

# U20 SERIES DC/DC MODULES

## Applications

- Servers, Switches and Data Storage
- Networking Gear
- Wireless Communications
- Data Communications
- Distributed Power Architecture
- Telecommunications
- Semiconductor Test Equipment
- 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 <sub>in</sub>	V <sub>out</sub>	I <sub>out</sub>	I <sub>No Load</sub>	I <sub>Full Load</sub>	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.

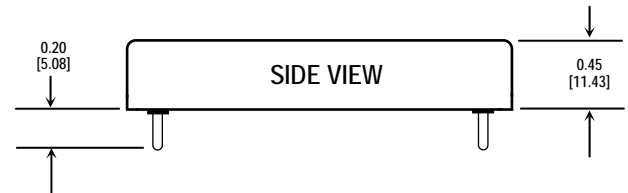
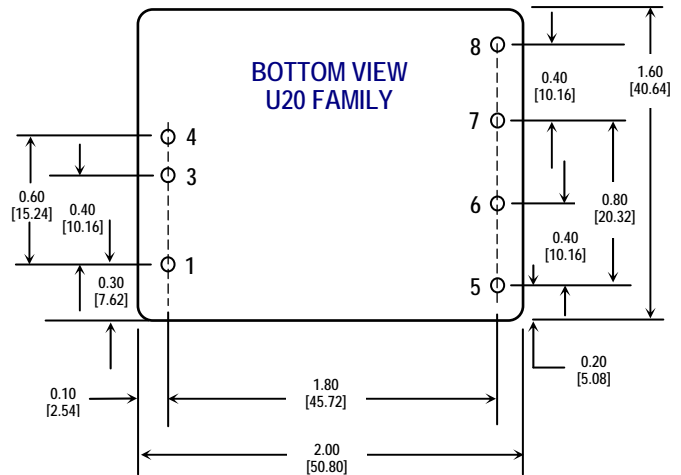
Consult factory for hundreds of other available input/output voltage configurations.



## 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: 9-36Vin 48V Nominal: 18-72Vin
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 <sup>1</sup> , Single Dual / Output	+/-0.5% max.
Load Regulation <sup>2</sup> , Single Dual / Output	+/-0.5% max.
General Specifications	
Efficiency	See Table
Isolation Capacitance	1500 VDC min.
Isolation Resistance	10 <sup>8</sup> 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(ngle)	U20 D(ual)
1	On/Off	On/Off
3	Vin -	Vin -
4	Vin +	Vin +
5	Trim	Trim
6	Vout -	Vout -
7	Vout +	Common
8	No Pin	Vout +

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