

HLD SERIES - 60 WATT

Half-Brick



DESCRIPTION

The HLD series are through-hole mount, **Half-brick**, Low profile, **Dual output DC/DC** high density converters. The HLD series provides onboard conversion of telecom and datacom input voltages to isolated low output voltages without the need for a heatsink. The HLD series is well suited for distributed power architectures, telecom equipment, and LAN/WAN and data process applications.

FEATURES

- Single-board, multi-layer design
- Planar magnetics
- Fully automated - minimal 'touch time'
- Two independently regulated outputs
- Can start into high capacitive load
- Low profile
- Standard half-brick size and pinout

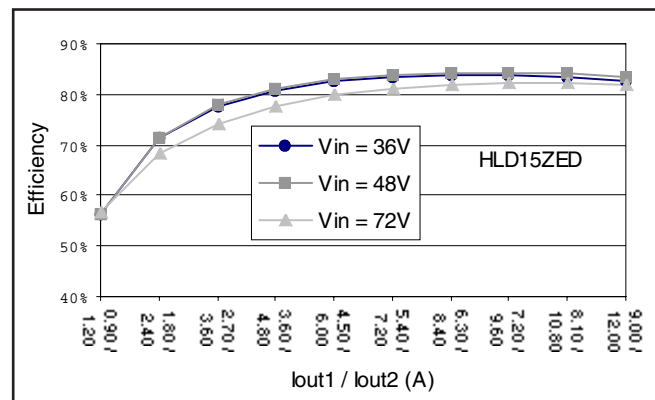
TECHNICAL SPECIFICATIONS

Input		
Parameter	Maximum	Unit
Voltage Range		
24 nom.	18-36	VDC
48 nom.	36-72	
Transient Voltage Withstand		
24 nom.	50/100	V/ms
48 nom.	100/100	
Turn-on Time	20	mS
Input Reflected Ripple Current	80	mA _{pk-pk}
V _{in} UVLO Window		
24 nom.	17/15	V _{on} /V _{off}
48 nom.	34/30	

Output		
Parameter	Maximum	Unit
Setpoint Accuracy	±1	% V _{out}
Line Reg. V _{in} min. – V _{in} max., I _{out} rated		% V _{out}
Output 1	0.2	% V _{out}
Output 2	1.0	
Load Reg. I _{out} min. – I _{out} max., V _{in} nom.		% V _{out}
Output 1	0.5	% V _{out}
Output 2	1.0	
Min. Output Current, each Output	1.0	A
Dynamic Reg., 25% Loadstep		
Pk Deviation	4	% V _{out}
Settling Time	500	µS
Voltage Trim Range	±10	%
Power Limit Threshold Range	110-150	% P _{out} rated
OVP Trip Range	115-140	% V _{out}

General		
Parameter	Maximum	Unit
Switching Frequency	300	KHz
Remote ON/OFF		
Positive	On>3.5/Off<1.8	V
Negative (optional)	On<1.8/Off>3.5	V
Isolation Input-Output	1500	VDC
Temp. Coefficient	0.03	%/°C
Board Temp		
Operating Range	-40 to +100	°C
Storage Range	-40 to +125	°C
Thermal Shutdown Range	105-115	°C
Humidity max, Non-Condensing	95	%
Safety	Pending	
Weight (approx)	2	Oz.

Notes
Specifications typically at 25°C, nominal line, and full load unless otherwise stated.
Specifications subject to change without notice.
Patents Pending



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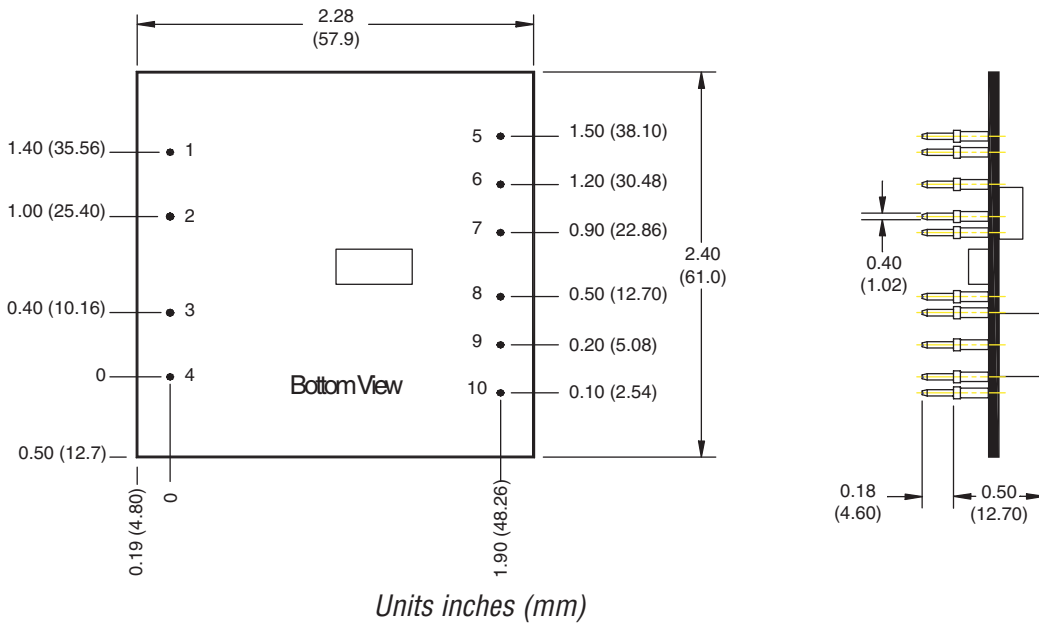
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MODELS - (See the last page of section for options.)

MODEL	INPUT VOLTAGE (VOLTS)	INPUT VOLTAGE RANGE (VOLTS)	MAXIMUM INPUT CURRENT (AMPS)*	OUTPUT VOLTAGE (VOLTS)	RATED OUTPUT CURRENT (AMPS)**	RIPPLE & NOISE pk-pk (mV)	TYPICAL EFFICIENCY**
HLD15YGE	24	18-36	4.4	5.0/3.3	12/15	100/100	84%
HLD15YGB	24	18-36	4.4	5.0/1.8	12/15	100/100	83%
HLD15YED	24	18-36	4.5	3.3/2.5	15/15	100/100	81%
HLD15YEB	24	18-36	4.5	3.3/1.8	15/15	100/100	81%
HLD15ZGE	48	36-72	2.3	5.0/3.3	12/15	100/100	86%
HLD15ZGB	48	36-72	2.4	5.0/1.8	12/15	100/100	85%
HLD15ZED	48	36-72	2.4	3.3/2.5	15/15	100/100	83%
HLD15ZEB	48	36-72	2.4	3.3/1.8	15/15	100/100	83%
HLD15ZED-G****	48	36-72	2.4	3.3/2.5	15/15	100/100	83%

- NOTES:**
- * Maximum input current at minimum input voltage, maximum rated output power.
 - ** At nominal V_{in} , rated output.
 - *** Current can be drawn from any single output to its maximum rated value, or from both outputs to a combined power level of 60W.
 - **** -G overcurrent protection is latched; all other models hiccup.

MECHANICAL DRAWING



PIN	Function
1	-V _{in}
2	No Pin
3	Shutdown
4	+V _{in}
5	+V _{out2}
6	V _{out2} RTN
7	V _{out2} Trim
8	+V _{out1}
9	V _{out1} RTN
10	V _{out1} Trim

Tolerances	
Inches:	(Millimeters)
.XX ± 0.020	.X ± 0.5
.XXX ± 0.010	.XX ± 0.25
Pin:	
± 0.002	± 0.05
(Dimensions as listed unless otherwise specified.)	

OPTIONS

When ordering equipment options, use the following suffix information. Select the option(s) that you prefer and add them to the model number. Example ordering options are located below the options table.

OPTION	SUFFIX	APPLICABLE SERIES	REMARKS
Negative Logic	N	HAS, HBD, HBS, HES, HLS, HLD, LES, QBS, QES, QLS, TES, TQD	TTL "Low" Turns Module ON TTL "High" Turns Module OFF
Lucent-Compatible	T	HAS, HBD, HBS, HES, HLS, QBS, QES, QLS	
Terminal Strip	TS	XWS, XWD, XWT	
Trim	1	IAS, LES	
Enable	2	IAD, IAS, LES, SMS	
Trim and Enable	3	IAS, LES	
Current Share	4	SMS	
Headerless	Y	Encapsulated EWS, IWS, OWS	
Pin Length and Heatsink Options			Standard Pin Length is 0.180" (4.6mm)
0.110" (2.8mm) Pin Length	8	All Units (Except SMS)	
0.150" (3.8mm) Pin Length	9	All Units (Except SMS)	
0.24" (6.1mm) Horizontal Heatsink	1H	All Units (All Units Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad
0.24" (6.1mm) Vertical Heatsink	1V	All Units (All Units Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad
0.45" (11.4mm) Horizontal Heatsink	2H	All Units (All Units Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad
0.45" (11.4mm) Vertical Heatsink	2V	All Units (All Units Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad
0.95" (24.1mm) Horizontal Heatsink	3H	All Units (All Units Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad
0.95" (24.1mm) Vertical Heatsink	3V	All Units (All Units Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad

Example Options:

HBS050ZG-ANT3V = HBS050ZG-A with negative logic, Lucent-compatible trim, and 0.95" vertical heatsink.

LES015YJ-3N = LES015YJ with optional trim and enable, negative logic.

QBS066ZG-AT8 = QBS066ZG-A with Lucent-compatible trim and 0.110" pin length.

NUCLEAR AND MEDICAL APPLICATIONS - Power-One products are not authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the President of Power-One, Inc.

TECHNICAL REVISIONS - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.
