

# BG2802

## Overview

DC-DC Power Converter  
 28Vdc Input  
 Single Output. See Table 2.

## Market(s)

Military Cots

## Typical Application(s)

Aircraft Electronic Equipment



## Product Highlights

The BG2802 is an enclosed dc-dc power converter with a single output. This military Mil-COTS solution is designed to meet portions of MIL-STD-704A/E/F input requirements, portions of MIL-STD-810F vibration and shock requirements and portions of the MIL-STD-461E EMI requirements. Contact Aegis Power Systems for details concerning military specifications. When compared to power supplies using conventional technology, this enclosed case conduction cooled dc-dc power converter provides users with higher efficiency (80%), lower weight (3 lbs.).

## Features

- 28Vdc per MIL-STD-704A/E/F \*
- MIL-STD-1275A/B/D\*
- Single Output, 238W Max
- MIL-STD-810F Environmental \*
- MIL-STD-461E EMI \*
- Enclosed Case Power Converter

**Table 1: Maximum Continuous Operating Ratings**

Parameter	Rating	Unit	Notes
Vin max range	20 to 36	Vdc	
Temperature	-55 to +85	°C	91°C for 30 minutes
Output Power	237.5	W	See Table 2
Input power	297	W	

\*Designed to meet applicable portions of this standard. Contact Aegis Power Systems, Inc. for specific details.

## About Us

Aegis Power Systems, Inc. specializes in the design, development, and manufacture of AC-DC and DC-DC power supplies for high-performance, rugged, critical, and specialty applications. Markets served include defense, industrial, communications, aircraft, shipboard, rack mount, embedded computing, and electric vehicle applications.

[Contact us](#) to find out if this item can be configured or redesigned to meet your specific technology need.

## SPECIFICATIONS

(Typical at 25°C, nominal line and 100% load, unless otherwise specified.)

Parameter	Notes
DC input Voltage	Input range 20Vdc to 36Vdc, 28Vdc nominal. Designed to meet Mil-Std-704A transients. Designed to meet Mil-Std-704A/E/F (Normal and Abnormal Range). Will operate down to 18Vdc with shut down occurring with an input less than 18Vdc, (Automatic restart).
DC input Line Current	See Table 2.
Input Power	See Table 2.
Output Power	See Table 2.
Output Voltages	See Table 2.
Output Ripple	See table 2.
Current Limit	Short circuit protected with automatic recovery.
Efficiency	80% Nominal
Start-Up Time	500ms Max.
Voltage Set Point	+/-0.5%.
Line Regulation	+/- 0.15%.
Load Regulation	+/- 1.5%.
Temperature Regulation	+/-0.01%/°C
Temperature	-55°C to +85°C Operating baseplate. 30 minutes at 91°C Operating baseplate. -55°C to +100°C Non-operating. BG2820-03 (-40 to +85°C Operating.)
Cooling	Conduction cooling through baseplate.
Package	Enclosed covered attached to baseplate.
Dimensions	3" x 4" x 8.2" (see mechanical drawing).
Weight	3.0 lb. Max
Connector	1ea Input: D38999/24WD5PN, Output: D38999/24WC4SN
Fusing	Not fused. Device is reverse voltage protected with customer provided fuse.
Vibration	Mil-Std-810F Aircraft. (Contact Aegis on specific specs designed to meet.)
Shock	Mil-Std-810F Aircraft. (Contact Aegis on specific specs designed to meet.)
Explosive Atmosphere	Mil-Std-810F Aircraft. (Contact Aegis on specific specs designed to meet.)
Altitude	50,000 ft Operating.
Humidity	0 – 95% non-condensing.
EMI	Designed to meet MIL-STD-461E (CE102 and CS101).

*Specifications subject to change without notice.*

**Table 2: Voltage Output (Nominal)**

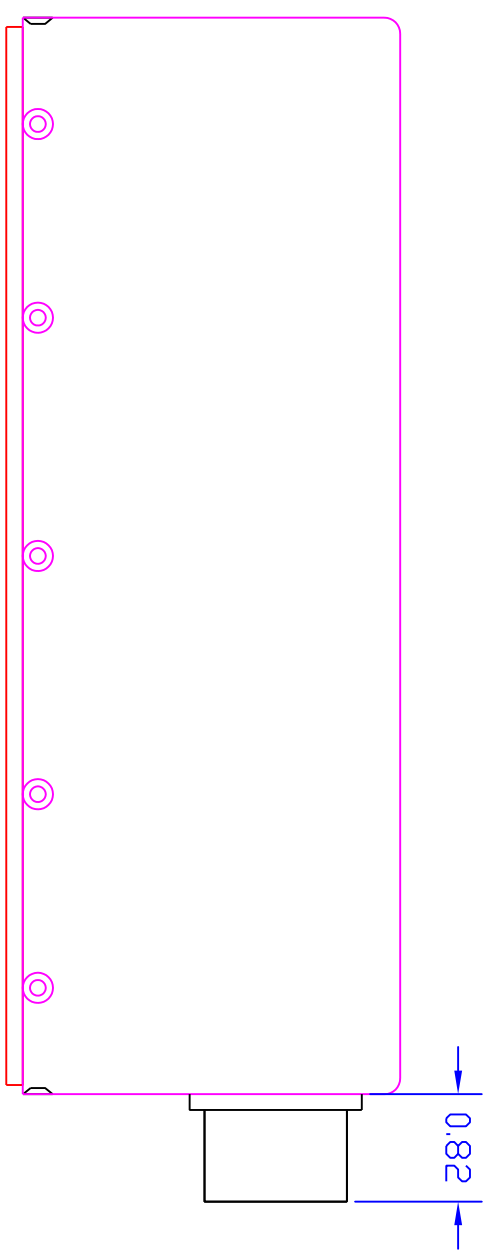
	BG2802	BG2802-01	BG2802-02	BG2802-03 (-40°C)
<b>Output Voltage</b>	+14.5Vdc	+5Vdc	+19Vdc	+14.5Vdc
<b>Output Current</b>	15A*	15A*	12.5A	15A*
<b>Input Current @28Vdc Input</b>	9.75A	3.35A	10.64A	9.75A
<b>Input Power @28Vdc Input</b>	273W	94W	298W	273W
<b>Output Power</b>	218W (290W-45uS Surge Capacity)	75W	238W	218W
<b>Ripple</b>	160mVp-p**	100mVp-p**	190mVp-p**	160mVp-p**

\*Current is limited to 13Amps per pin on D38999/24WC4SN

\*\* 100kHz Bandwidth Limited

(Ripple to be measured with 24" twisted pair connected to output & 100µF electrolytic cap paralleled with 0.1µF across the probe tip)

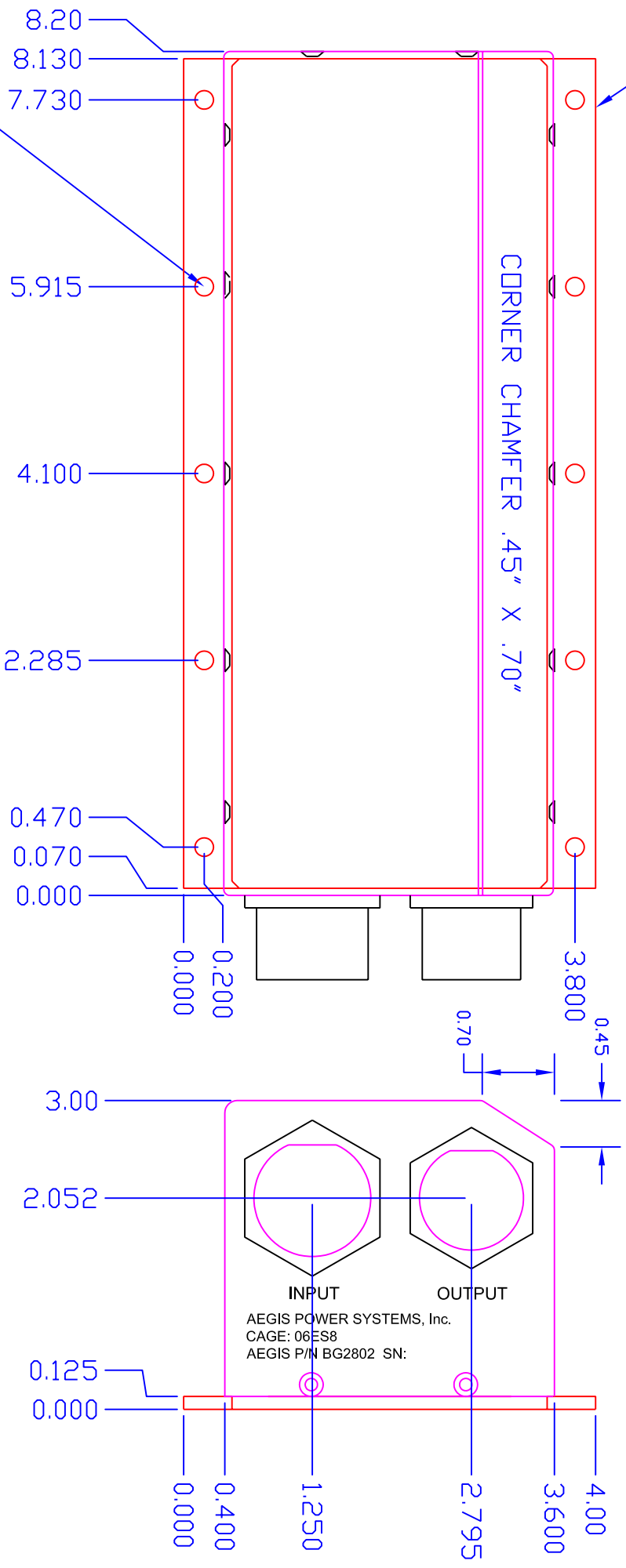
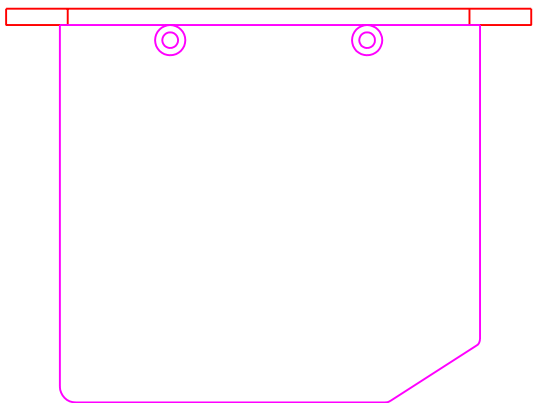
NOTES: UNLESS OTHERWISE SPECIFIED  
 1. INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1994.  
 2. MATERIAL: ALUMINUM  
 3. COVER FINISH - TOPCOAT FED-STD-595C COLOR NUMBER 36231 (LUSTERLESS GRAY) per PS13630. BASEPLATE - FINISH: CLEAR CHEMICAL FILM (RDHS Compliant) per MIL-C-5541, CLASS 3, 1AW MIL-DLT-81706, TYPE II, CLASS 3.



INPUT CONNECTOR  
 D38999/24W/DSPN  
 A - CHASSIS  
 B - INPUT POSITIVE  
 C - INPUT POSITIVE  
 D - INPUT RETURN  
 E - INPUT RETURN

CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY.

MOUNTING FLANGE (2X)



MOUNTING HOLES  
 10 X Ø 0.18  
 FOR #8 SCREW

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. FRACTIONS DECIMALS. TOLERANCES ARE: DECIMALS: .5

CONTRACT NO.		TITLE	AEGIS POWER SYSTEMS MURPHY, NORTH CAROLINA	
DRAWN	JFS	DATE	BG2802 MECHANICAL LAYOUT	
CHECKED			AEGIS P/N: BG2802	
TRNG. ENG.			Dwg. No. BG2802-M00	
WTS.			REV. B02	
QUALITY			SCALE 1/1	

FINISH	SEE NOTE 3	DO NOT SCALE DRAWING
USED ON		
NEXT ASSY		
APPLICATION		