

**Input Ranges:**

10 - 75V

**Single Output:**

3.3V, 5.0V, 7.5V

12V, 15V, 24V

28V, 48V, 60V, 80V

**Dual Output:**

+5V/+12V

+5V/+15V

**Bipolar Output:**

±12V

±15V



**FEATURES**

**General:**

- Small footprint : 1.9" x 3.0"
- Output power : 25 - 100 watts
- Wide input range : 10-75Vdc
- Encapsulated
- Integral PCB transformer
- High conversion efficiency to 88%
- Line & load regulation to ±0.5%
- Fixed operating frequency

**Protection:**

- Output over-voltage protection
- Output over-load protection
- Hiccup mode short circuit protection
- Over-temperature protection
- Input under-voltage lock-out

**Control:**

- Enable (On/Off) Control
- Output Voltage Trim

**Isolation:**

- Isolation Voltage > 1500V

**APPLICATIONS**

- Distributed Power Systems
- Workstations
- Computer Equipment
- Communications Equipment

**GH** series is a family of 25W to 100W DC-DC converters with high power density, high efficiency, and high reliability. These converters are designed for wide input range telecommunications, industrial, and instrument applications. The wide input range (2:1, 3:1) is ideal for battery or unregulated input applications.

Integral PCB transformer / inductor is used for all models in this series. This new design technique has greatly improved the magnetic coupling, reduced switching spike and provided performance consistency. It also streamlines the production process by completely eliminating the hand-wind magnetic assembly process from production lines.

**GH** series provides the most extensive protection to safeguard both the power converter and the load. It includes output over-voltage protection, over-current protection, hiccup mode indefinite short circuit protection, under-voltage lockout and over-temperature protection. Over-current inception point is set at about 115% of rated load. Hiccup mode cycles at 28mSec period with 3mSec on and 25mSec off. Over-temperature shutdown activated at +115°C board temperature will recover when the temperature falls below +95°C.

**GH** series features low output noise, very tight line and load regulation, and high efficiency. There is no external capacitor requirement for normal operation. Output trim pin is standard.

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### 1. Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause performance degradation, adversely effect longterm reliability, and cause permanent damage to the device.

Parameter	Conditions / Description	Min	Max	Units
<b>Input Voltage</b>				
Continuous	12	-0.3	20	Vdc
	24	-0.3	36	Vdc
	48	-0.3	75	Vdc
	30	-0.3	30	Vdc
	60	-0.3	60	Vdc
Transient (100mSec.)	12	-0.3	22	Vdc
	24	-0.3	38	Vdc
	48	-0.3	78	Vdc
	30	-0.3	32	Vdc
	60	-0.3	64	Vdc
<b>Operating Temperature</b>	Standard temperature models, base plate temperature	-40	+105	°C
	Extended temperature models, base plate temperature	-55	+105	°C
<b>Storage Temperature</b>	<b>Ambient</b>	-55	+125	°C
<b>Isolation Voltage</b>	Input to Output		+2000	Vdc

### 2. Input Specifications

Parameter	Conditions / Description	Min	Nom	Max	Units
<b>Input Voltage</b>					
Voltage Range (Continuous)	12	10	12	20	Vdc
	24	18	24	36	Vdc
	48	36	48	75	Vdc
	30	10	24	30	Vdc
	60	20	48	60	Vdc
<b>Under-Voltage Lockout (UVLO)</b>					
Turn-On Threshold (Ramping Up)	12		9.7		Vdc
	24		17		Vdc
	48		35		Vdc
	30		9.7		Vdc
	60		17		Vdc
Turn-Off Threshold (Ramping Down)	12		9.7		Vdc
	24		16		Vdc
	48		33		Vdc
	30		9.2		Vdc
	60		16		Vdc

### 3. Enable (On-Off Control)

Parameter	Conditions / Description	Min	Nom	Max	Units
<b>Enable Pin</b>					
Open Circuit Voltage			10		Vdc
Source Current				1	mA
<b>Positive Logic</b>	<b>Standard</b>				
On-Control	Logic High or Floating	2.5		10	Vdc
Off-Control		-0.5		1.8	Vdc
<b>Negative Logic</b>	<b>Not Available</b>				

### 4. Output Trim

Parameter	Conditions / Description	Min	Nom	Max	Units
<b>Negative Trim</b>	Standard				
Trim Up	Trim Pin to (-)Vout			10	%Vdc
Trim Down	Trim Pin to (+)Vout	8			%Vdc
<b>Positive Trim</b>	Not Available				

\*Trim pin can be left floating if not used.

### 5. Output Specifications

Parameter	Conditions / Description	Min	Nom	Max	Units
Voltage Accuracy	Please see table			±1.0	%
Output Current	Please see table				Adc
Output Trim				+10/-8	%Vout
Over Voltage Protection				120	%Vdc
Line Regulation				±0.2	%Vout
Load Regulation				±0.5	%Vout
Transient Response	50% ± 25% step load change		200		µSec.
Ripple & Noise	Please see table				mVp-p
Switching Frequency			300		KHz

### 6. Environmental and Mechanical Specifications

Parameter	Conditions / Description	Min	Nom	Max	Units
Operating Temperature	PCB Temperature				
Standard		-25		+100	°C
Extended		-55		+100	°C
Storage Temperature		-55		+125	°C
Temperature Coefficient				±0.02	%/°C
Shock	Halfsine wave, 3 axes	50			g
Sinusoidal Vibration	GR-63-CORE, Section 5.4.2	1			g
Humidity	Relative Humidity, Non-Condensing			95	%R.H.
Weight					
PCB Mount			2.5(70)		Oz(g)
Chassis Mount			3.0(86)		Oz(g)
MTBF (calculated)	Bellcore TR-NWT-000332 method 1 - parts count	1			MHrs

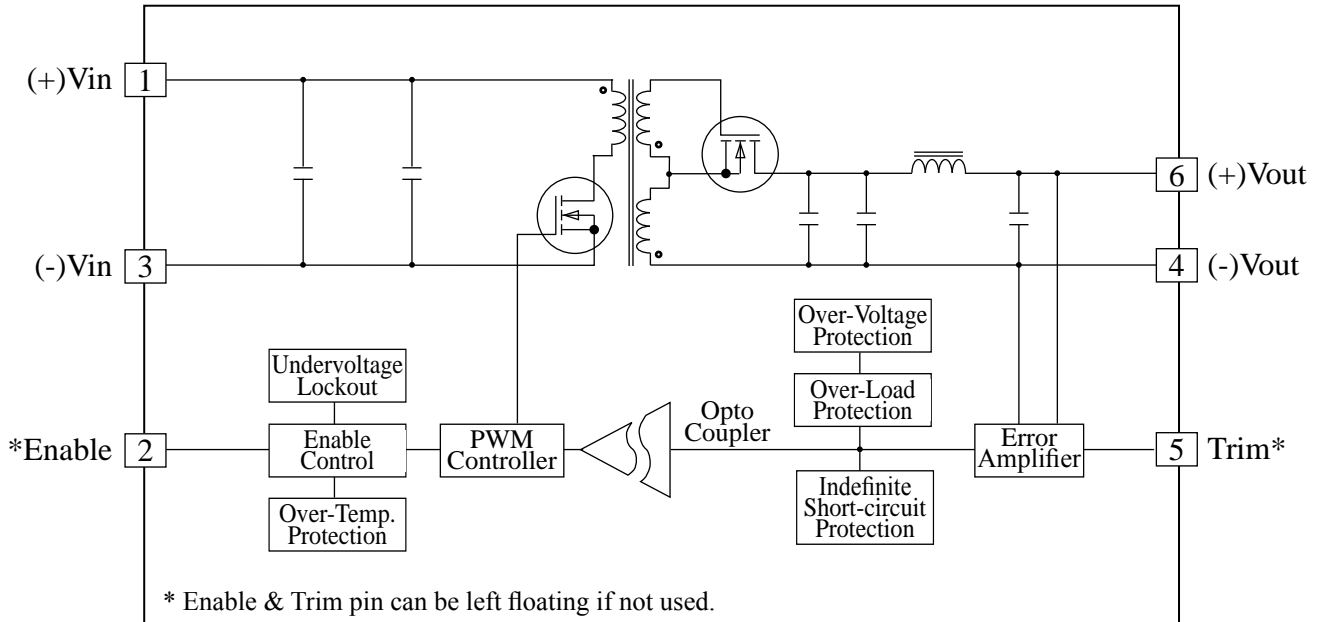
### 7. Isolation Specifications

Parameter	Conditions / Description	Min	Nom	Max	Units
Isolation Voltage					
Input to Output		1500			Vdc
I/O to Case		1500			Vdc
Isolation Resistance	Input to Output	10			MΩ
Isolation Capacitance	Input to Output		3		nF

### 8. Protections

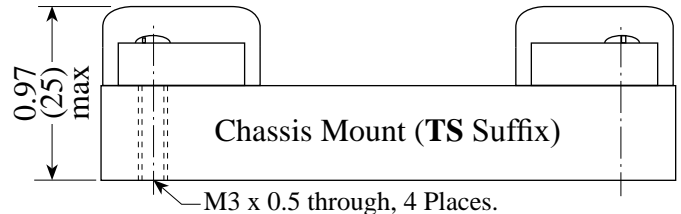
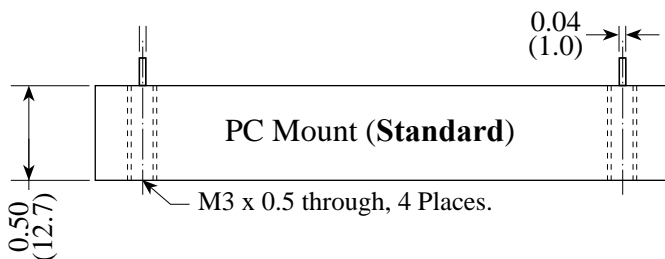
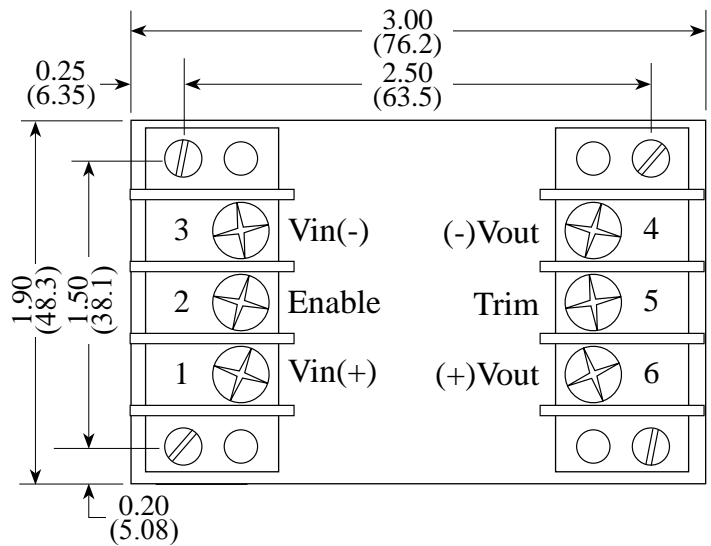
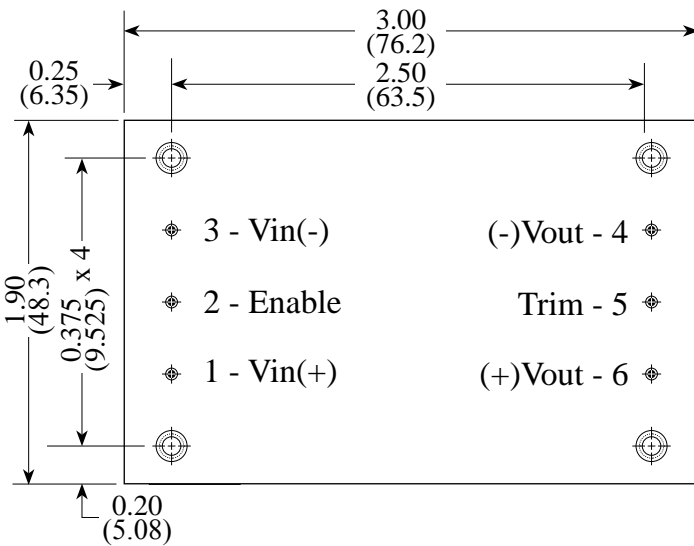
Parameter	Conditions / Description	Min	Nom	Max	Units
Over-Load Protection					
Type	Current-Mode, Pulse by Pulse Current Limit				
Threshold	% Rated Load		120		%
Short-Circuit Protection					
Type	Hiccup Mode, Non-Latching, Auto-Recovery				
Threshold	Short-Circuit Resistance			65	mΩ
Over-Temperature Protection					
Type	Non-Latching, Auto-Recovery				
Threshold	PCB Temperature		115		°C
Hysteresis	+		15		°C
Over-Voltage Protection					
Type	Voltage Latch				
Set-Point				120	%Vout

**BLOCK DIAGRAM**



**PC Board Mount (Standard)**

**Chassis Mount (Optional, TS suffix)**



INPUT			OUTPUT								Over Temp. Shutdown /Recover	EFF. (Typ.)	MODEL NO.	
Nominal (Range)	Under Voltage Lockout (typ.)		Power (Watt)	Voltage (V)			Current (A)		Ripple & Noise					OVP (max)
	On	Off		Set Point	Min.*	Max.*	Min.	Max.	Peak-Peak	R.M.S.				
12 (10-20)	9.7	9.5	30	3.3	3.20	3.40	0	9.0	75mV	15mV	3.9V		85%	GH30S12033
			50		3.20	3.40	0	15.0	75mV	15mV	3.9V		85%	GH50S12033
			66		3.26	3.40	0	20	60mV	15mV	3.9V		88%	GH66S12033
			30	5.0	4.95	5.05	0	6.0	75mV	15mV	5.9V		86%	GH30S1205
			50		4.95	5.05	0	10.0	75mV	15mV	5.9V		86%	GH50S1205
			75		4.90	5.10	0	15	75mV	15mV	5.9V		88%	GH75S1205
			25	7.5	7.40	7.60	0	3.3	75mV	15mV	9.0V		86%	GH25S12075
			30		7.40	7.60	0	4.0	75mV	15mV	9.0V		86%	GH30S12075
			50		7.40	7.60	0	6.7	75mV	15mV	9.0V		86%	GH50S12075
			75	12	7.40	7.60	0.5	10	75mV	15mV	9.0V		88%	GH75S12075
			100		7.40	7.60	0.6	13.4	75mV	15mV	9.0V		88%	GH100S12075
			25		11.88	12.12	0.1	2.10	100mV	20mV	14.4V		86%	GH25S1212
			30	15	11.88	12.12	0.1	2.50	100mV	20mV	14.4V		86%	GH30S1212
			50		11.88	12.12	0.2	4.20	100mV	20mV	14.4V		86%	GH50S1212
			75		11.88	12.12	0.3	6.3	80mV	20mV	14.4V		88%	GH75S1212
			100	24	11.88	12.12	0.4	8.4	80mV	20mV	14.4V		88%	GH100S1212
			25		14.85	15.15	0.1	1.7	120mV	25mV	18V		86%	GH25S1215
			30		14.85	15.15	0.1	2.0	120mV	25mV	18V		86%	GH30S1215
			50	28	14.85	15.15	0.2	3.4	120mV	25mV	18V		86%	GH50S1215
			75		14.85	15.15	0.3	5.0	100mV	25mV	18V		88%	GH75S1215
			100		14.85	15.15	0.3	6.7	100mV	25mV	18V		88%	GH100S1215
			25	48	23.80	24.20	0.05	1.0	150mV	25mV	28V		85%	GH25S1224
			30		23.80	24.20	0.06	1.25	150mV	25mV	28V		85%	GH30S1224
			50		23.80	24.20	0.1	2.10	150mV	25mV	28V		85%	GH50S1224
			75	80	23.76	24.24	0.15	3.2	160mV	35mV	28V		85%	GH75S1224
			100		23.76	24.24	0.2	4.2	160mV	35mV	28V		85%	GH100S1224
			30		27.75	28.25	0.05	1.08	200mV	30mV	33V		86%	GH30S1228
			50	60	27.75	28.25	0.1	1.80	200mV	30mV	33V		86%	GH50S1228
			75		27.72	28.28	0.13	2.7	200mV	40mV	33V		85%	GH75S1228
			100		27.72	28.28	0.2	3.6	200mV	40mV	33V		85%	GH100S1228
30	80	47.60	48.40	0.03	0.63	300mV	40mV	57V	86%	GH30S1248				
50		47.60	48.40	0.05	1.04	300mV	40mV	57V	86%	GH50S1248				
30		59.50	60.50	0.03	0.50	400mV	50mV	72V	86%	GH30S1260				
50	80	59.50	60.50	0.04	0.84	400mV	50mV	72V	86%	GH50S1260				
30		79.20	80.80	0.02	0.38	600mV	75mV	96V	86%	GH30S1280				
50		79.20	80.80	0.03	0.63	600mV	75mV	96V	86%	GH50S1280				

\* Combined Line & Load (Low Line to High Line, Min. Load to Full Load)

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**Product Numbering System & Selection Guide**

GH	25	S	12	05	C
Series No.	Output Power	No Output	Input Voltage	Output Voltage	Options
GH	25 : 25W 30 : 30W 50 : 50W 100 : 100W 150 : 150W	S : Single	12 : 10-20V 24 : 18-36V 48 : 36-75V 30 : 10-30V 60 : 20-60V	033 : 3.3V 05 : 5.0V 12 : 12V 15 : 15V 24 : 24V 28 : 28V 36 : 36V 48 : 48V 60 : 60V 80 : 80V	C : Extended Temperature TS : Terminal Stripes

INPUT			OUTPUT								Over Temp. Shutdown /Recover	EFF. (Typ.)	MODEL NO.		
Nominal (Range)	Under Voltage Lockout (typ.)		Power (Watt)	Voltage (V)			Current (A)		Ripple & Noise					OVP (max)	Short Circuit Protection
	On	Off		Set Point	Min.*	Max.*	Min.	Max.	Peak-Peak	R.M.S.					
24 (18-36)	17.5	17	25	3.30	3.20	3.40	0	8.0	75mV	15mV	3.9V	Hiccup Mode Indefinite	+105°C/ +95°C	85%	GH25S24033
			30		3.20	3.40	0	9.0	75mV	15mV	3.9V			85%	GH30S24033
			50		3.20	3.40	0	15.0	75mV	15mV	3.9V			85%	GH50S24033
			82		3.26	3.40	0	25	60mV	15mV	3.9V			88%	GH82S24033
			132		3.26	3.40	0	40	60mV	15mV	3.9V			88%	GH132S24033
			25	5.0	4.95	5.05	0	5.0	75mV	15mV	5.9V			86%	GH25S2405
			30		4.95	5.05	0	6.0	75mV	15mV	5.9V			86%	GH30S2405
			50		4.95	5.05	0	10.0	75mV	15mV	5.9V			86%	GH50S2405
			100		4.90	5.10	0	20	75mV	15mV	5.9V			88%	GH100S2405
			150		4.90	5.10	0	30	75mV	15mV	5.9V			88%	GH150S2405
			25	7.5	7.40	7.60	0	3.3	75mV	15mV	9.0V			86%	GH25S24075
			30		7.40	7.60	0	4.0	75mV	15mV	9.0V			86%	GH30S24075
			50		7.40	7.60	0	6.7	75mV	15mV	9.0V			86%	GH50S24075
			100		7.40	7.60	0.5	13.4	75mV	15mV	9.0V			88%	GH100S24075
			150		7.40	7.60	0.6	20	75mV	15mV	9.0V			88%	GH150S24075
			25	12	11.88	12.12	0.1	2.10	100mV	20mV	14.4V			86%	GH25S2412
			30		11.88	12.12	0.1	2.50	100mV	20mV	14.4V			86%	GH30S2412
			50		11.88	12.12	0.2	4.20	100mV	20mV	14.4V			86%	GH50S2412
			100		11.88	12.12	0.3	8.4	80mV	20mV	14.4V			88%	GH100S2412
			150		11.88	12.12	0.4	12.5	80mV	20mV	14.4V			88%	GH150S2412
			25	15	14.85	15.15	0.1	1.7	120mV	25mV	18V			86%	GH25S2415
			30		14.85	15.15	0.1	2.0	120mV	25mV	18V			86%	GH30S2415
			50		14.85	15.15	0.2	3.4	120mV	25mV	18V			86%	GH50S2415
			100		14.85	15.15	0.3	6.7	100mV	25mV	18V			88%	GH100S2415
			150		14.85	15.15	0.3	10	100mV	25mV	18V			88%	GH150S2415
			25	24	23.80	24.20	0.05	1.0	150mV	25mV	28V			85%	GH25S2424
			30		23.80	24.20	0.06	1.25	150mV	25mV	28V			85%	GH30S2424
			50		23.80	24.20	0.1	2.10	150mV	25mV	28V			85%	GH50S2424
			100		23.76	24.24	0.15	4.2	160mV	35mV	28V			85%	GH100S2424
			150		23.76	24.24	0.2	6.3	160mV	35mV	28V			85%	GH150S2424
			30	28	27.75	28.25	0.05	1.08	200mV	30mV	33V			86%	GH30S2428
			50		27.75	28.25	0.1	1.80	200mV	30mV	33V			86%	GH50S2428
100	27.72	28.28	0.13		3.6	200mV	40mV	33V	85%	GH100S2428					
150	27.72	28.28	0.2		5.4	200mV	40mV	33V	85%	GH150S2428					
30	48	47.60	48.40	0.03	0.63	300mV	40mV	57V	86%	GH30S2448					
50		47.60	48.40	0.05	1.04	300mV	40mV	57V	86%	GH50S2448					
30	60	59.50	60.50	0.03	0.50	400mV	50mV	72V	86%	GH30S2460					
50		59.50	60.50	0.04	0.84	400mV	50mV	72V	86%	GH50S2460					
30		80	79.20	80.80	0.02	0.38	600mV	75mV	96V	86%	GH30S2480				
50	79.20		80.80	0.03	0.63	600mV	75mV	96V	86%	GH50S2480					

\* Combined Line & Load (Low Line to High Line, Min. Load to Full Load)

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**Product Numbering System & Selection Guide**

GH	25	S	24	05	C
Series No.	Output Power	No Output	Input Voltage	Output Voltage	Options
GH	25 : 25W 30 : 30W 50 : 50W 100 : 100W 150 : 150W	S : Single	12 : 10-20V 24 : 18-36V 48 : 36-75V 30 : 10-30V 60 : 20-60V	033 : 3.3V 05 : 5.0V 12 : 12V 15 : 15V 24 : 24V 28 : 28V 36 : 36V 48 : 48V 60 : 60V 80 : 80V	C : Extended Temperature TS : Terminal Stripes

INPUT			OUTPUT								Over Temp. Shutdown /Recover	EFF. (Typ.)	MODEL NO.		
Nominal (Range)	Under Voltage Lockout (typ.)		Power (Watt)	Voltage (V)			Current (A)		Ripple & Noise					OVP (max)	Short Circuit Protection
	On	Off		Set Point	Min.*	Max.*	Min.	Max.	Peak-Peak	R.M.S.					
48 (36-75)	35	34	25	3.30	3.20	3.40	0	8.0	75mV	15mV	3.9V	Hiccup Mode Indefinite	+105°C/ +95°C	85%	GH25S48033
			30		3.20	3.40	0	9.0	75mV	15mV	3.9V			85%	GH30S48033
			50		3.20	3.40	0	15.0	75mV	15mV	3.9V			85%	GH50S48033
			82		3.26	3.40	0	25	60mV	15mV	3.9V			88%	GH82S48033
			132		3.26	3.40	0	40	60mV	15mV	3.9V			88%	GH132S48033
			25	5.0	4.95	5.05	0	5.0	75mV	15mV	5.9V			86%	GH25S4805
			30		4.95	5.05	0	6.0	75mV	15mV	5.9V			86%	GH30S4805
			50		4.95	5.05	0	10.0	75mV	15mV	5.9V			86%	GH50S4805
			100		4.90	5.10	0	20	75mV	15mV	5.9V			88%	GH100S4805
			150		4.90	5.10	0	30	75mV	15mV	5.9V			88%	GH150S4805
			25	7.5	7.40	7.60	0	3.3	75mV	15mV	9.0V			86%	GH25S48075
			30		7.40	7.60	0	4.0	75mV	15mV	9.0V			86%	GH30S48075
			50		7.40	7.60	0	6.7	75mV	15mV	9.0V			86%	GH50S48075
			100		7.40	7.60	0.5	13.4	75mV	15mV	9.0V			88%	GH100S48075
			150		7.40	7.60	0.6	20	75mV	15mV	9.0V			88%	GH150S48075
			25	12	11.88	12.12	0.1	2.10	100mV	20mV	14.4V			86%	GH25S4812
			30		11.88	12.12	0.1	2.50	100mV	20mV	14.4V			86%	GH30S4812
			50		11.88	12.12	0.2	4.20	100mV	20mV	14.4V			86%	GH50S4812
			100		11.88	12.12	0.3	8.4	80mV	20mV	14.4V			88%	GH100S4812
			150		11.88	12.12	0.4	12.5	80mV	20mV	14.4V			88%	GH150S4812
			25	15	14.85	15.15	0.1	1.7	120mV	25mV	18V			86%	GH25S4815
			30		14.85	15.15	0.1	2.0	120mV	25mV	18V			86%	GH30S4815
			50		14.85	15.15	0.2	3.4	120mV	25mV	18V			86%	GH50S4815
			100		14.85	15.15	0.3	6.7	100mV	25mV	18V			88%	GH100S4815
			150		14.85	15.15	0.3	10	100mV	25mV	18V			88%	GH150S4815
			25	24	23.80	24.20	0.05	1.0	150mV	25mV	28V			85%	GH25S4824
			30		23.80	24.20	0.06	1.25	150mV	25mV	28V			85%	GH30S4824
			50		23.80	24.20	0.1	2.10	150mV	25mV	28V			85%	GH50S4824
			100		23.76	24.24	0.15	4.2	160mV	35mV	28V			85%	GH100S4824
			150		23.76	24.24	0.2	6.3	160mV	35mV	28V			85%	GH150S4824
			30	28	27.75	28.25	0.05	1.08	200mV	30mV	33V			86%	GH30S4828
			50		27.75	28.25	0.1	1.80	200mV	30mV	33V			86%	GH50S4828
100	27.72	28.28	0.13		3.6	200mV	40mV	33V	85%	GH100S4828					
150	27.72	28.28	0.2		5.4	200mV	40mV	33V	85%	GH150S4828					
30	48	47.60	48.40	0.03	0.63	300mV	40mV	57V	86%	GH30S4848					
50		47.60	48.40	0.05	1.04	300mV	40mV	57V	86%	GH50S4848					
30	60	59.50	60.50	0.03	0.50	400mV	50mV	72V	86%	GH30S4860					
50		59.50	60.50	0.04	0.84	400mV	50mV	72V	86%	GH50S4860					
30		80	79.20	80.80	0.02	0.38	600mV	75mV	96V	86%	GH30S4880				
50	79.20		80.80	0.03	0.63	600mV	75mV	96V	86%	GH50S4880					

\* Combined Line & Load (Low Line to High Line, Min. Load to Full Load)

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**Product Numbering System & Selection Guide**

GH	25	S	48	05	C
Series No.	Output Power	No Output	Input Voltage	Output Voltage	Options
GH	25 : 25W	S : Single	12 : 10-20V	033 : 3.3V	C : Extended Temperature
	30 : 30W		24 : 18-36V	05 : 5.0V	TS : Terminal Stripes
	50 : 50W		48 : 36-75V	12 : 12V	
	100 : 100W		30 : 10-30V	15 : 15V	
	150 : 150W		60 : 20-60V	24 : 24V	
				28 : 28V	
				36 : 36V	
				48 : 48V	
				60 : 60V	
				80 : 80V	

INPUT			OUTPUT								Over Temp. Shutdown /Recover	EFF. (Typ.)	MODEL NO.		
Nominal (Range)	Under Voltage Lockout (typ.)		Power (Watt)	Voltage (V)			Current (A)		Ripple & Noise					OVP (max)	Short Circuit Protection
	On	Off		Set Point	Min.*	Max.*	Min.	Max.	Peak-Peak	R.M.S.					
30 (10-30)	9.7	9.5	25	3.30	3.20	3.40	0	8.0	75mV	15mV	3.9V	Hiccup Mode Indefinite	+105°C/ +95°C	85%	GH25S30033
			30		3.20	3.40	0	9.0	75mV	15mV	3.9V			85%	GH30S30033
			50		3.20	3.40	0	15.0	75mV	15mV	3.9V			85%	GH50S30033
			66		3.26	3.40	0	20	60mV	15mV	3.9V			88%	GH66S30033
			100		3.26	3.40	0	30	60mV	15mV	3.9V			88%	GH100S30033
			25	5.0	4.95	5.05	0	5.0	75mV	15mV	5.9V			86%	GH25S3005
			30		4.95	5.05	0	6.0	75mV	15mV	5.9V			86%	GH30S3005
			50		4.95	5.05	0	10.0	75mV	15mV	5.9V			86%	GH50S3005
			75		4.90	5.10	0	15	75mV	15mV	5.9V			88%	GH75S3005
			100		4.90	5.10	0	20	75mV	15mV	5.9V			88%	GH100S3005
			25	7.5	7.40	7.60	0	3.3	75mV	15mV	9.0V			86%	GH25S30075
			30		7.40	7.60	0	4.0	75mV	15mV	9.0V			86%	GH30S30075
			50		7.40	7.60	0	6.7	75mV	15mV	9.0V			86%	GH50S30075
			75		7.40	7.60	0.5	10	75mV	15mV	9.0V			88%	GH75S30075
			100		7.40	7.60	0.6	13.4	75mV	15mV	9.0V			88%	GH100S30075
			25	12	11.88	12.12	0.1	2.10	100mV	20mV	14.4V			86%	GH25S3012
			30		11.88	12.12	0.1	2.50	100mV	20mV	14.4V			86%	GH30S3012
			50		11.88	12.12	0.2	4.20	100mV	20mV	14.4V			86%	GH50S3012
			75		11.88	12.12	0.3	6.3	80mV	20mV	14.4V			88%	GH75S3012
			100		11.88	12.12	0.4	8.4	80mV	20mV	14.4V			88%	GH100S3012
			25	15	14.85	15.15	0.1	1.7	120mV	25mV	18V			86%	GH25S3015
			30		14.85	15.15	0.1	2.0	120mV	25mV	18V			86%	GH30S3015
			50		14.85	15.15	0.2	3.4	120mV	25mV	18V			86%	GH50S3015
			75		14.85	15.15	0.3	5.0	100mV	25mV	18V			88%	GH75S3015
			100		14.85	15.15	0.3	6.7	100mV	25mV	18V			88%	GH100S3015
			25	24	23.80	24.20	0.05	1.0	150mV	25mV	28V			85%	GH25S3024
			30		23.80	24.20	0.06	1.25	150mV	25mV	28V			85%	GH30S3024
			50		23.80	24.20	0.1	2.10	150mV	25mV	28V			85%	GH50S3024
			75		23.76	24.24	0.15	3.2	160mV	35mV	28V			85%	GH75S3024
			100		23.76	24.24	0.2	4.2	160mV	35mV	28V			85%	GH100S3024
30	28	27.75	28.25	0.05	1.08	200mV	30mV	33V	86%	GH30S3028					
50		27.75	28.25	0.1	1.80	200mV	30mV	33V	86%	GH50S3028					
75		27.72	28.28	0.13	2.7	200mV	40mV	33V	85%	GH75S3028					
100	27.72	28.28	0.2	3.6	200mV	40mV	33V	85%	GH100S3028						
30	48	47.60	48.40	0.03	0.63	300mV	40mV	57V	86%	GH30S3048					
50		47.60	48.40	0.05	1.04	300mV	40mV	57V	86%	GH50S3048					
30	60	59.50	60.50	0.03	0.50	400mV	50mV	72V	86%	GH30S3060					
50		59.50	60.50	0.04	0.84	400mV	50mV	72V	86%	GH50S3060					
30		79.20	80.80	0.02	0.38	600mV	75mV	96V	86%	GH30S3080					
50	79.20	80.80	0.03	0.63	600mV	75mV	96V	86%	GH50S3080						

\* Combined Line & Load (Low Line to High Line, Min. Load to Full Load)

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**Product Numbering System & Selection Guide**

GH	25	S	30	05	C
Series No.	Output Power	No Output	Input Voltage	Output Voltage	Options
GH	25 : 25W	S : Single	12 : 10-20V	033 : 3.3V	C : Extended Temperature
	30 : 30W		24 : 18-36V	05 : 5.0V	TS : Terminal Stripes
	50 : 50W		48 : 36-75V	12 : 12V	
	100 : 100W		30 : 10-30V	15 : 15V	
	150 : 150W		60 : 20-60V	24 : 24V	
				28 : 28V	
				36 : 36V	
				48 : 48V	
				60 : 60V	
				80 : 80V	

INPUT			OUTPUT								Over Temp. Shutdown /Recover	EFF. (Typ.)	MODEL NO.		
Nominal (Range)	Under Voltage Lockout (typ.)		Power (Watt)	Voltage (V)			Current (A)		Ripple & Noise					OVP (max)	Short Circuit Protection
	On	Off		Set Point	Min.*	Max.*	Min.	Max.	Peak-Peak	R.M.S.					
60 (20-60)	17.5	17	25	3.30	3.20	3.40	0	8.0	75mV	15mV	3.9V	Hiccup Mode Indefinite	+105°C/ +95°C	85%	GH25S60033
			30		3.20	3.40	0	9.0	75mV	15mV	3.9V			85%	GH30S60033
			50		3.20	3.40	0	15.0	75mV	15mV	3.9V			85%	GH50S60033
			66		3.26	3.40	0	20	60mV	15mV	3.9V			88%	GH66S60033
			100		3.26	3.40	0	30	60mV	15mV	3.9V			88%	GH100S60033
			25	5.0	4.95	5.05	0	5.0	75mV	15mV	5.9V			86%	GH25S6005
			30		4.95	5.05	0	6.0	75mV	15mV	5.9V			86%	GH30S6005
			50		4.95	5.05	0	10.0	75mV	15mV	5.9V			86%	GH50S6005
			75		4.90	5.10	0	15	75mV	15mV	5.9V			88%	GH75S6005
			100		4.90	5.10	0	20	75mV	15mV	5.9V			88%	GH100S6005
			25	7.5	7.40	7.60	0	3.3	75mV	15mV	9.0V			86%	GH25S60075
			30		7.40	7.60	0	4.0	75mV	15mV	9.0V			86%	GH30S60075
			50		7.40	7.60	0	6.7	75mV	15mV	9.0V			86%	GH50S60075
			75		7.40	7.60	0.5	10	75mV	15mV	9.0V			88%	GH75S60075
			100		7.40	7.60	0.6	13.4	75mV	15mV	9.0V			88%	GH100S60075
			25	12	11.88	12.12	0.1	2.10	100mV	20mV	14.4V			86%	GH25S6012
			30		11.88	12.12	0.1	2.50	100mV	20mV	14.4V			86%	GH30S6012
			50		11.88	12.12	0.2	4.20	100mV	20mV	14.4V			86%	GH50S6012
			75		11.88	12.12	0.3	6.3	80mV	20mV	14.4V			88%	GH75S3012
			100		11.88	12.12	0.4	8.4	80mV	20mV	14.4V			88%	GH100S6012
			25	15	14.85	15.15	0.1	1.7	120mV	25mV	18V			86%	GH25S6015
			30		14.85	15.15	0.1	2.0	120mV	25mV	18V			86%	GH30S6015
			50		14.85	15.15	0.2	3.4	120mV	25mV	18V			86%	GH50S3015
			75		14.85	15.15	0.3	5.0	100mV	25mV	18V			88%	GH75S3015
			100		14.85	15.15	0.3	6.7	100mV	25mV	18V			88%	GH100S6015
			25	24	23.80	24.20	0.05	1.0	150mV	25mV	28V			85%	GH25S6024
			30		23.80	24.20	0.06	1.25	150mV	25mV	28V			85%	GH30S6024
			50		23.80	24.20	0.1	2.10	150mV	25mV	28V			85%	GH50S6024
			75		23.76	24.24	0.15	3.2	160mV	35mV	28V			85%	GH75S6024
			100		23.76	24.24	0.2	4.2	160mV	35mV	28V			85%	GH100S6024
30	28	27.75	28.25	0.05	1.08	200mV	30mV	33V	86%	GH30S6028					
50		27.75	28.25	0.1	1.80	200mV	30mV	33V	86%	GH50S6028					
75		27.72	28.28	0.13	2.7	200mV	40mV	33V	85%	GH75S6028					
100	27.72	28.28	0.2	3.6	200mV	40mV	33V	85%	GH100S6028						
30	48	47.60	48.40	0.03	0.63	300mV	40mV	57V	86%	GH30S6048					
50		47.60	48.40	0.05	1.04	300mV	40mV	57V	86%	GH50S6048					
30	60	59.50	60.50	0.03	0.50	400mV	50mV	72V	86%	GH30S6060					
50		59.50	60.50	0.04	0.84	400mV	50mV	72V	86%	GH50S6060					
30		80	79.20	80.80	0.02	0.38	600mV	75mV	96V	86%	GH30S6080				
50	79.20		80.80	0.03	0.63	600mV	75mV	96V	86%	GH50S6080					

\* Combined Line & Load (Low Line to High Line, Min. Load to Full Load)

**Product Numbering System & Selection Guide**

GH	25	S	60	05	C
Series No.	Output Power	No Output	Input Voltage	Output Voltage	Options
GH	25 : 25W 30 : 30W 50 : 50W 100 : 100W 150 : 150W	S : Single	12 : 10-20V 24 : 18-36V 48 : 36-75V 30 : 10-30V 60 : 20-60V	033 : 3.3V 05 : 5.0V 12 : 12V 15 : 15V 24 : 24V 28 : 28V 36 : 36V 48 : 48V 60 : 60V 80 : 80V	C : Extended Temperature TS : Terminal Stripes



INPUT			OUTPUT											Over Temp. Shutdown /Recover	EFF. (typ.)	MODEL NO.	
Nominal (Range)	Under Voltage Lockout (typ.)		Power (Max/Peak)	Voltage					Current (A)			Ripple & Noise					Short Circuit Protection
	On	Off		#	Set Point	Min.*	Max.*	#	Min.	Max.	Peak	R.M.S.					
12 (10-20)	9.7	9.5	30W/30W	+5V	+V1	+5.00	+4.90	+5.10	+11	+0.4	+4.0	75mV	15mV	Hiccup Mode Indefinite	+105°C/ +95°C	88%	GH30D1205+12
			30W/30W	+12V	+V2	+12.0	+11.0	+13.0	+12	+0.1	+1.0	120mV	25mV			88%	GH50D1205+12
			50W/50W	+5V	+V1	+5.00	+4.90	+5.10	+11	+0.6	+6.0	75mV	15mV			88%	GH30D1205+15
			50W/50W	+12V	+V2	+12.0	+11.0	+13.0	+12	+0.2	+2.0	120mV	25mV			88%	GH50D1205+15
24 (18-36)	17	16	30W/30W	+5V	+V1	+5.00	+4.90	+5.10	+11	+0.4	+4.0	75mV	15mV			88%	GH30D2405+12
			30W/30W	+12V	+V2	+12.0	+11.0	+13.0	+12	+0.1	+1.0	120mV	25mV			88%	GH50D2405+12
			50W/50W	+5V	+V1	+5.00	+4.90	+5.10	+11	+0.4	+4.0	75mV	15mV			88%	GH30D2405+15
			50W/50W	+12V	+V2	+12.0	+11.0	+13.0	+12	+0.2	+2.0	120mV	25mV			88%	GH50D2405+15
48 (36-75)	35	34	30W/30W	+5V	+V1	+5.00	+4.90	+5.10	+11	+0.4	+4.0	75mV	15mV			88%	GH30D4805+12
			30W/30W	+12V	+V2	+12.0	+11.0	+13.0	+12	+0.1	+1.0	120mV	25mV			88%	GH50D4805+12
			50W/50W	+5V	+V1	+5.00	+4.90	+5.10	+11	+0.6	+6.0	75mV	15mV			88%	GH30D4805+15
			50W/50W	+12V	+V2	+12.0	+11.0	+13.0	+12	+0.2	+2.0	120mV	25mV			88%	GH50D4805+15
30 (10-30)	9.7	9.5	30W/30W	+5V	+V1	+5.00	+4.90	+5.10	+11	+0.4	+4.0	75mV	15mV	86%	GH30D3005+12		
			30W/30W	+12V	+V2	+12.0	+11.0	+13.0	+12	+0.1	+1.0	120mV	25mV	86%	GH50D3005+12		
			40W/50W	+5V	+V1	+5.00	+4.90	+5.10	+11	+0.6	+6.0	75mV	15mV	86%	GH30D3005+15		
			40W/50W	+12V	+V2	+12.0	+11.0	+13.0	+12	+0.2	+2.0	120mV	25mV	86%	GH50D3005+15		
60 (20-60)	17	16	30W/30W	+5V	+V1	+5.00	+4.90	+5.10	+11	+0.4	+4.0	75mV	15mV	88%	GH30D6005+12		
			30W/30W	+12V	+V2	+12.0	+11.0	+13.0	+12	+0.1	+1.0	120mV	25mV	88%	GH50D6005+12		
			40W/50W	+5V	+V1	+5.00	+4.90	+5.10	+11	+0.6	+6.0	75mV	15mV	86%	GH30D6005+15		
			40W/50W	+12V	+V2	+12.0	+11.0	+13.0	+12	+0.2	+2.0	120mV	25mV	86%	GH50D6005+15		

\* Combined Line & Load Regulation (Low Line to High Line & Min. Load to Full Load)

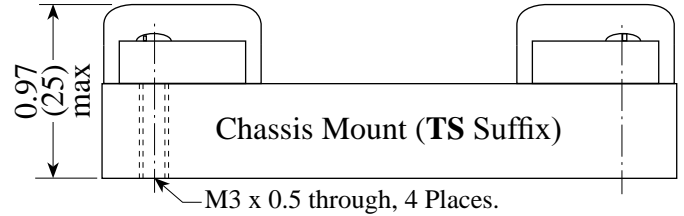
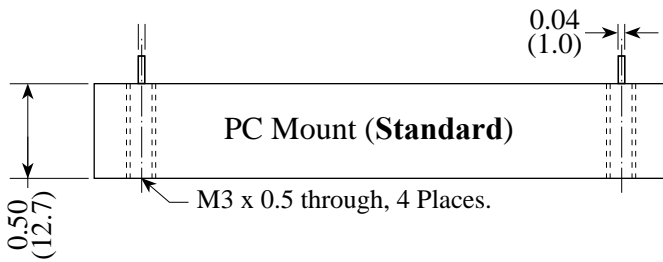
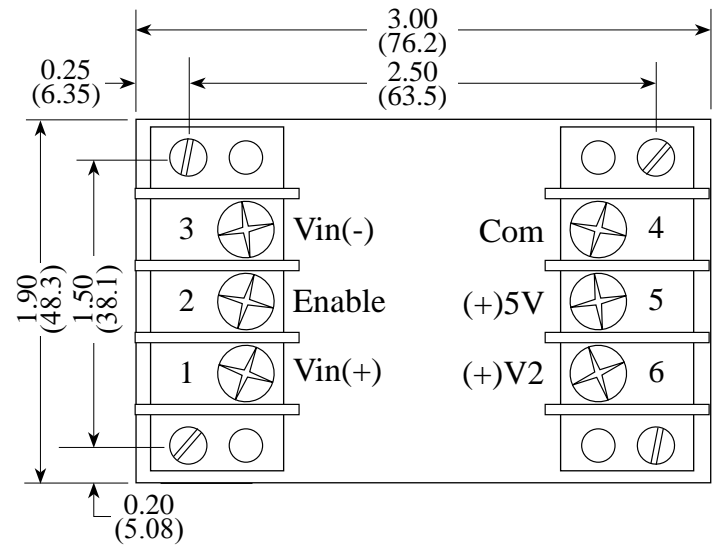
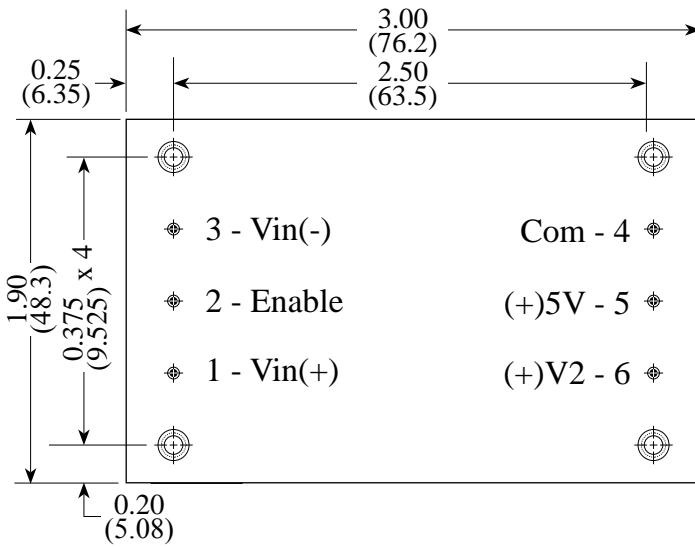
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**Product Numbering System & Selection Guide**

<b>GH</b>	<b>50</b>	<b>D</b>	<b>24</b>	<b>05</b>	<b>+</b>	<b>12</b>	<b>C</b>
Series No.	Output Power	No Output	Input Voltage	+V1		+V2	Option
GH	30 : 30W 50 : 50W	D : Dual	12 : 10-20V 24 : 18-36V 48 : 36-75V 30 : 10-30V 60 : 20-60V	05 : +5.0V		12 : +12V 15 : +15V	C : Extended Temperature TS : Terminal Strips

**PC Board Mount (Standard)**

**Chassis Mount (Optional, TS suffix)**



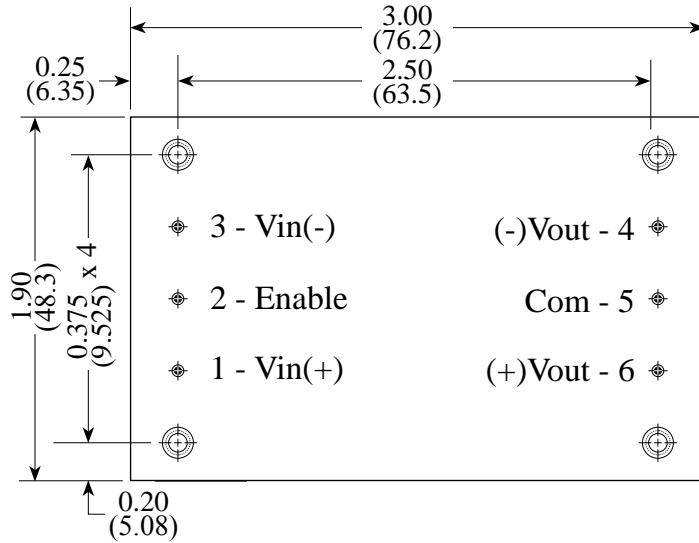
INPUT			OUTPUT										Over Temp. Shutdown/Recover	EFF. (typ.)	MODEL NO.							
Nominal (Range)	Under Voltage Lockout (typ.)		Power (Watt)	Voltage				Current (A)			Ripple & Noise					Short Circuit Protection						
	On	Off		#	Set Point	Min.*	Max.*	#	Min.	Max.	Peak-Peak	R.M.S.										
12 (10-20)	9.7	9.5	30W	±12V	+V1	+12.00	+11.88	+12.12	+11	+0.1	+1.2	100mV	20mV		88%	GH30D1212						
					-V2	-12.00	-11.50	-12.50	-12	-0.1	-1.2	100mV	20mV									
			50W	±12V	+V1	+12.00	+11.88	+12.12	+11	+0.2	+2.1	100mV	20mV				88%	GH50D1212				
					-V2	-12.00	-11.50	-12.50	-12	-0.2	-2.1	100mV	20mV									
			30W	±15V	+V1	+15.00	+14.85	+15.15	+11	+0.1	+1.0	120mV	25mV						88%	GH30D1215		
					-V2	-15.00	-14.40	-15.60	-12	-0.1	-1.0	120mV	25mV									
			50W	±15V	+V1	+15.00	+14.85	+15.15	+11	+0.2	+1.7	120mV	25mV								88%	GH50D1215
					-V2	-15.00	-14.40	-15.60	-12	-0.2	-1.7	120mV	25mV									
24 (18-36)	17	16	30W	±12V	+V1	+12.00	+11.88	+12.12	+11	+0.1	+1.2	100mV	20mV	88%	GH30D2412							
					-V2	-12.00	-11.50	-12.50	-12	-0.1	-1.2	100mV	20mV									
			50W	±12V	+V1	+12.00	+11.88	+12.12	+11	+0.2	+2.1	100mV	20mV			88%	GH50D2412					
					-V2	-12.00	-11.50	-12.50	-12	-0.2	-2.1	100mV	20mV									
			30W	±15V	+V1	+15.00	+14.85	+15.15	+11	+0.1	+1.0	120mV	25mV					88%	GH30D2415			
					-V2	-15.00	-14.40	-15.60	-12	-0.1	-1.0	120mV	25mV									
			50W	±15V	+V1	+15.00	+14.85	+15.15	+11	+0.2	+1.7	120mV	25mV							88%	GH50D2415	
					-V2	-15.00	-14.40	-15.60	-12	-0.2	-1.7	120mV	25mV									
48 (36-75)	35	34	30W	±12V	+V1	+12.00	+11.88	+12.12	+11	+0.1	+1.2	100mV	20mV	88%	GH30D4812							
					-V2	-12.00	-11.50	-12.50	-12	-0.1	-1.2	100mV	20mV									
			50W	±12V	+V1	+12.00	+11.88	+12.12	+11	+0.2	+2.1	100mV	20mV			88%	GH50D4812					
					-V2	-12.00	-11.50	-12.50	-12	-0.2	-2.1	100mV	20mV									
			30W	±15V	+V1	+15.00	+14.85	+15.15	+11	+0.1	+1.0	120mV	25mV					88%	GH30D4815			
					-V2	-15.00	-14.40	-15.60	-12	-0.1	-1.0	120mV	25mV									
			50W	±15V	+V1	+15.00	+14.85	+15.15	+11	+0.2	+1.7	120mV	25mV							88%	GH50D4815	
					-V2	-15.00	-14.40	-15.60	-12	-0.2	-1.7	120mV	25mV									
30 (10-30)	9.7	9.5	30W	±12V	+V1	+12.00	+11.88	+12.12	+11	+0.1	+1.2	100mV	20mV	86%	GH30D3012							
					-V2	-12.00	-11.50	-12.50	-12	-0.1	-1.2	100mV	20mV									
			50W	±12V	+V1	+12.00	+11.88	+12.12	+11	+0.2	+2.1	100mV	20mV			86%	GH50D3012					
					-V2	-12.00	-11.50	-12.50	-12	-0.2	-2.1	100mV	20mV									
			30W	±15V	+V1	+15.00	+14.85	+15.15	+11	+0.1	+1.0	120mV	25mV					86%	GH30D3015			
					-V2	-15.00	-14.40	-15.60	-12	-0.1	-1.0	120mV	25mV									
			50W	±15V	+V1	+15.00	+14.85	+15.15	+11	+0.2	+1.7	120mV	25mV							86%	GH50D3015	
					-V2	-15.00	-14.40	-15.60	-12	-0.2	-1.7	120mV	25mV									
60 (20-60)	17	16	30W	±12V	+V1	+12.00	+11.88	+12.12	+11	+0.1	+1.2	100mV	20mV	86%	GH30D6012							
					-V2	-12.00	-11.50	-12.50	-12	-0.1	-1.2	100mV	20mV									
			50W	±12V	+V1	+12.00	+11.88	+12.12	+11	+0.2	+2.1	100mV	20mV			86%	GH50D6012					
					-V2	-12.00	-11.50	-12.50	-12	-0.2	-2.1	100mV	20mV									
			30W	±15V	+V1	+15.00	+14.85	+15.15	+11	+0.1	+1.0	120mV	25mV					86%	GH30D6015			
					-V2	-15.00	-14.40	-15.60	-12	-0.1	-1.0	120mV	25mV									
			50W	±15V	+V1	+15.00	+14.85	+15.15	+11	+0.2	+1.7	120mV	25mV							86%	GH50D6015	
					-V2	-15.00	-14.40	-15.60	-12	-0.2	-1.7	120mV	25mV									

\* Combined Line & Load Regulation (Low Line to High Line & Min. Load to Full Load)

**Product Numbering System & Selection Guide**

<b>GH</b>	<b>50</b>	<b>D</b>	<b>24</b>	<b>12</b>	<b>C</b>
Series No.	Output Power	No Output	Input Voltage	Output Voltage	Options
<b>GH</b>	<b>30</b> : 30W <b>50</b> : 50W	<b>D</b> : Dual	<b>12</b> : 10-20V <b>24</b> : 18-36V <b>48</b> : 36-75V <b>30</b> : 10-30V <b>60</b> : 20-60V	<b>12</b> : ±12V <b>15</b> : ±15V	<b>C</b> : Extended Temperature <b>TS</b> : Terminal Strips
ACON, INC. • www.aconinc.com					<b>GH</b> Series

**PC Board Mount (Standard)**



**Chassis Mount (Optional, TS suffix)**

