

# U6 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 U6 Family of high efficiency DC/DC converters offer power levels of up to 6 Watt, which exceeds that of other 24 PIN DIPs with the same package, while also providing Surface Mount Processable construction and Ultra-Wide (4:1) Input Voltage Range. With single and multi-outputs, these converters provide versatility without sacrificing the board space. All models feature an input filter, continuous short circuit protection and regulated outputs. The fully enclosed, encapsulated construction facilitates maximum power delivered with the highest efficiency of up to 80%. 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.

## Specifications & Features Summary

- Regulated Outputs
- -25°C to +71°C ambient operation
- Continuous Short-circuit protection
- Standard 1500V, 10MΩ input-to-output isolation
- Optional 3000V, 10MΩ input-to-output isolation
- Pi Input Filter
- Optional 5-sided metal shield
- 4:1 Input Range
- THROUGH-HOLE PACKAGES AVAILABLE (add suffix "T" to the part number)



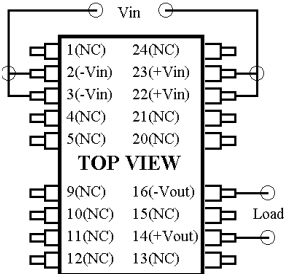
Model Number	Vin Range	Output		Input Current		Eff (%)	Regulation Line/Load	Output Ripple/Noise
		Voltage	Current	No Load	Full Load			
U6-12S5	9-36Vdc	5VDC	1000mA	15mA	267mA	78	±0.5/0.5%	100mVp-p max.
U6-12S12		12VDC	470mA	15mA	294mA	80	±0.5/0.5%	1% p-p max.
U6-12S15		15VDC	400mA	15mA	313mA	80	±0.5/0.5%	1% p-p max.
U6-12D5		±5VDC	±500mA	25mA	267mA	78	±0.5/1.0%	1% p-p max.
U6-12D12		±12VDC	±230mA	25mA	288mA	80	±0.5/1.0%	1% p-p max.
U6-12D15		±15VDC	±190mA	25mA	297mA	80	±0.5/1.0%	1% p-p max.
U6-12S3.3	18-78Vdc	3.3VDC	1000mA	15mA	191mA	72	±0.5/0.5%	100mVp-p max.
U6-48S5		5VDC	1000mA	7.5mA	134mA	78	±0.5/0.5%	100mVp-p max.
U6-48S12		12VDC	470mA	7.5mA	149mA	79	±0.5/0.5%	1% p-p max.
U6-48S15		15VDC	400mA	7.5mA	157mA	80	±0.5/0.5%	1% p-p max.
U6-48D5		±5VDC	±500mA	12mA	135mA	77	±0.5/1.0%	1% p-p max.
U6-48D12		±12VDC	±230mA	12mA	146mA	79	±0.5/1.0%	1% p-p max.
U6-48D15	±15VDC	±190mA	12mA	149mA	80	±0.5/1.0%	1% p-p max.	
U6-48S3.3	3.3VDC	1000mA	7.5mA	100mA	70	±0.5/0.5%	100mVp-p max.	

SPECIFICATIONS	
Input Specifications	
Input Voltage Range	24V-----9-36V 48V-----18-72V
Input Filter	Pi Type
Output Specifications	
Voltage Accuracy	+/-2.0% max.
Voltage Balance(Dual)	+/-1.0% / max.
Temperature Coefficient	+/-0.05% / °C
Ripple and Noise, 20MHz BW	3.3V/5V-----100mV p-p max. 12V/15V-----1% p-p max.
Short Circuit Protection	
Line Regulation <sup>1</sup> , Single/Dual	+/-0.5% max.
Load Regulation, Single <sup>2</sup>	+/-0.5% max.
Dual <sup>3</sup>	+/-1.0% max.
General Specifications	
Efficiency	See Table
Isolation Resistance	10 <sup>9</sup> ohms
Switching Frequency	200KHz, min
Operating Temperature Range	-25°C to +71°C
Case Temperature(Plastic case)	95°C max.
(Copper case)	100°C max.
Cooling	Free-Air Convection
Storage Temperature Range	-40°C to +100°C
Dimensions	1.25X0.8X0.4 Inches (31.8X20.3X10.2mm)
Isolation Voltage	
1.5KVDC min	Standard Models
3 KVDC min <sup>4</sup>	Suffix "H" Models
Case Material	
Standard Models	Non-Conductive Black Plastic
Suffix "M" Models	Black Coated Copper with Non-Conductive Base
Notes	
1.	Measured From High Line to Low Line
2.	Measured From Full Load to 10% Load
3.	Measured From Full Load to 1/4 Load
4.	Non-Conductive Black Plastic Only
5.	Suffix "HM" 1.5k VDC Instead of 3k VDC Isolation

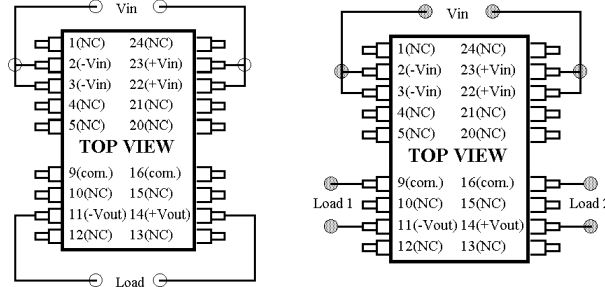
Typical at Ta= +25 °C under nominal input voltages of 24V and 48VDC, unless noted. The information and specifications contained in this brief are believed to be accurate and reliable at the time of publication. Specifications are subject to change without notice. Refer to product specification sheet for performance characteristics and application guidelines.

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

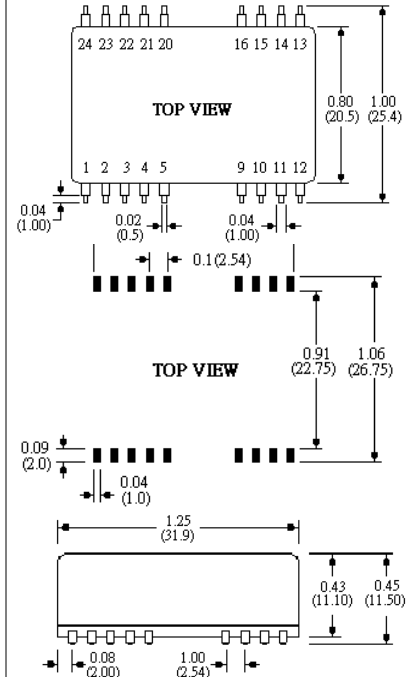
### Single Output Typical Connection



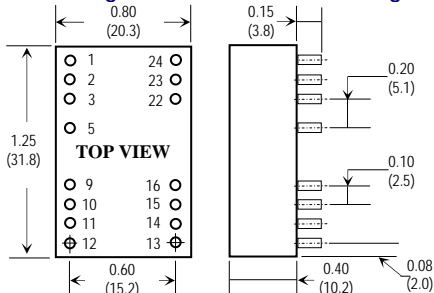
### Dual Output Typical Connections



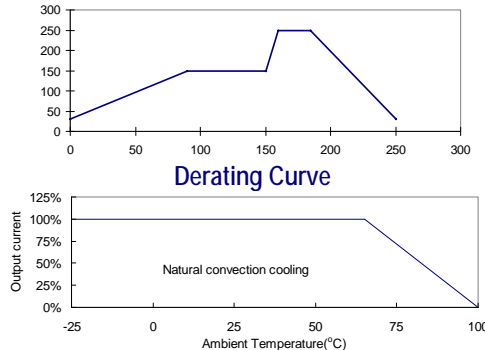
### Recommended Land Pattern



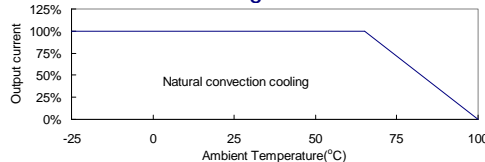
### Through-Hole Mechanical Drawing



### Recommended Reflow Profile



### Derating Curve



All Dimensions in inches (mm); tolerance \*xx = ± 0.02, \*xxx = ± 0.010  
 Pin size is 0.020" (0.5mm) DIA or 0.020" x 0.014"