

POWER CONVERSION PRODUCTS

Airborne Series

Part No.: VTA 05070-00

16-40Volt DC Input Range / 5±0.15 Volt DC Single Output / 25 Watts Typical Output Power Supply.

FUNCTIONAL FEATURES

- ❑ *0 to 25 Watts Output Power Supply Unit (PSU)*
- ❑ *16-40Volt DC Input Range*
- ❑ *Single + 28Vdc Input Power Source per MIL-STD-704E/F and RTCA/DO-160C*
- ❑ *High Voltage Input/Output Isolation*
- ❑ *Withstand Power Interruption for Periods up to 50 ms at 28Vdc input, 20Watts Output @ -40°C*
- ❑ *Auto Recovery at Nominal Input Voltage*
- ❑ *Power Fail Output Signal (Active Low TTL) with minimum 50 ms Holdup Time at 20W Load*
- ❑ *Continuous Short Circuit Protection*
- ❑ *Input Reverse Polarity Protection up to 50Vdc*
- ❑ *Input Transient, Voltage Spike and Lightning Protection Included*
- ❑ *Integral EMI/RFI Input Filter*
- ❑ *Incorporate Resistive Fusing Device*
- ❑ *Inrush Current Protection (Under 8A in less than 20ms)*
- ❑ *-40 ° to +80 °C Operational Temperature at Case*

This Power Supply designed for low power level, airborne applications, features a low profile package of L shape per Figure 1 (11.78 in³) or (2.12Watt/in³). It has excellent load regulation, input transient suppression, low output ripple as well as current limiting protection.

Input Specifications:

Steady State Voltage	16 Vdc (Minimum), 28Vdc (Nominal), 40 Vdc (Maximum)
..... and Power Input per:	RTCA/DO-160C Cat Z (Sec. 16)
.....	MIL-STD-704E Cat. B, Sec.5
Abnormal DC Surge Voltage.....	80 V for 100 ms, per: RTCA/DO-160C Cat Z (Sec. 16, Fig.: 16-8)
.....	MIL-STD-704A Cat B (Limits 1, Fig.: 2)
.....	MIL-STD-704E Cat B (Fig.: 11)
Input Noise/Ripple	per: RTCA/DO-160C Cat Z (Sec. 16, Fig.: 16-5) and (Sec.18.3)
.....	MIL-STD-704E (Sec. 5, Fig.: 8)
Hold Up Time.....	50 ms (Minimum) at 28Vdc input, 20 Watts output at -40°C

Soft Start	Auto restart at less than 20 ms after power failure
Inrush Current	Under 8A in less than 20ms
Isolation (Input/Output to case)	Isolation greater than 10MΩ at 500Vdc
Input Reverse Polarity	Input reverse polarity protection up to -50 Vdc

Output Specifications:

Nominal <u>Voltage</u>	Maximum <u>Current</u>	DC <u>Regulation</u>	Ripple & <u>Noise</u>	Typical <u>Output Power</u>
+ 5 VDC	5 A	± 3%	< 150 mVpk-pk	25W

Load Regulation:

Output voltage remain within tolerance bands under all steady state input and load operation conditions

Step Load Response 50%-100%-50%:

Transient voltage not greater than 300mVpk and recovery in less than 1.5ms

Current Limiting/Short Circuit Protection

Automatic restart upon removal of the short circuit

Operational Features:

Power Fail Detection	Active Low TTL signal for Vin less than 16 Vdc
Input Current Protection	Fusible Resistor
PSU Min Input Operation Voltage.....	PSU Regulation Disabled at approx Vin ≤ 15 Vdc
PSU Auto Recovery	PSU auto restart when input > 16 Vdc

Physical Specifications:

Case	Self contained unit in metal enclosure
Size	per figure 1
Material.....	Aluminum alloys case with cover
Finish	Alodine coatings, iridescent yellow Chemical Film
.....	as per MIL-C-5541C, class 3
Mounting Position	Any orientation, see vendor mechanical for details
Cooling Method	Conduction cooling via mounting surface (Fig 1).
Weight	Less than < 0.75 lbs/ 340g
Connections.....	0.045" SQ post power block assembly 0.2"Pitch Terminal
Terminals	
Input:	1) Chassis GND, 2) +28V RTN, 3) +28V
Output:	1) (PFAIL) Power Fail Detection, 2) (GND) +5Vdc Output RTN
.....	3) (+5V) +5Vdc Output

Environmental Specifications:

Shock	Operating 1/2 sine wave, 40 g, 11 ms (3 axis)
.....	RTCA/DO-160C, Sec.7
Bench Handling Shock	per MIL-STD-810E Method 516.4 Procedure VI
Vibration	Operating, per RTCA/DO-160D, Sect 8, Cat U & Cat T
.....	(5Hz-2000Hz) 0.1g ² /Hz
.....	Non-operating, per MIL-STD-810E method 514.4 Cat 10
.....	(5Hz-2000Hz) 0.4 g ² /Hz
Explosion Proof.....	RTCA/DO-160C Cat E Sec. 9
Operational Temperature	-40 to +80°C MIL-STD-810E, Method 501.3 and 502.3
Ground Survival	-55 to +90°C MIL-STD-810E, Method 501.3 and 502.3
Altitude	per RTCA/DO-160C, Sec.4 Cat D2, +50,000 ft (15,000m)
.....	and per MIL-STD-810E, Method 500.3
Humidity	10%-100% condensing per RTCA/DO-160C, Cat. B, Sec. 6
.....	and per MIL-STD-810E Method 570.3 Procedure III
Fungus	per RTCA/DO-160C, Cat. F, Sec. 13
Salt Spray	per RTCA/DO-160C, Cat. S, Sec. 14
.....	and per MIL-STD-810E Method 509.3
Sand & Dust	per RTCA/DO-160C, Cat. D, Sec. 12
EMI.....	per MIL-STD-461/462A CE01, CE03, CE07, CS01, CS02, CS06,
.....	RE01, RE02, RS01, RS02, RS03
.....	per RTCA/DO-160C, Sec. 15, Cat A
.....	Sec.18, Cat.B; Sec.19, Cat.; Sec.20, Cat.Y; Sec.21, Cat.Z
Voltage Spike.....	per RTCA/DO-160C, Sec. 17, Cat B
Lightning Susceptibility	per RTCA/DO-160C, Sec. 22 Cat. A Table 22-2 (level 4,
.....	waveform 3 and 4) and per Table 22-3 level 4, waveforms 1 or 4)
Predicted Reliability (MIL-HDBK-217)	> 50,000 hours A _{RW} @ +55°C

Viable Power Conversion Technologies Inc. .

2044 St. Regis Boulevard
 Dorval, Quebec, Canada
 H9P 1H6

Phone : (514) 684-4141
 Fax: (514) 684-1276
 Website: www.viablepower.com

Figure 1
 L = 4.600" max
 H = 2.350" max
 W = 1.750" max
 Hx = 0.800" max
 Wx = 0.750 max

