

**Electrical  
Specification for:**

**24V 500W DC-DC CONVERTER**

**Advice Model:**

**DCD500-12-24G**



**DCD500-12-24**

CUSTOMER: GENERAL	SIZE			DWG. NO.	1804-DOC1-10	REV	A1
	SCALE		RELEASE DATE	11/06/17	SHEET	1	OF 6

REVISION HISTORY					
Rev Level	Rev Date	Change Made	Reason for Change	Effective	Approved By
A	11/06/17	Release	Release	11/06/17	S.Sadot
A1	25/7/17	Change input 11V minimum. Adding input 50A fuse	Customer request	25/7/17	S.Sadot

CUSTOMER: GENERAL	SIZE			DWG. NO.	1804-DOC1-10	REV	A1
	SCALE		RELEASE DATE	11/06/17	SHEET	2	OF 6

## Scope

The DCD500-12-24 converter is non isolated wide-range DC input voltage 11 to 18 volts, making it ideal for military and commercial vehicle systems.

The DCD500-12-24 low – profile units is high efficiency 96% wide temperature range -40 to +70°C fully protected again over temperature, over voltage, under voltage, over current, short circuit and revers polarity.

The DCD500-12-24 has internal O-Ring diode enable to function in parallel N+1.

The DCD500-12-24 is fully sealed encapsulation, IP67 protection class, withstanding exposure to harsh environments.

## Features

High efficiency 96%

Parallel operation

Reverse polarity protected

Rugged and reliable

Fully sealed

Epoxy resin sealing, IP67

## Applications

Automotive /RV/military

Marine and other rugged environmental

Mobile communication

Bass –station power

Industrial controls

Emergency backup power

Solar and alternative power systems

CUSTOMER: GENERAL	SIZE			DWG. NO.	1804-DOC1-10	REV	A1
	SCALE		RELEASE DATE	11/06/17	SHEET	3	OF 6

## **Electrical Specification**

### **Input:**

Input Voltage	11-18VDC
Input Current Max.	45A @ 11V input.
Turn ON (measure on terminals).	12.2VDC @ full load
Turn OFF (measure on terminals).	11.6VDC @ full load
Efficiency	96% typical
Reverse Polarity	Internally protected by Power Mosfet
Input Protection	Recommended 50A normal fuse
No-Load Current	30mA maximum.

### **Output Voltage & Current:**

Input Range	Output Voltage	I Min. Load	I Max. Load	Max. Power
11Vdc – 18Vdc	24Vdc	0	20A	480W

### **Output:**

Line & Load Regulation	$\pm 1\%$ from 10% to 100% of $I_{max}$
Ripple & Noise (p-p):	< 100mV Max @ 20 MHz bandwidth.
Transient Load Response:	$\pm 3\%$ Max. deviation for load change of 50% to 100%, at Slew rate of 1A/uSec, recovery time less than 1mSec.
Hot Swap / Parallel Operation	Internal ORing diode (FET)
Over-current / Short Protection:	105 to 125% of $I_{max}$ , automatic recovery, when cause of overload or short is removed
Over-voltage Protection:	Shut down at 110 to 130% of nominal output,
Temperature Protection:	Shut down due to excessive ambient temperature heating, unit recovers automatically typical hysteresis 20°C.

CUSTOMER: GENERAL	SIZE			DWG. NO.	1804-DOC1-10	REV	A1
	SCALE		RELEASE DATE	11/06/17	SHEET	4	OF 6



**Standards**

MIL-STD - 461C	Electromagnetic Emission
MIL-STD - 810	Environments Test Methods
MIL-STD - 419	Grounding, Bonding, Shielding

**Environmental Specifications:**

Temperature:	Operating: -40°C to +70°C Storage: -40°C to +85°C.
Temperature Coefficient:	0 to 70°C: ± 0.02%/°C
Cooling:	Free Convection / Base Plate
Humidity:	10% to 90% RH non-condensing
Altitude:	Operating: up to 10,000 ft. Non- operating 40,000 ft.
Vibration:	Random Vibration, 10Hz to 1KHz, 3 axis 1.9grms max.
Shock:	Peak Acceleration 20GPK max.

**Emission and Susceptibility**

CE-01	Conducted Emission 30Hz to 15KHz
CE-03	Conducted Emission up to 50MHz
CS-01	Conducted Susceptibility 30Hz to 50KHz
CS-06	Conducted Susceptibility Transients , Power Leads
RE-01	Radiated Emission Magnetic Field, 30Hz to 50KHz
RE-02	Radiated Emission Electrical Field, 14KHz to 10GHz

**Isolation:**

Output to Case	50VDC
Input to Case	50VDC

**Safety Agency Compliances:**

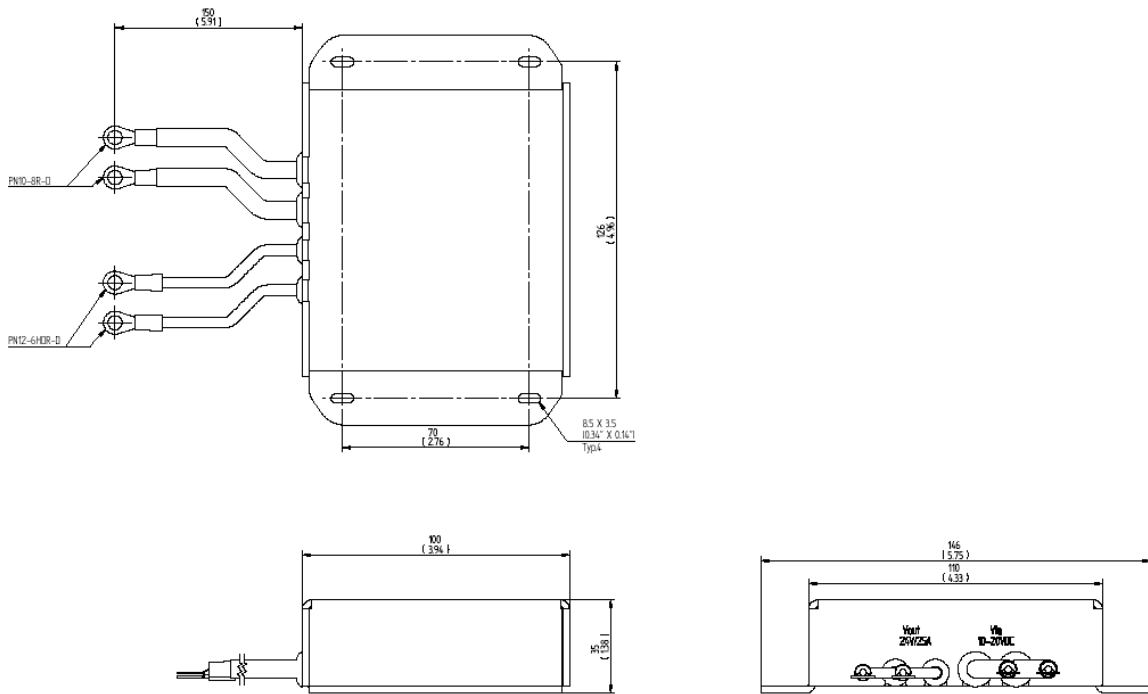
Safety	Meet UL60950-1, EN60950-1 ,
MTBF:	300,000 hours minimum per BELCOR 332,issue 6 specification @ 30°C

CUSTOMER: GENERAL	SIZE			DWG. NO.	1804-DOC1-10	REV	A1
	SCALE		RELEASE DATE	11/06/17	SHEET	5	OF 6

**Mechanical Dimensions:**

Size (W,H,D)	146 x 35 x 100 mm 5.75" x 1.38" x 3.94"
Weight	750g/1.65lb
IP Rated	IP 67
Input Wire	10AWG 250mm
Output Wire	12AWG 250mm

**DCD500-12-24 Outline Drawing**



CUSTOMER: GENERAL	SIZE			DWG. NO.	1804-DOC1-10	REV	A1
	SCALE		RELEASE DATE	11/06/17	SHEET	6	OF 6