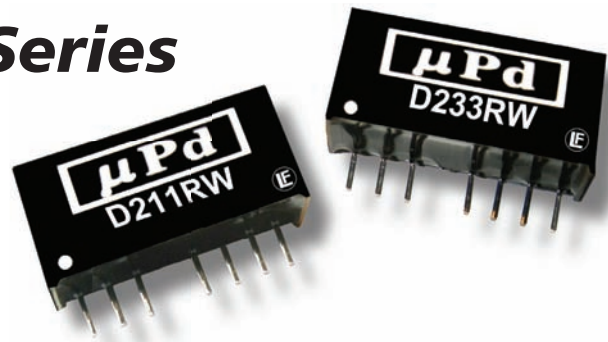


D200RW Series

Miniature SIP, 2W Wide Input Range DC/DC Converters



Key Features:

- 2W Output Power
- 2:1 Input Voltage Range
- 1,000 VDC Isolation
- Short Circuit Protected
- Miniature SIP Case
- Single & Dual Outputs
- 2.7 MH MTBF
- Industry Standard Pin-Out



RoHS Compliant

MicroPower Direct



Electrical Specifications

Specifications typical @ +25°C, nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|--------------------------------|------------------|------|------|-------|----------|
| Input Voltage Range | 5 VDC Input | 4.5 | 5.0 | 9.0 | VDC |
| | 12 VDC Input | 9.0 | 12.0 | 18.0 | |
| | 24 VDC Input | 18.0 | 24.0 | 36.0 | |
| | 48 VDC Input | 36.0 | 48.0 | 72.0 | |
| Input Filter | Capacitor Filter | | | | |
| Input Reflected Ripple Current | | | 35 | | mA P - P |
| Reverse Polarity Input Current | | | | 1.0 | A |
| Short Circuit Input Power | | | | 1,500 | mW |

Output

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|-------------------------|--------------------------------|------|------|-------|----------|
| Output Voltage Accuracy | | | ±2.0 | | % |
| Output Voltage Balance | | | | ±2.0 | % |
| Line Regulation | V _{in} = Min to Max | | | ±0.5 | % |
| Load Regulation | I _{out} = 25% to 100% | | | ±1.0 | % |
| Ripple & Noise (20 MHz) | | | | 80 | mV P - P |
| Output Power Protection | | 120 | | | % |
| Temperature Coefficient | | | | ±0.02 | %/°C |
| Output Short Circuit | Continuous (Autorecovery) | | | | |

General

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|-----------------------|-------------|-------|------|------|-------|
| Isolation Voltage | 60 Seconds | 1,000 | | | VDC |
| Isolation Resistance | 1,000 VDC | 1,000 | | | MΩ |
| Isolation Capacitance | 100 kHz, 1V | | 60 | | pF |
| Switching Frequency | | 100 | | 650 | kHz |

Environmental

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|---------------------|------|------|------|-------|
| Operating Temperature Range | Ambient | -40 | +25 | +85 | °C |
| Operating Temperature Range | Case | | | +100 | °C |
| Storage Temperature Range | | -40 | | +125 | °C |
| Cooling | Free Air Convection | | | | |
| Humidity | RH, Non-condensing | | | 95 | % |

Physical

| | |
|---------------|---|
| Case Size | 0.86 x 0.36 x 0.44 Inches (21.89 x 9.2 x 11.2 mm) |
| Case Material | Non-Conductive Black Plastic (UL94-V0) |
| Weight | 0.17 Oz (4.8g) |

Remote On/Off

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|-------------------|------------|------|------|------|-------|
| Unit On (Note 2) | | 0 | | 0.8 | VDC |
| Unit Off (Note 2) | | | | 5.0 | VDC |
| Off Idle Current | | | 5.0 | | mA |

Reliability Specifications

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|-----------|---------------------------------|------|------|------|--------|
| MTBF | MIL HDBK 217F, 25°C, Gnd Benign | 2.73 | | | MHours |

Absolute Maximum Ratings


| Parameter | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|-----------------------------|------|------|-------|-------|
| Input Voltage Surge (1 Sec) | 5 VDC Input | -0.7 | | 12.0 | VDC |
| | 12 VDC Input | -0.7 | | 24.0 | |
| | 24 VDC Input | -0.7 | | 40.0 | |
| | 48 VDC Input | -0.7 | | 80.0 | |
| Lead Temperature | 1.5 mm From Case For 10 Sec | | | 260 | °C |
| Internal Power Dissipation | All Models | | | 1,800 | mW |

Caution: Exceeding Absolute Maximum Ratings may damage the module. These are not continuous operating ratings.

Model Selection Guide

| Model Number | Input | | | | Output | | | Efficiency (% Typ) | Capacitive Load (μF , Max) | Fuse Rating Slow-Blow (mA) |
|--------------|---------------|-------------|--------------|---------|---------------|-------------------|-------------------|--------------------|--|----------------------------|
| | Voltage (VDC) | | Current (mA) | | Voltage (VDC) | Current (mA, Max) | Current (mA, Min) | | | |
| | Nominal | Range | Full-Load | No-Load | | | | | | |
| D201RW | 5 | 4.5 - 9.0 | 492 | 15 | 3.3 | 500.0 | 125.0 | 67 | 3,300 | 1,500 |
| D202RW | 5 | 4.5 - 9.0 | 571 | 15 | 5.0 | 400.0 | 100.0 | 70 | 3,300 | 1,500 |
| D203RW | 5 | 4.5 - 9.0 | 555 | 30 | 12.0 | 167.0 | 42.0 | 72 | 470 | 1,500 |
| D204RW | 5 | 4.5 - 9.0 | 547 | 30 | 15.0 | 133.0 | 33.0 | 73 | 470 | 1,500 |
| D205RW | 5 | 4.5 - 9.0 | 571 | 20 | ± 5.0 | ± 200.0 | ± 50.0 | 70 | $\pm 1,000$ | 1,500 |
| D206RW | 5 | 4.5 - 9.0 | 533 | 25 | ± 12.0 | ± 83.0 | ± 21.0 | 75 | ± 220 | 1,500 |
| D207RW | 5 | 4.5 - 9.0 | 533 | 25 | ± 15.0 | ± 67.0 | ± 17.0 | 75 | ± 220 | 1,500 |
| D208RW | 5 | 4.5 - 9.0 | 563 | 60 | ± 24.0 | ± 42.0 | ± 10.0 | 71 | ± 100 | 1,500 |
| D211RW | 12 | 9.0 - 18.0 | 205 | 15 | 3.3 | 500.0 | 125.0 | 67 | 3,300 | 700 |
| D212RW | 12 | 9.0 - 18.0 | 216 | 15 | 5.0 | 400.0 | 100.0 | 77 | 3,300 | 700 |
| D213RW | 12 | 9.0 - 18.0 | 208 | 15 | 12.0 | 167.0 | 42.0 | 80 | 470 | 700 |
| D214RW | 12 | 9.0 - 18.0 | 213 | 15 | 15.0 | 133.0 | 33.0 | 78 | 470 | 700 |
| D215RW | 12 | 9.0 - 18.0 | 222 | 15 | ± 5.0 | ± 200.0 | ± 50.0 | 75 | $\pm 1,000$ | 700 |
| D216RW | 12 | 9.0 - 18.0 | 208 | 15 | ± 12.0 | ± 83.0 | ± 21.0 | 80 | ± 220 | 700 |
| D217RW | 12 | 9.0 - 18.0 | 210 | 15 | ± 15.0 | ± 67.0 | ± 17.0 | 79 | ± 220 | 700 |
| D218RW | 12 | 9.0 - 18.0 | 219 | 30 | ± 24.0 | ± 42.0 | ± 10.0 | 76 | ± 100 | 700 |
| D221RW | 24 | 18.0 - 36.0 | 98 | 8 | 3.3 | 500.0 | 125.0 | 70 | 3,300 | 350 |
| D222RW | 24 | 18.0 - 36.0 | 108 | 8 | 5.0 | 400.0 | 100.0 | 77 | 3,300 | 350 |
| D223RW | 24 | 18.0 - 36.0 | 104 | 8 | 12.0 | 167.0 | 42.0 | 80 | 470 | 350 |
| D224RW | 24 | 18.0 - 36.0 | 104 | 8 | 15.0 | 133.0 | 33.0 | 80 | 470 | 350 |
| D225RW | 24 | 18.0 - 36.0 | 106 | 8 | ± 5.0 | ± 200.0 | ± 50.0 | 78 | $\pm 1,000$ | 350 |
| D226RW | 24 | 18.0 - 36.0 | 104 | 8 | ± 12.0 | ± 83.0 | ± 21.0 | 80 | ± 220 | 350 |
| D227RW | 24 | 18.0 - 36.0 | 104 | 8 | ± 15.0 | ± 67.0 | ± 17.0 | 80 | ± 220 | 350 |
| D228RW | 24 | 18.0 - 36.0 | 106 | 20 | ± 24.0 | ± 42.0 | ± 10.0 | 78 | ± 100 | 350 |
| D231RW | 48 | 36.0 - 72.0 | 48 | 6 | 3.3 | 500.0 | 125.0 | 71 | 3,300 | 135 |
| D232RW | 48 | 36.0 - 72.0 | 56 | 6 | 5.0 | 400.0 | 100.0 | 74 | 3,300 | 135 |
| D233RW | 48 | 36.0 - 72.0 | 53 | 6 | 12.0 | 167.0 | 42.0 | 78 | 470 | 135 |
| D234RW | 48 | 36.0 - 72.0 | 53 | 6 | 15.0 | 133.0 | 33.0 | 78 | 470 | 135 |
| D235RW | 48 | 36.0 - 72.0 | 56 | 6 | ± 5.0 | ± 200.0 | ± 50.0 | 74 | $\pm 1,000$ | 135 |
| D236RW | 48 | 36.0 - 72.0 | 53 | 6 | ± 12.0 | ± 83.0 | ± 21.0 | 79 | ± 220 | 135 |
| D237RW | 48 | 36.0 - 72.0 | 52 | 6 | ± 15.0 | ± 67.0 | ± 17.0 | 80 | ± 220 | 135 |
| D238RW | 48 | 36.0 - 72.0 | 55 | 12 | ± 24.0 | ± 42.0 | ± 10.0 | 75 | ± 100 | 135 |

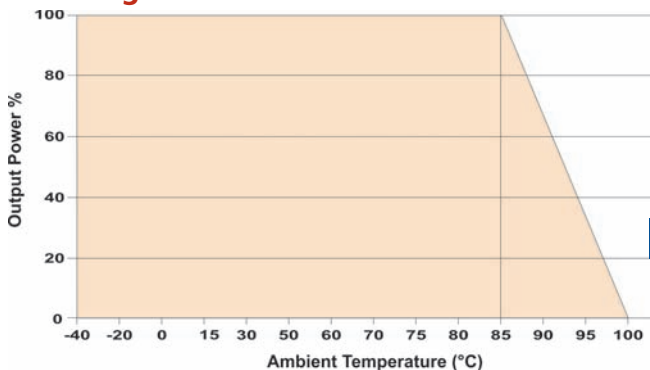
Other input/output combinations are available (i.e. 9.0 VDC). Contact the factory for details at:


COMPUMESS ELEKTRONIK
 CompuMess Elektronik GmbH • Lise-Meitner-Str. 1 • D-85716 Unterschleißheim
 Telefon (089) 32 15 01-0 • Telefax (089) 32 15 01-11
 info@compumess.de • www.compumess.de • www.netzteile.de

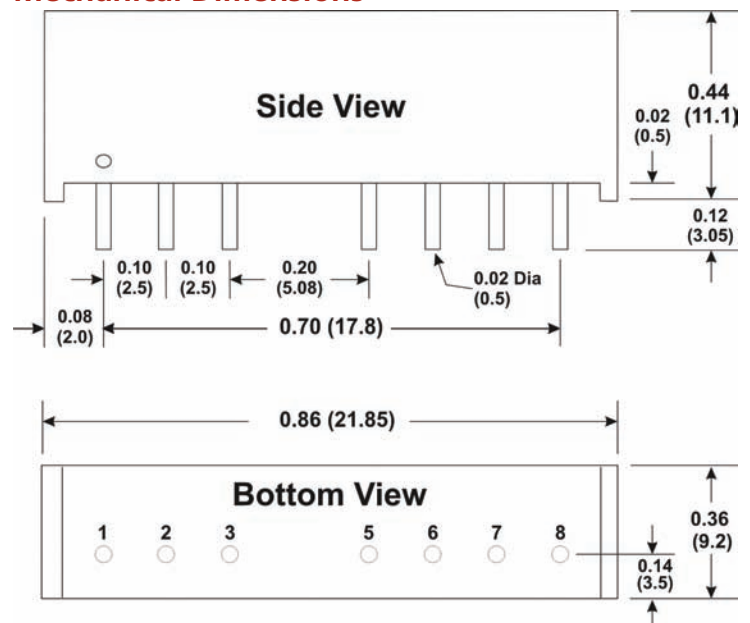
Notes:

1. An external capacitor should be placed from the +Vout pin to the -Vout pin for single output units and from each output to common for dual output units. For single output units a 100 μF is recommended, for dual output models $\pm 48 \mu\text{F}$ should be used.
2. The Remote On/Off Control input (Pin 3) is referenced to -Vin (Pin 1). Connection to the pin should be made through a 1k Ω resistor and diode (1N4148). If it is not used, the control pin should be left open or tied directly to -Vin (Pin 1).
3. Operation at no-load will not damage these units. However, they may not meet all specifications.
4. Dual output units may be connected to provide a 10 VDC, 24 VDC, 30 VDC or 48 VDC output. To do this, connect the load across the positive (+Vout) and negative (-Vout) outputs and float the output common.
5. It is recommended that a fuse be used on the input of a power supply for protection. See the table above for the correct rating.

Derating Curve



Mechanical Dimensions



A metal case is available
Contact the factory for details at:


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 CompuMess Elektronik GmbH • Lise-Meitner-Str. 1 • D-85716 Unterschleißheim
 Telefon (089) 32 15 01-0 • Telefax (089) 32 15 01-11
 info@compumess.de • www.compumess.de • www.netzteile.de

Mechanical Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ± 0.01 (± 0.25)

Pin Connections

| Pin | Single | Dual |
|-----|---------------|--------|
| 1 | -Vin | -Vin |
| 2 | +Vin | +Vin |
| 3 | Remote ON/OFF | |
| 5 | NC | NC |
| 6 | +Vout | +Vout |
| 7 | -Vout | Common |
| 8 | NC | -Vout |

NC = No Connection



MicroPower Direct


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