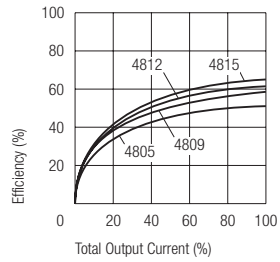
Tolerance Envelope



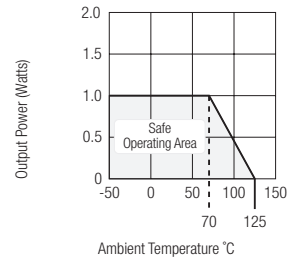
R24Y/Xxx



R48Y/Xxx

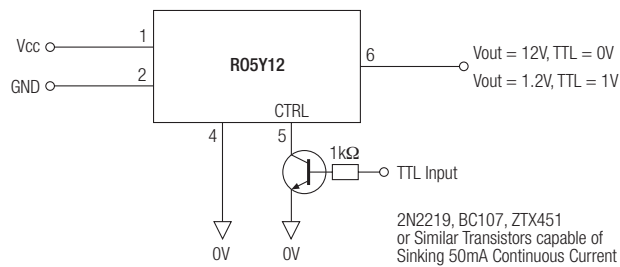


Temperature Derating Graph

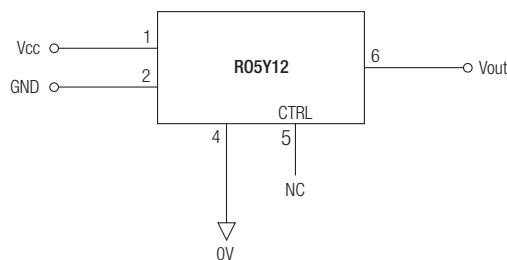


## Typical Applications

### Flash PROM Programming Voltage Control



### Normal Isolated Regulated Output



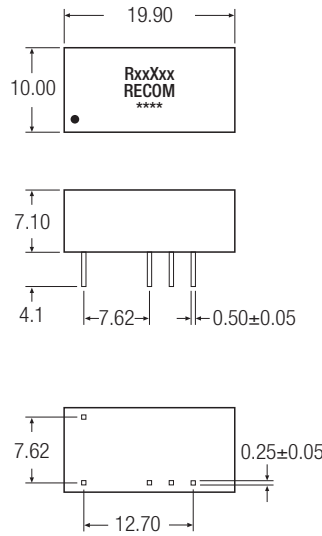
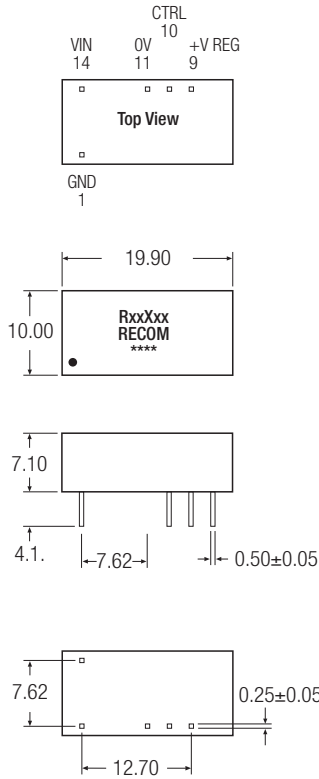
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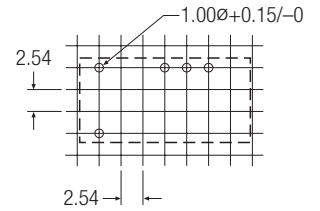
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## Package Style and Pinning (mm)

### 14 Pin DIP Package Style

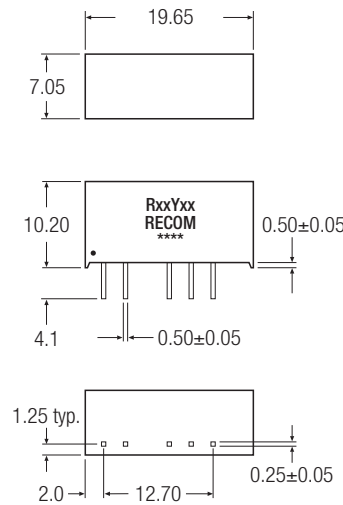
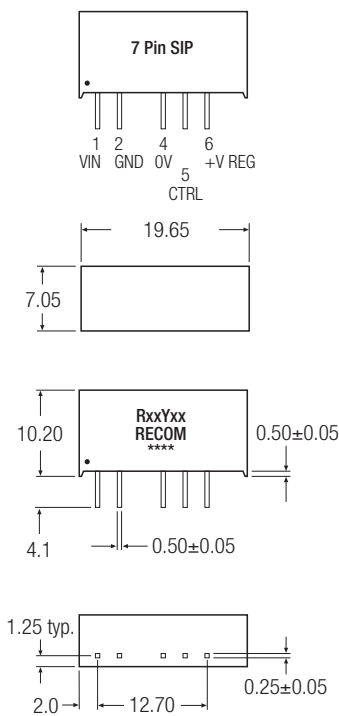


### Recommended Footprint Details



XX.X ± 0.5 mm  
XX.XX ± 0.25 mm

### 7 Pin SIP Package Style



### Recommended Footprint Details

