

U20 SERIES DC/DC MODULES

Applications

- Servers, Switches and Data Storage
- Wireless Communications
- Distributed Power Architecture
- Semiconductor Test Equipment
- Networking Gear
- Data Communications
- Telecommunications
- Industrial / Medical

The U20 Families of high efficiency DC/DC converters offer power levels of up to 20 Watt, which exceeds that of other bricks with the same Industry-Standard Pinouts, while providing much smaller footprints. With a ultra- wide input voltage range and single and multi-outputs, ranging from 3.3 to ±15 Volts, these converters provide versatility without sacrificing the board space. All models feature an input filter, input undervoltage lockout, output current limiting and short circuit protection. The fully enclosed, encapsulated construction achieves very efficient heat transfer with no hot spots. All converters combine creative design practices with highly derated power devices to achieve very high reliability, high performance and low cost solution to systems designers.

| Model Number | V _{in} | V _{out} | I _{out} | I _{No Load} | I _{Full Load} | Eff | Case |
|--------------|-----------------|------------------|------------------|----------------------|------------------------|-----|------|
| U20-12S5 | 9-36 VDC | 5.0 VDC | 4000.0 mA | 15.0 mA | 1029.0 mA | 81% | U |
| U20-12S12 | 9-36 VDC | 12.0 VDC | 1670.0 mA | 15.0 mA | 1006.0 mA | 83% | U |
| U20-12S15 | 9-36 VDC | 15.0 VDC | 1330.0 mA | 15.0 mA | 1004.0 mA | 83% | U |
| U20-12D12 | 9-36 VDC | ±12.0 VDC | ±833.0 mA | 20.0 mA | 1004.0 mA | 83% | U |
| U20-12D15 | 9-36 VDC | ±15.0 VDC | ±666.0 mA | 20.0 mA | 1004.0 mA | 83% | U |
| U20-12D5 | 9-36 VDC | ±5.0 VDC | ±2000.0 mA | 20.0 mA | 1004.0 mA | 83% | U |
| U20-12S3.3 | 9-36 VDC | 3.3 VDC | 4000.0 mA | 15.0 mA | 705.0 mA | 78% | U |
| U20-48S5 | 18-72 VDC | 5.0 VDC | 4000.0 mA | 10.0 mA | 508.0 mA | 82% | U |
| U20-48S12 | 18-72 VDC | 12.0 VDC | 1670.0 mA | 10.0 mA | 497.0 mA | 84% | U |
| U20-48S15 | 18-72 VDC | 15.0 VDC | 1330.0 mA | 10.0 mA | 496.0 mA | 84% | U |
| U20-48D12 | 18-72 VDC | ±12.0 VDC | ±833.0 mA | 15.0 mA | 496.0 mA | 84% | U |
| U20-48D15 | 18-72 VDC | ±15.0 VDC | ±666.0 mA | 15.0 mA | 496.0 mA | 84% | U |
| U20-48D5 | 18-72 VDC | ±5.0 VDC | ±2000.0 mA | 15.0 mA | 496.0 mA | 84% | U |
| U20-48S3.3 | 18-72 VDC | 3.3 VDC | 4000.0 mA | 10.0 mA | 353.0 mA | 78% | U |

Typical at Ta= +25 °C under nominal line voltage and 75% load conditions, unless noted. The information and specifications contained in this brief are believed to be accurate and reliable at the time of publication. Specifications are subject to change without notice. Refer to product specification sheet for performance characteristics and application guidelines.

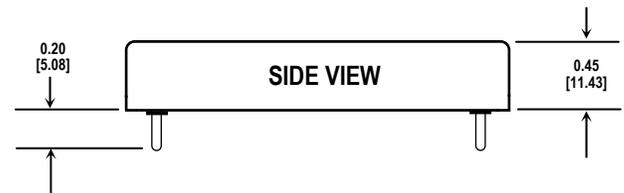
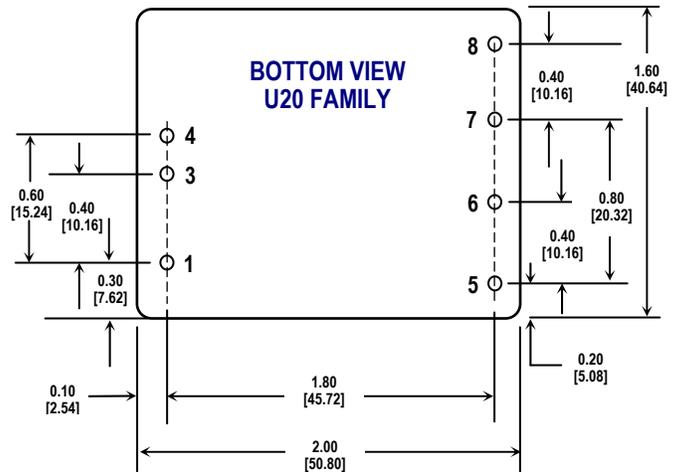
Consult factory for hundreds of other available input/output voltage configurations.



Specifications & Features Summary

- 1500V, 10MΩ input-to-output isolation
- No airflow or heatsink required
- Enclosed six-sided metal shield construction for low EMI/RFI
- Efficiency 84%
- 4:1 Input Range
- Pi Input Filter
- Continuous Short Circuit Protection
- Meets EN55022 Class A, Conducted
- Remote On/Off Control
- Delivers up to 20W in 2"x1.6" package with Industry-Standard Pinouts

| Input Specifications | |
|---|---|
| Input Voltage Range | 12V Nominal: 9-36V _{in} 48V Nominal: 18-72V _{in} |
| Input Filter | Pi Type |
| Positive Logic Remote ON/OFF Control | See Note 3 |
| Output Specifications | |
| Voltage Accuracy Single Output | +/-1.0% max. |
| Voltage Accuracy Dual + Output | +/-1.0% max. |
| Voltage Accuracy Dual - Output | +/-2.0% max. |
| Voltage Balance, Dual Output at Full Load | +/-1.0% max. |
| Transient Response | |
| Single 25% Step Load Change | <500u sec. |
| Dual FL, 1/2L +/- 1% Error Band | <500u sec. |
| External Trim Adj. Range | +/-10% |
| Ripple and Noise 20MHz BW | 20mV RMS, max. 75mV p-p. max. |
| Temperature Coefficient | +/-0.02% / °C max. |
| Short Circuit Protection | Continuous |
| Line Regulation ¹ , Single Dual / Output | +/-0.5% max. |
| Line Regulation ² , Single Dual / Output | +/-0.5% max. |
| General Specifications | |
| Efficiency | See Table |
| Isolation Capacitance | 1500 VDC min. |
| Isolation Resistance | 10 ⁸ ohms min. |
| Switching Frequency | 300KHz, typ |
| Operating Temperature Range | -25°C to +71°C |
| Derating, Above 60°C | Linearly to Zero Power at +100°C |
| Case Temperature | 100°C max. |
| Storage Temperature Range | -55°C to +105°C |
| EMI / RFI | Six sided Continuous Shield |
| Dimensions | 2X1.6X0.45 inches (50.8 X 40.64 X 11.43 mm) |
| Case Material | Black Coated Copper with Non-Conductive Base |
| Notes | |
| 1 | Measured From High Line to Low Line |
| 2 | Measured From Full Load to 1/4 Load |
| 3 | Remote On/Off Control : ON > +5.5VDC or Open Circuit OFF < 1.8VDC Control Common---Referenced to input minus |



| Pin # | U20 S(ingle) | U20 D(ual) |
|-------|--------------------|--------------------|
| 1 | On/Off | On/Off |
| 3 | V _{in} - | V _{in} - |
| 4 | V _{in} + | V _{in} + |
| 5 | Trim | Trim |
| 6 | V _{out} - | V _{out} - |
| 7 | V _{out} + | Common |
| 8 | No Pin | V _{out} + |

| Tolerances | |
|------------|--------|
| Inches | |
| • XX | ±0.040 |
| • XXX | ±0.010 |

All dimensions are in inches [mm]
 All pins are dia. 0.040 [1.02]
 Pin material: Gold plated Brass