55G SERIES

- 28 Vin DC/DC Converter
- 25 Watt Single Output

Features

- High Power Density, Low Profile Packaging
- Full Output Power at +100°C Baseplate Temperature
- Switching Power Supply – Low Noise
- ESS Screening (Burn-In) and Temperature Cycling
- Designed and Manufactured Per NAVMAT Guidelines
- Full-Mil and COTS-Mil-Type Versions (form, fit, and function identical)
- EMI Filtering Designed to MIL-STD-461C
- Remote Error Sensing
- Remote Digital (TTL) Turn On/Off
- Transient Protection per MIL-STD-704D

Contents

Description

Logitek's PS-55 Series is a family of high power density, low profile, 28 VIN DC/DC switch mode converters. This family extends from 25 Watt through 150 Watt in single, dual, and triple configurations. The PS-55 Series is ideally suited for airborne, shipboard, ground mobile and C^3I applications. All Logitek DC/DC Converters and Power Supplies are designed and qualified to the most stringent performance and environmental requirements. Full-Mil units receive ESS Screening, including burn-in and temperature cycling.

Electrical Specifications

DC Input Characteristics:

Input	14 to 36 VDC; 40 VDC maximum with no damage (50 VDC maximum – Optional)
EMI/RFI Characteristics	Designed to meet the requirements of MIL-STD-461C
Input Transient Protection	Per MIL-STD-704D and MIL-STD-461C, CS06

DC Output Characteristics:

Output Power	25 Watts, See Table 1
Output Voltage	3.3 VDC to 28 VDC, See Table 1
Efficiency	70% minimum; 65% for 3.3Vdc output units
Line Regulation	Within 0.1% for low to high line changes at constant load
Load Regulation	0.1% for 0 to 100% of rated load at nominal input line
PARD (Noise and Ripple)	50 mV p-p typical; 100 mV p-p maximum for 5V outputs (20 MHz bandwidth); 1% of the output voltage, with a maximum of 200 mV p-p, for all other outputs (20 MHz bandwidth)
Load Transient Recovery	Output voltage returns to regulation limits within 0.5 msec (typical), half to full load
Load Transient Under/Overshoot	0.35 Volt maximum from nominal output voltage set point for 3.3 V and 5.0 V outputs, all other outputs are 5%.
Short Circuit Protection	Under any short circuit condition, output voltage drops to less than 1 volt, with automatic recovery

DC Output Characteristics (Continued):

Current Limiting	120% ±10% typical
OverVoltage Protection	Automatic electronic shutdown if voltage exceeds 125% ±10%
Remote Error Sensing	Compensates for up to 0.5-volt drop on output leads
Remote Turn On/Off	TTL logic 1 inhibits (turns off) the output; a floating input acts as a logic 0 (output on)
Isolation Voltage	500 VDC input to output and input to case; 100 VDC output to case.
Insulation Resistance	50 Megohm at 50 VDC

Physical/Environmental Specifications

Temperature Range	Operating: -55°C to +100°C at 100% load (Temperature measured at baseplate; conduction via baseplate only); Storage: -55°C to +125°C
Temperature Coefficient	0.01% per °C
Shock	30 G's each axis, per MIL-STD-810C, Method 516.2, Procedure 1. Hammer shock per MIL-S-901C
Acceleration	6 G's per MIL-STD-810C, Method 513.2, Procedure 11, and 14 G's per Procedure 1
Vibration	Per MIL-STD-810C, Method 514.2, Procedure 1A
Reliability (MTBF)	200,000 hours, ground benign, at 50°C baseplate
Humidity	95% at 71°C per MIL-STD-810C, Method 507.1 (non-condensing)
Altitude	40,000 feet per MIL-STD-810C, Method 504.1, Category 6 Equipment
Dimensions	See Table 3
Salt & Fog	Per MIL-STD-810C, Method 509.1
Sand/Dust/Fungus	Per MIL-STD-810C
Enclosure	Aluminum housing to aluminum baseplate
Finish	Cover: Black anodized; Baseplate: chemfilm
Interface	Connections via a D-subminiature connector per Page 2 of this Data Sheet
Weight	9 ounces

Table 1. Output Power

Watts	Volts	Amps
25	3.3	7.5
25	5.0	5.0
25	12.0	2.1
25	15.0	1.7
25	24.0	1.1
25	28.0	0.9

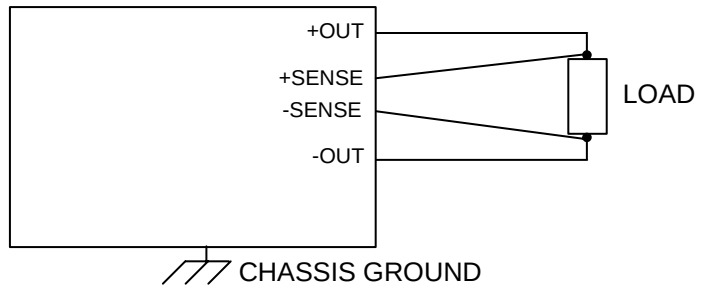
Table 2. Pinout Designations (J1)

Pin No.	Function	Pin No.	Function
1	+INPUT	9	-INPUT
2	----	10	----
3	-TTL (ON/OFF)	11	CHASSIS GND
4	+TTL (ON/OFF)	12	+SENSE
5	+OUTPUT	13	-SENSE
6	+OUTPUT	14	+OUTPUT
7	-OUTPUT	15	-OUTPUT
8	-OUTPUT		

Connector Specifications

Connector	Part Number - Series
Unit Connector	DAMME15PR
Mating Connector	DAMM15S

Output Wiring Diagram



Mechanical Layout

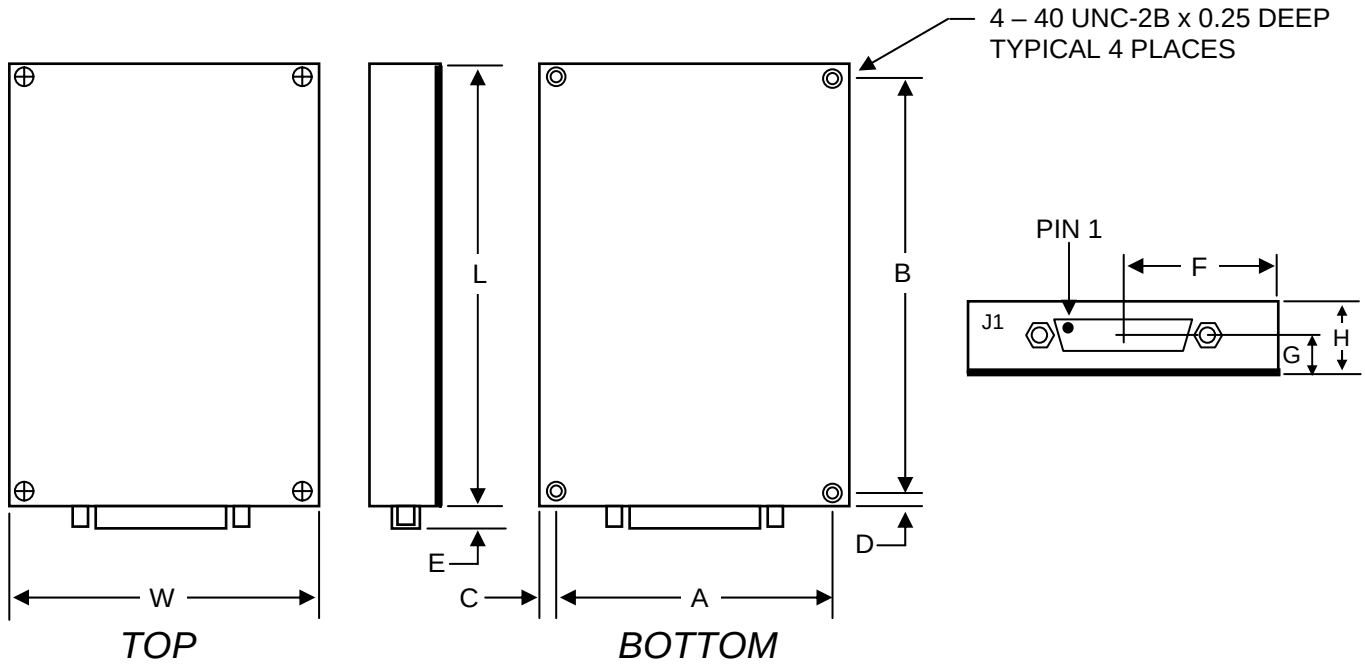


Table 3. Mechanical Dimensions

UNITS	W	L	A	B	F
Inches	2.20	2.80	1.850	2.450	1.10
mm	55.9	71.1	46.99	62.13	27.9

Notes

Dimensions C & D: 0.2” (5.1 mm)
Dimension E: 0.23” (5.84 mm)
Dimension G: 0.455” (11.56 mm)
Dimension H: 0.8” (20.3 mm)

Ordering Information for PS-55GS1 Series (25 Watt Single DC/DC Converter)

55 G S1 - 005 H 0 - XX

CODE (Used only for "Specials") **See Code Table Below**

OPTIONS: 0 = Standard Testing (Includes ESS Temperature Cycling per NAVMAT)
1 = Standard Testing plus ESS Vibration Testing (per NAVMAT)

RELIABILITY:

H = Full-Mil: -55°C to +100°C, Hi-Rel Mil Grade Components, Designed to meet the requirements of MIL-STD-461C, Designed to meet the requirements of MIL-STD-810C, Designed per NAVMAT Guidelines.

M = COTS-Mil-Type: -55°C to +100°C, Mil-Type Components, Designed to meet the Requirements of MIL-STD-461C, Designed to meet the requirements of MIL-STD-810C, Designed per NAVMAT Guidelines.

OUTPUT VOLTAGE(s): 003 = 3.3 V
005 = 5 V
012 = 12 V
015 = 15 V
024 = 24 V
028 = 28 V
000 = Special Voltage – See Code Table Below

OUTPUTS: S1 = Single

WATTAGE: G = 25 W

SERIES: 55 = DC/DC (Low Voltage)

Example: *55GS1-005H1 = DC/DC (Low Voltage); 25 Watt; Single Output; +5 V; Full-Mil-Type; ESS Vibration Testing*
55GS1-012M0 = DC/DC (Low Voltage); 25 Watt; Single Output; +12 V; COTS-Mil-Type; Standard Testing

Consult Factory for Additional Options and/or Special Units

Code Table for "Specials"

Code	Code Description
55GS1-012H0-01	Input Voltage = 22-36Vdc. Transient Protection @ 600V for 10 Microseconds. Interface thermal pad included
55GS1-005M0-01	Potted, Designed to meet Mil-Std-810C, Procedure 1, Category 6, 70,000 feet. (Add 0.4lbs to weight of unit)
55GS1-005M0-02	• Meets 100V input transient per MIL-STD-1275 – efficiency 65%. • Provides Full load to 15 V input. • Provides 75% load to 14 V input.
55GS1-015H0-01	Potted, Designed to meet Mil-Std-810C, Procedure 1, Category 6, 70,000 feet. (Add 0.4lbs to weight of unit)