

EUROLINE - DC/DC-Converter

RxxSDxx Series, 1 Watt, SMD, 1kVDC Isolation (Dual Output)

RECOM

Features

- Wide Temperature Performance at full 1 Watt Load, -40°C to $+85^{\circ}\text{C}$
- 1kVDC Isolation
- Efficiency to 78%
- UL 94V-0 Package Material
- Internal SMD Construction
- MTTF up to 2.1 Million Hours
- Power Sharing on Dual Output



Selection Guide 5V and 12V input types

| Part Number | Nom. Input Voltage (VDC) | Rated Output Voltage (VDC) | Rated Output Current (mA) | Input Current at Rated Load (mA) | Efficiency (%) | Isolation Capacitance (pF) | Package Style |
|-------------|--------------------------|----------------------------|---------------------------|----------------------------------|----------------|----------------------------|---------------|
| R05SD05 | 5 | ± 5 | ± 100 | 290 | 69 | 33 | SMD 18 Pin |
| R05SD09 | 5 | ± 9 | ± 55 | 267 | 75 | 38 | |
| R05SD12 | 5 | ± 12 | ± 42 | 260 | 77 | 44 | |
| R05SD15 | 5 | ± 15 | ± 33 | 256 | 78 | 43 | |
| R12SD05 | 12 | ± 5 | ± 100 | 121 | 69 | 50 | |
| R12SD09 | 12 | ± 9 | ± 55 | 113 | 74 | 72 | |
| R12SD12 | 12 | ± 12 | ± 42 | 111 | 75 | 89 | |
| R12SD15 | 12 | ± 15 | ± 33 | 110 | 76 | 100 | |

Absolute Maximum Ratings

| | | |
|--|-----------------------|-----------|
| Input Voltage V_{IN} | 5V types 12V types | 7V 15V |
| Short Circuit Duration ¹⁾ | | 1s |
| Internal Power Dissipation | | 550mW |
| Lead Temperature (1.5 mm from case for 10 seconds) | | 300 °C |

¹⁾ 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)

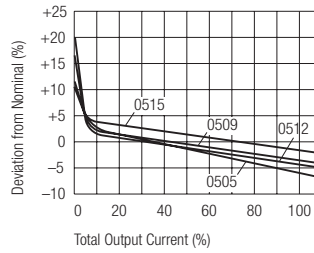
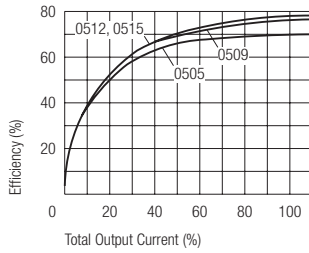
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|--|--|--|
| Input Voltage Range V_{IN} (continuous operation) | 5V input types 12V input types | 4.5VDC min. / 5.5VDC max. 10.8VDC min. / 13.2VDC max. |
| Reflected Ripple Current (depending on the type) | | 41 mA p-p min. to 47 mA p-p max. |
| Voltage Set Point Accuracy | | See Tolerance Envelope |
| Line Regulation | | 1.0% / 1.2% of V_{IN} |
| Load Voltage Regulation (10% load to rated load) | 5V output types 9V output types 12V output types 15V output types | 10% min. / 12% max. 6.5% min. / 8.0% max. 6.0% min. / 8.5% max. 6.0% min. / 7.0% max. |
| Ripple & Noise (20MHz band limited), (depending on the type) | | 35mVp-p min. / 110mVp-p max. |
| Isolation Voltage (flash tested for 1 second) | | 1000VDC min. |
| Test Voltage (50Hz, 10 seconds) | | 1000 Vpk min. |
| Resistance ($V_{iso} = 1000\text{V}$) | | 10 G Ω min. |
| Switching Frequency at Full Load | V_{IN} all types | 115kHz typ. |
| Package Weight | | 1.53 g |
| Operating Temperature Range (all output types) | | -40°C min. to $+85^{\circ}\text{C}$ max. (see graph) |
| Storage Temperature Range | | -55°C min. $+125^{\circ}\text{C}$ max. |
| Case Temperature above Ambient (depending on the type) | 5V output types all other types | $+46^{\circ}\text{C}$ max. $+35^{\circ}\text{C}$ max. |
| MTTF ²⁾ (depending on the type) | -40°C $+25^{\circ}\text{C}$ $+85^{\circ}\text{C}$ | 184kHrs min. / 2068kHrs max. 154kHrs min. / 1697kHrs max. 129kHrs min. / 1368kHrs max. |

²⁾ Calculated using MIL-HDBK-217F with nominal input voltage at full load.

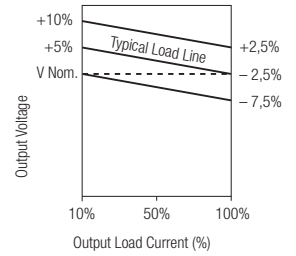
Please contact us, if you need exact parameters for the converter you have selected..

Typical Characteristics, Tolerance Envelope and Temperature Derating Graph

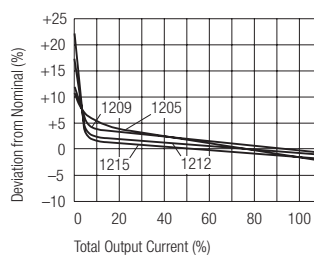
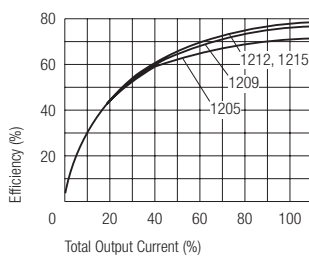
R05SDxx



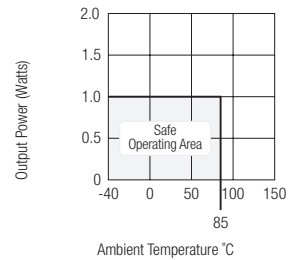
Tolerance Envelope



R12SDxx

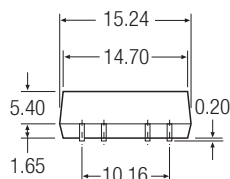
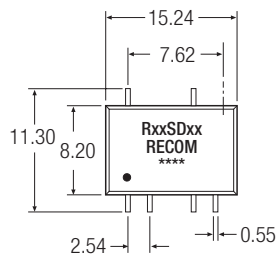
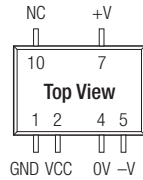


Temperature Derating Graph

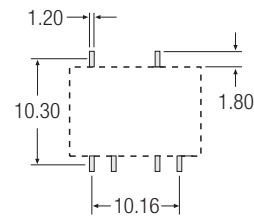


Package Style and Pinning (mm)

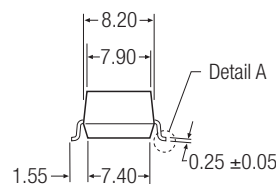
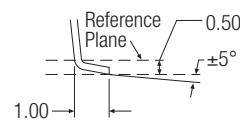
10 Pin SMD Package Style



Recommended Footprint Details



Detail A



XX.X ± 0.5 mm
XX.XX ± 0.25 mm