

# DCMOD® AJ-040D

## DC INPUT / ITE APPROVED

### 40 WATT POWER PLATFORM

3.6 x 2.5 x 1.00" | 91.44 x 63.5 x 25.4mm



## DESCRIPTION

UNIPOWER's DCMOD® AJ-040D SERIES is a 40 Watt DC Input Power Supply platform with both standard and configurable models featuring 12, 24 or 48VDC inputs and output voltage(s) that can be quickly configured to order while maintaining all international safety approvals.

These power supplies are available in single or triple output configurations with outputs ranging from 1.5 to 48 VDC. The AJ-040D feature a high-density footprint; 24 or 48VDC Input ranges; international safety approvals; Class B emissions; and -20 ~ +70°C operation (see derating).

DCMOD® UPGRADES include a multitude of output voltage configurations, extended temperature operating range, attached wire harnesses and much, much more. All these modifications are available without any impact on safety approvals to reduce both development cost and time to market.

## FEATURES

- ◆ 12V, 24V or 48V DC Input
- ◆ High-Density 3.6" x 2.5" Footprint
- ◆ 1 or 3 Outputs configurable from 1.5~48VDC
- ◆ International Safety Approvals
- ◆ >500k Hours MTBF, Demonstrated
- ◆ Optional -40°C Guaranteed Start-Up
- ◆ Double Sided PC Board



Contact UNIPOWER to discuss your application and define the right part number for your specific application:

Tel: +1-954-905-1070

Email: [the.power.solution@unipowerco.com](mailto:the.power.solution@unipowerco.com)



FIVE YEAR WARRANTY

## INTERNATIONAL STANDARDS

UL/cUL 60950-1 2nd Ed.  
 EN60950-1 2nd Ed.  
 CB Report, IEC60950-1  
 CE Mark (LVD)

For the AC input version see [EASYSMOD AJ-040U](#) datasheet

For the Medical Approved version see [MEDIMOD AJ-040UM](#) datasheet

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“IF WHAT YOU SEE IS WHAT YOU DON’T WANT, IT CAN EASILY BE CHANGED.” The DCMOD® family of switching power supplies has been designed with two precepts; (1) the laws of physics are immutable, and (2) the satisfaction of customer requirements and needs is paramount.

A host of modifications, only some of which are listed below, can and will be performed on products for customer programs requiring as few as 250 units per year. These “mods” are available at nominal premium (if any), normally without non-recurring engineering costs (although a one time documentation fee may be incurred), and usually with all safety agency approvals in place. This minimizes both product development cost and new product time to market. Effectively, DCMODs® allow small program requirements the luxury of costly custom power supply designs.

## TYPICAL MODIFICATIONS

- Unique Output Combinations from 1.5 to >48 volts
- Low Output Ripple and Noise
- Extended Temperature Operating Range
- -40°C Start-Up
- Zero Load Operation

## FLEXIBLE OUTPUT CONFIGURATION GUIDELINES

with 12, 24 or 48VDC Input and -20-50°C Operation

### Single Output Capabilities

OUTPUT CURRENT	1.5~3.3V	5V	12V	15V	24V	48V
MINIMUM	0A	0A	0A	0A	0A	0A
CONVECTION <sup>(3)</sup>	6A	6A	2.5A	2A	1.3A	0.6A
15 CFM AIR <sup>(4)</sup>	8A	8A	3.3A	2.6A	1.7A	0.8A
PEAK <sup>(5)</sup>	9.5A	9.5A	4A	3.3A	2.1A	1A

### Multiple Output Capabilities

OUTPUT	DC OUTPUT	MIN	CON <sup>(3)</sup>	AIR <sup>(4)</sup>	PEAK <sup>(4, 5)</sup>
V1	1.5 ~ 48V <sup>(7)</sup>	0.40A <sup>(2, 12)</sup>	4.0A	5.0A	6.0A
V2	1.5 ~ 48V <sup>(8)</sup>	0.10A <sup>(2, 12)</sup>	1.0A	1.2A	1.5A
V3	1.5 ~ 48V <sup>(8)</sup>	0.08A <sup>(2, 12)</sup>	0.8A	1.0A	1.2A

(1) Full power out on V3 with minimal V1 and V2 loading—Option.

(2) 10% minimum load for stated regulation on multiple O/P units.

(3) Convection cooling.

(4) 15 CFM forced air cooling conditions.

(5) 30 seconds maximum duration.

(6) Most output combinations from 1.5 to 48+ Volts possible; up to maximum rated Current / Power...Consult UNIPOWER.

(7) Specify 0.1V increments.

(8) Specific output voltage is current dependent.

(9) Regulation may degrade under some output Consult UNIPOWER.

(10) Consult UNIPOWER for Model #.

(11) For outputs >48 Volts, consult UNIPOWER.

(12) 10% minimum of marked rating.

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For the AC input version see [EASYSMOD AJ-040D](#) datasheet | For the Medical Approved version see [MEDIMOD AJ-040UM](#) datasheet.

## SPECIFICATIONS

Typical at Nominal Line, Full Load and 25°C Unless Otherwise Noted.

### INPUT

Input Voltage Range Options .....9-18, 18-36 or 36-72 VDC  
Input Current .....2A @ 48VDC / 3A @ 24VDC max / 6A @ 12VDC  
Fusing .....4A @ 48VDC / 8A @ 24VDC / 10A @ 12VDC

### OUTPUT

Output Power .....30W Convection / 40W with 15 CFM Airflow  
Efficiency .....70% Typical  
Adjustment Range (V1 Only) .....±5%  
Ripple / Noise, max .....1% pk-pk max  
Line Regulation .....Max ±0.2%  
Load Regulation @ 60% ±40% Full Load  
V1 .....±3% max  
V2-V3 .....±5% max  
Cross Regulation @ 60% ± 40% Full Load  
V1: Change in V2 - V3 .....±0.5%  
V2 - V3: Change in V1 @75 ±25% F/L .....±5% max  
Overvoltage Protection (V1 Only) .....>125% (Latch Off)  
Power Limit .....>120% (Auto-Recovery)  
Overshoot (all outputs) .....10% max  
Response Time .....500 µSec (25-75% step load)  
Switching Frequency .....60KHz (typical)

### ENVIRONMENTAL

Operating Temp. Range .....-20°C to +50°C (Full Load)  
Consult factory for -40°C Guaranteed Start-Up  
and Industrial Temperature Range options  
Output Current Derating .....2.5%/°C, 50°C to 70°C  
Storage Temp. Range .....-40°C to + 85°C  
Humidity .....5% to 95%, Non-Condensing  
MTBF, Demonstrated .....>500,000 Hours  
Cooling .....15 CFM Airflow for Full Power  
Altitude .....10,000 feet

### PHYSICAL SPECIFICATIONS

Dimensions \* .....3.60 x 2.44 x 1.00" / 91.5 x 62.0 x 25.4mm  
Weight .....0.38 lbs. (0.17 kg.)  
Vibration from 10 - 55Hz .....1.0G Peak  
(3 orthogonal axes @ 1 octave/min, 5 minute dwell @ 4 major resonances)

### SAFETY STANDARDS

UL60950-1 2nd Ed., EN60950-1 2nd Ed., CB REPORT (IEC 60950-1),  
CE MARK (LVD)  
(not including 12VDC input models)

### EMI STANDARDS

FCC Class A & VDE Class A, CISPR 11; EN 55011 Class A  
(Class B optional, consult factory)

\* Height shown is from top of pcb to top of heatsink.

## OUTLINE DRAWING

### CONNECTOR 1

(MOLEX#09-65-2038 OR EQUIVALENT;  
MATING CONNECTOR= MOLEX#09-50-3031)  
PIN1 .....-VIN  
PIN2 .....Key  
PIN3 .....+VIN

### CONNECTOR 2 (single output)

(MOLEX#09-65-2068 OR EQUIVALENT;  
MATING CONNECTOR= MOLEX#09-50-3061)  
PIN1 .....NC  
PIN2 .....RET  
PIN3 .....RET  
PIN4 .....V1  
PIN5 .....V1  
PIN6 .....NC

### CONNECTOR 2 (multi-output)

(MOLEX#09-65-2068 OR EQUIVALENT;  
MATING CONNECTOR= MOLEX#09-50-3061)  
PIN1 .....V2  
PIN2 .....RET  
PIN3 .....RET  
PIN4 .....V1  
PIN5 .....V1  
PIN6 .....V3

