

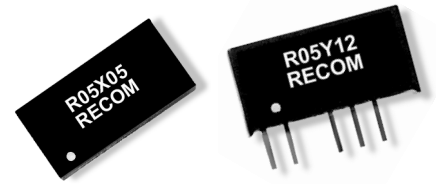
EUROLINE - DC/DC-Converter

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 |
|--------------------------------|----------------------|---------------------|----------------|---------------|
| Flash PROM types | | | | |
| R05X12 | 12 | 83 | 1000 | DIP14 |
| R05Y12 | 12 | 83 | 1000 | SIP7 |
| R05X13 | 12.75 | 78 | 1000 | DIP14 |
| R05Y13 | 12.75 | 78 | 1000 | SIP7 |
| 5V and 12V input types | | | | |
| RxxX05 | 5 | 100 | 500 | DIP14 |
| RxxX09 | 9 | 100 | 900 | |
| RxxX12 | 12 | 83 | 1000 | |
| RxxX15 | 15 | 67 | 1000 | SIP7 |
| RxxY05 | 5 | 100 | 500 | |
| RxxY09 | 9 | 100 | 900 | |
| RxxY12 | 12 | 83 | 1000 | |
| RxxY15 | 15 | 67 | 1000 | |
| 24V and 48V input types | | | | |
| RxxX05 | 5 | 100 | 500 | DIP14 |
| RxxX09 | 9 | 100 | 900 | |
| RxxX12 | 12 | 83 | 1000 | |
| RxxX15 | 15 | 67 | 1000 | SIP7 |
| RxxY05 | 5 | 100 | 500 | |
| 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 μ 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 \pm 5% |
| | 12V types | 12V \pm 5% |
| | 24V types | 24V \pm 5% |
| | 48V types | 48V \pm 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) | | \pm 5% |
| Input Reflected Ripple (20MHz band limited) | | 40mVp-p max. |
| Output Ripple (20MHz band limited) | | 60mVp-p max. |
| Insulation Resistance (at 500VDC) | | 100M Ω 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 $^\circ\text{C}$ max. |
| Temperature Rise above Ambient (at full load) | | 8 $^\circ\text{C}$ 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 ¹⁾ (depending on the type) | -25 $^\circ\text{C}$ | 165kHrs min. / 2406kHrs max. |
| | +25 $^\circ\text{C}$ | 135kHrs min. / 1307kHrs max. |
| | +70 $^\circ\text{C}$ | 69kHrs min. / 144kHrs max. |

¹⁾ 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.

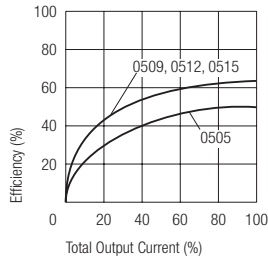
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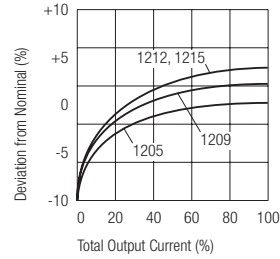
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Typical Characteristics, Tolerance Envelope and Temperature Derating Graph

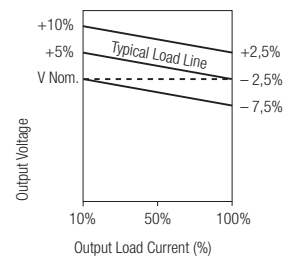
R05Y/Xxx



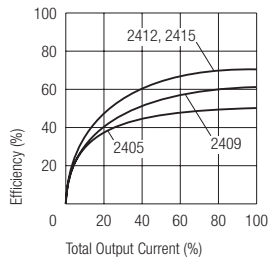
R12Y/Xxx



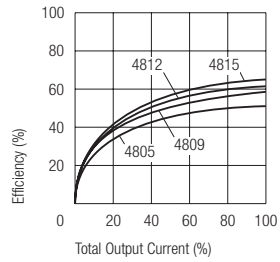
Tolerance Envelope



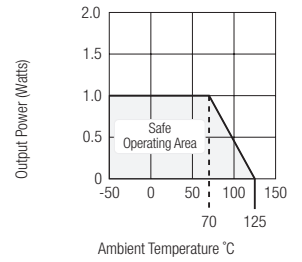
R24Y/Xxx



R48Y/Xxx

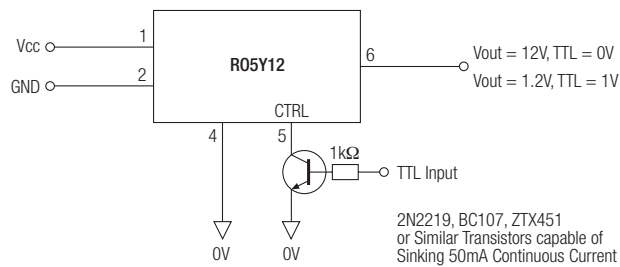


Temperature Derating Graph

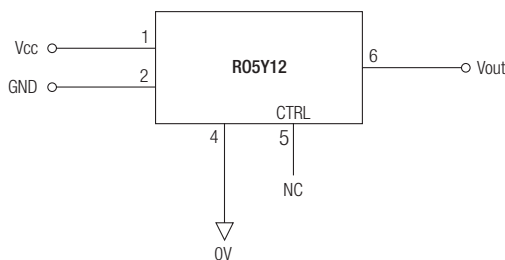


Typical Applications

Flash PROM Programming Voltage Control



Normal Isolated Regulated Output



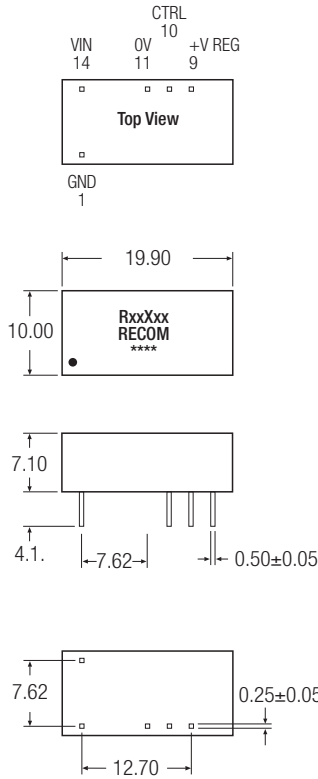
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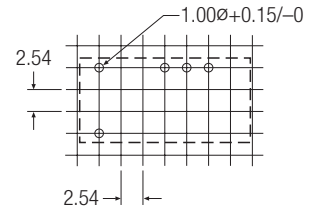
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Package Style and Pinning (mm)

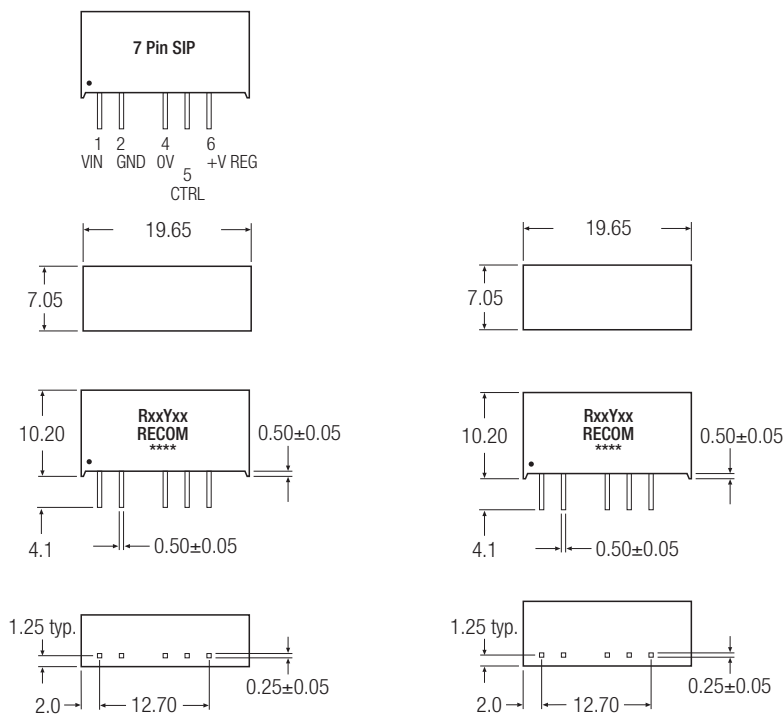
14 Pin DIP Package Style



Recommended Footprint Details



7 Pin SIP Package Style



Recommended Footprint Details

