

# POWERLINE - DC/DC-Converter

D-Series, 3 Watt, DIP24, Regulated & 4:1 Wide Input Range (Single & Dual Output)

# RECOM

## Features

- 3 Watts in DIP24 Package
- 9-36V and 18-75V Input
- Typical Efficiency up to 77%
- Regulated Outputs
- Low Profile, 10.2 mm Height
- No Derating to 71°C
- No other Components required
- MTBF 1.214 x 10<sup>6</sup> Hours
- Over Current Protection, Continuous
- Five-Sided EMI Shield
- 2 Year Warranty
- Standard and SMT-Pinning
- International Safety Standard Approvals
- UL 1950 Component Recognised



## Selection Guide 24V, 48V Input Types

| Part Number | Input Range | Output Voltage | Output Current | Efficiency (%) |
|-------------|-------------|----------------|----------------|----------------|
| RP03-2405SD | 9-36 VDC    | 5 VDC          | 500 mA         | 76             |
| RP03-2412SD | 9-36 VDC    | 12 VDC         | 250 mA         | 79             |
| RP03-2415SD | 9-36 VDC    | 15 VDC         | 200 mA         | 79             |
| RP03-2405DD | 9-36 VDC    | ±5 VDC         | ±250 mA        | 74             |
| RP03-2412DD | 9-36 VDC    | ±12 VDC        | ±125 mA        | 79             |
| RP03-2415DD | 9-36 VDC    | ±15 VDC        | ±100 mA        | 79             |
| RP03-4805SD | 18-75 VDC   | 5 VDC          | 500 mA         | 75             |
| RP03-4812SD | 18-75 VDC   | 12 VDC         | 250 mA         | 79             |
| RP03-4815SD | 18-75 VDC   | 15 VDC         | 200 mA         | 77             |
| RP03-4805DD | 18-75 VDC   | ±5 VDC         | ±250 mA        | 74             |
| RP03-4812DD | 18-75 VDC   | ±12 VDC        | ±125 mA        | 76             |
| RP03-4815DD | 18-75 VDC   | ±15 VDC        | ±100 mA        | 78             |

## Maximum Capacitive Load

|             |        |
|-------------|--------|
| RP03-xx05SD | 1000µF |
| RP03-xx12SD | 170µF  |
| RP03-xx15SD | 110µF  |
| RP03-xx05DD | ±500µF |
| RP03-xx12DD | ±96µF  |
| RP03-xx15DD | ±47µF  |

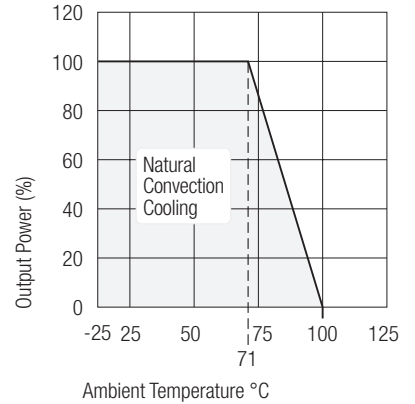
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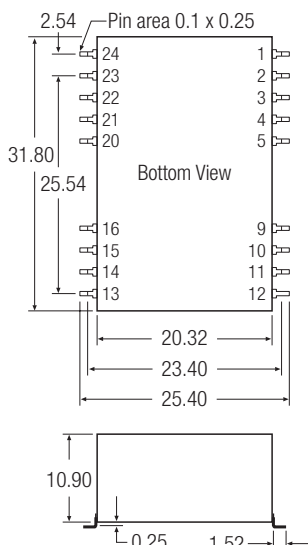
## Specifications (typical at nominal input and 25°C unless otherwise noted)

|  |   |                               |
|--|---|-------------------------------|
| Input Voltage Range  | 24V types nominal<br>48V types nominal        | 9 -36V<br>18-75V              |
| Start Voltage  |   | ≥10V                          |
| Input Filter   |   | Pi Type                       |
| Voltage Accuracy   |   | ±2%                           |
| Voltage Balance, Dual Outputs                                |   | ±2%                           |
| Ripple and Noise, 20MHz BW                                   |   | 50mVp-p                       |
| Line Regulation  | Single Output ±0.2%<br>Dual Output ±0.2%      |                               |
| Load Regulation, FL-1/4FL                                    | Single Output ±0.2%<br>Dual Output ±1%        |                               |
| Temperature Coefficient                                      |   | ±0.02%/°C                     |
| Over Current Protection                                      |   | Continuous                    |
| Control Voltage Referenced to Negative(-)Input Compatibility |   | CMOS, TTL                     |
| ON-Control   |   | 4.8V min, or Open             |
| OFF-Control  |   | 0.4V max. or Short            |
| Switching Frequency  |   | 300kHz, typ.                  |
| Isolation Voltage  |   | 500VDC                        |
| Isolation Resistance   |   | 10 <sup>9</sup> Ω             |
| Isolation Capacitance  |   | 300pF max.                    |
| Operating Temperature Range                                  |   | -25°C to +71°C                |
| Alternative Operating Temperature Suffix "M1"                |   | -40°C to +85°C                |
| Storage Temperature Range                                    |   | -55°C to +125°C               |
| Cooling  |   | Free-air Convection           |
| EMI/RFI  |   | Five-sided Shield             |
| Case Material  | Nickel-Coated Copper with Non-Conductive Base |                               |
| Dimensions   |   | 31.8 x 20.3 x 10.2 mm         |
| MTBF (MIL-HDBK-217F TA = 25°C full load)                     |   | 1.214 x 10 <sup>6</sup> Hours |

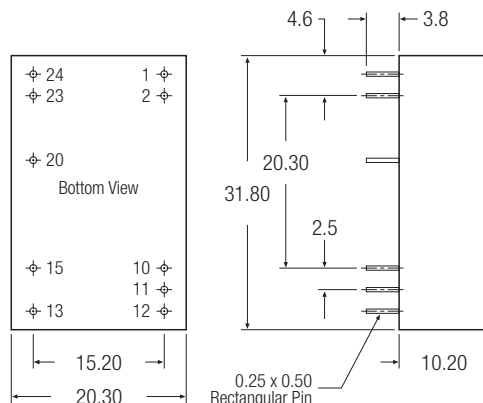


## Package Style and Pinning (mm)

### SMD Package Style



### DIP24 Package Style



### Pin Connections

| Pin # | Single | Dual   |
|-------|--------|--------|
| 1     | +Vin   | +Vin   |
| 2     | +Vin   | +Vin   |
| 10    | NC     | Common |
| 11    | NC     | Common |
| 12    | -Vout  | NC     |
| 13    | +Vout  | -Vout  |
| 15    | NC     | +Vout  |
| 20    | Ctrl   | Ctrl   |
| 23    | -Vin   | -Vin   |
| 24    | -Vin   | -Vin   |

NC = No Connection  
Ctrl = Remote On/Off Control

Pin Pitch Tolerance ±0.35 mm