DCMOD® AL-070D

DC INPUT / ITE APPROVED
70 WATT POWER PLATFORM

5.00 x 3.00 x 1.00" | 127.0 x 76.2 x 25.4mm

DESCRIPTION

UNIPOWER's **DCMOD® AL-070D SERIES** is a 70 Watt DC Input Power Supply platform with both standard and configurable models featuring output voltage(s) that can be quickly configured to order while maintaining all international safety approvals.

These power supplies are available with 12, 24 or 48VDC input ranges and single or triple output configurations ranging from 1.5 to 48 VDC. The AL-070D feature an industry-standard footprint, 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

- 12, 24 or 48VDC Input Ranges
- Industry-Standard 3" x 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

For the AC input version see EASYMOD AL-070U datasheet

For the Medical Approved version see MEDIMOD AL-070UM datasheet

FIVE YEAR WARRANTY

INTERNATIONAL STANDARDS

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

"**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, **DCMOD**s® 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 (3)	10A	10A	4.2A	3.3A	2.1A	1.1A
10 CFM AIR (4)	14A	14A	5.9A	4.6A	3.0A	1.4A
PEAK (5)	15A	15A	6.5A	5.0A	3.5A	1.5A

Multiple Output Capabilities

OUTPUT	DC OUTPUT	MIN	CON (3)	AIR (4)	PEAK (4, 5)
V1	1.5 ~ 48V (7)	0.80A (2, 12)	8.0A	14.0A	15.0A
V2	1.5 ~ 48V (8)	0.40A (2, 12)	4.0A	7.0A	8.0A
V3	1.5 ~ 48V (8)	0.20A (2, 12)	2.0A	2.5A	3.0A

(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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Call: +1-954-905-1070 • Email: the.power.solution@unipowerco.com

For the AC input version see EASYMOD AL-070U datasheet | For the Medical Approved version see MEDIMOD AL-070UM datasheet.

SPECIFICATIONS

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

INPUT

Input Ranges ..... 12V (9-18V), 24V (18-36V) or 48V (36-72V) Range
Input Current ..... 48Vin = 3A | 24Vin = 5A | 12Vin = 10A(max)
Fusing ..... 48Vin = 4A | 24Vin = 8A | 12Vin = 15A (max)

OUTPUT

Output Power ..... 50W Convection / 70W with 15 cfm Airflow
Efficiency ..... 75% Typical (at 48Vin)
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
Immunity ..... EN61000-4-2; -3; -4; -5; -6; -8; -11
Altitude ..... 10,000 feet

PHYSICAL SPECIFICATIONS

Case Dimensions ..... 5.00 x 3.00 x 1.00" / 127 x 76.2 X 25.4mm
Weight ..... 0.56 lbs. (0.25 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 22; EN 55022 Class A
(Class B optional, consult factory)

OUTLINE DRAWING

CONNECTOR 1
(MOLEX#09-65-2058 OR EQUIVALENT:
MATING CONNECTOR= MOLEX#09-50-3051)

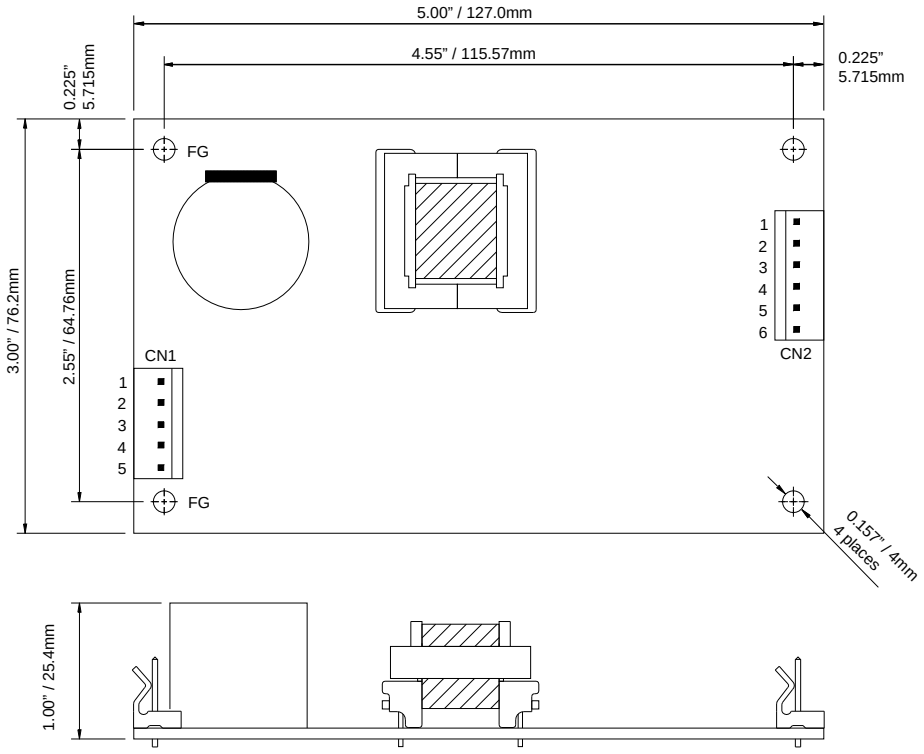
PIN1 ..... GROUND
PIN2 ..... -VIN
PIN3 ..... -VIN
PIN4 ..... +VIN
PIN5 ..... +VIN

CONNECTOR 2 (single output)
(MOLEX#09-65-2068 OR EQUIVALENT:
MATING CONNETOR= MOLEX#09-50-3061)

PIN1 ..... V1
PIN2 ..... V1
PIN3 ..... V1
PIN4 ..... RET
PIN5 ..... RET
PIN6 ..... RET

CONNECTOR 2 (multi-output)
(MOLEX#09-65-2068 OR EQUIVALENT:
MATING CONNETOR= MOLEX#09-50-3061)

PIN1 ..... V2
PIN2 ..... V1
PIN3 ..... V1
PIN4 ..... RET
PIN5 ..... RET
PIN6 ..... V3



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