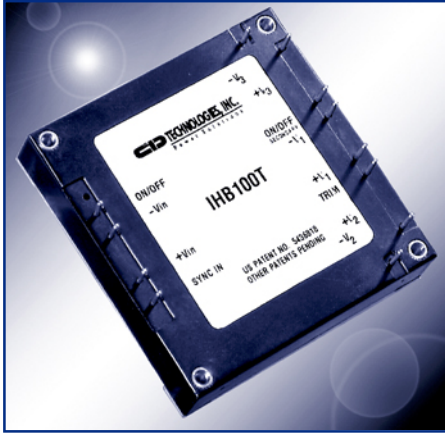


IHB100T

100 Watt Triple Output Half Brick DC/DC Converter



- 33 - 75V Input Range
- Each Channel Independently Current Limited
- High Efficiency: 88% Typical
- 1500VDC Isolation Between Input and Output
- Operation to 100°C Baseplate Temperature
- 50μs Transient Recovery, 0-90% Load Step
- Primary & Secondary Remote On/Off
- IHB100T Series Approved to UL/CUL 1950, EN60950

The IHB100T series triple output standard half brick modules are designed for today's demanding industrial applications. Available in two wide range inputs, these isolated converters offer many features in the standard models. With a complement of safety agency approvals and low noise operations, the converters respond extremely fast to change in load conditions. Inherent in the design are very well-controlled output voltage and minimal need for minimum loading on main (V1) output.



PRODUCT SELECTION CHART

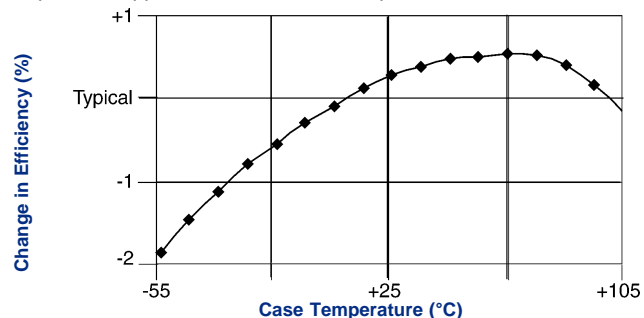
MODEL	INPUT VOLTAGE (VDC)	RATED VOUT (VDC)			RATED MAXIMUM IOUT (A)		
		V1 (±)	V2 (±)	V3 (±)	V1(±)	V2(±)	V3(±)
IHB100T480312	48 (33-75)	3.3	12	12	30	4.2	4.2
IHB100T480315	48 (33-75)	3.3	15	15	30	3.4	3.4
IHB100T480512	48 (33-75)	5.1	12	12	20	4.2	4.2
IHB100T480515	48 (33-75)	5.0	15	15	20	2.0	2.0

ABSOLUTE MAX. RATINGS

Output Short-Circuit Duration	Continuous
Baseplate Temperature	+100°C
Lead Temperature (soldering, 10 seconds max)	+300°C
Storage Temperature	+125°C
Input to Output Isolation	1500 VDC

EFFICIENCY vs TEMPERATURE

T_{CASE} = +40°C, nominal input voltage, nominal load, recommended external components applied, unless otherwise specified.*



SPECIFICATIONS, ALL MODELS

Specifications are at $T_{CASE} = +40^{\circ}C$ nominal input voltage unless otherwise specified.

PARAMETER	CONDITIONS	MIN			TYP			MAX			UNITS
		MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX	
INPUT	Voltage Range			33		48			75		V _{DC}
	Reflected Ripple Current	Peak - Peak							370		mA
	Input Ripple Rejection	DC to 1KHz		50		60					dB
	Maximum Input Current	Output Power = 100W $V_{IN} = 30V$							5		A
	No Load Power Dissipation	$P_{OUT} = 0, V_{IN, Min} < V_{IN} < V_{IN, Max}$							6		W
	Inrush Charge								0.247		mC
	Quiescent Operating Current										
	Primary On/Off Disabled					7.5			10		mA
	Secondary On/Off Disabled					15			20		mA

PARAMETER	CONDITIONS	MIN			TYP			MAX			UNITS	
		MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX		
ISOLATION												
GENERAL	Input to Each Output	Peak Test		1500							V _{DC}	
	Input to Baseplate			1500							V _{DC}	
	Channel to Channel	Any Channel to Any Channel		500							V _{DC}	
	Resistance, Input - Output			10							MΩ	
	Capacitance, Input - Output					2000					pF	
	Leakage Current	$V_{ISO} = 240V_{AC}, 60Hz$					180				μA, rms	
	GENERAL											
	Set Point Accuracy	$V_{IN} = \text{Nominal}, 50\% \text{ Load}$							1			%
	Turn-on Time	Within 1% of Nominal V_{OUT}					3.5		5			mSec
	Remote On/Off Control Inputs											
Primary	Open Collector/Drain											
	Sink Current-Logic Low	$V_{IN} = V_{MAX}$						7			mA	
	V _{low}							0.8			V	
Secondary	Open Collector/Drain								Open Collector			
	Sink Current-Logic Low							100			μA	
	V _{low}							0.4			V	
External Synchronization Input	V _{high}								Open Collector			
	Frequency			440					520		KHz	
	Pulse Width			150					320		nSec	
	Source Impedance								47		Ω	
	Input High Voltage			4					5		V	
	Input Low Voltage			0					1		V	
	Input Impedance					470					Ω	
	Switching Frequency			470		480			490		KHz	
	Weight								3 (85)		oz (g)	
	TEMPERATURE											
Operation/Specification	Case Temperature			-40					+100		°C	
Storage				-55					+125		°C	
Shutdown				+100					+115		°C	
Thermal Impedance	Case to Ambient					8.2					°C/W	

PARAMETER	CONDITIONS	V1			V2			V3			UNITS	
		Min	Nom	Max	Min	Nom	Max	Min	Nom	Max		
IHB100T480312 OUTPUT	Output Power	Total Combined O/P Power = 100 Watts Max										
	Set Point Voltage		50	100		25	50		25	50	W	
	Output Current, I_{OUT}	I_{ONom}	3.3			12.2			12.2		V	
	Output Ripple, p-p	DC to 20MHz*	0.5	15	30.0	0	2.1	4.2	0	2.1	4.2	A
	Output Adjust Range	*	3.15		3.80							mV
	Output Temperature Drift			.02	.05							V
	Line Regulation	$V_{IN, Min} \leq V_{IN} \leq V_{IN, Max}$ $I_O = I_{O, Nom}$		.02	.05		.02	.05		.02	.05	%/°C
	Load Regulation	Min Load to Rated Load		0.05	0.10		1.0	2.0		1.0	2.0	%
	Current Limit Inception	Other Outputs Min Load		0.50	1.00		See Regulation Curves			See Regulation Curves		%
	Short-Circuit Current			38			6.0			6.0		A
	Transient Response	50 to 100% Load Step		30	38		5.0	6.0		5.0	6.0	A
	Peak Deviation			150	250							mV
	Settling Time	$V_{OUT}, 1\% \text{ of } V_{OUT, Nom}$		35	50							μSec
	Overvoltage Limit			4.2	5.0							V
	Efficiency	$I_{OUT1} = 15A, (I_{OUT2} + I_{OUT3}) = 4.2A$ F.L. $V_{IN} = \text{Nominal}$		85	86							%

* See Application Notes available on the web at www.cdpowerelectronics.com

SPECIFICATIONS, ALL MODELS

Specifications are at $T_{CASE} = +40^{\circ}C$ nominal input voltage unless otherwise specified.

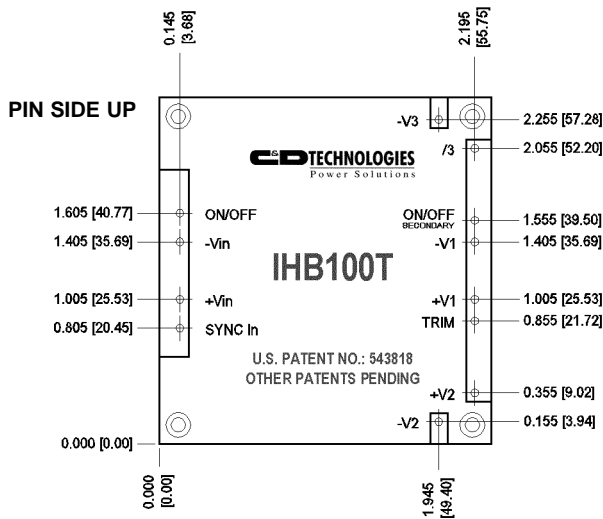
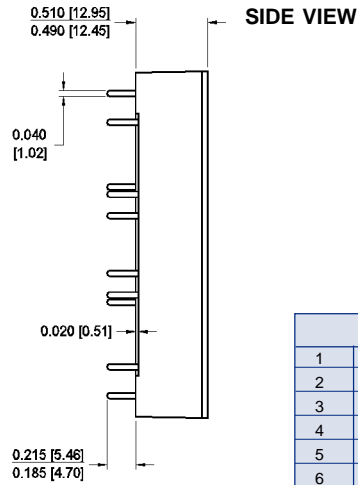
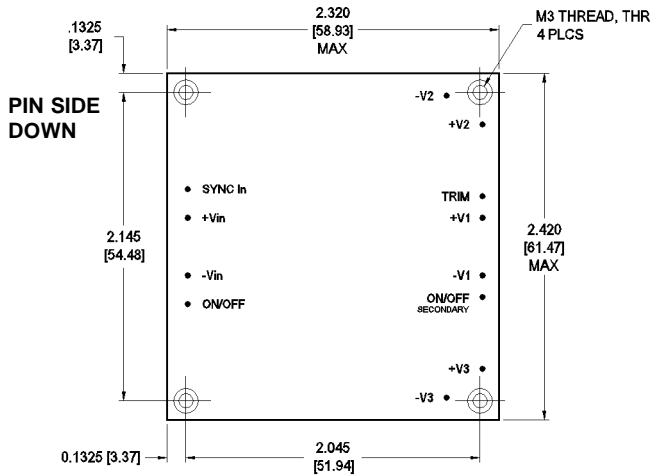
PARAMETER	CONDITIONS	V1			V2			V3			UNITS	
		Min	Nom	Max	Min	Nom	Max	Min	Nom	Max		
IHB100T480315 OUTPUT	Output Power	Total Combined O/P Power = 100 Watts Maximum									W	
	Set Point Voltage	$I_{O,Nom}$									V	
	Output Current, I_{OUT}	0.5	15	30.0	0	1.66	3.33	0	1.66	3.33	A	
	Output Ripple, p-p	DC to 20MHz*									mV	
	Output Adjust Range	*									V	
	Output Temperature Drift										Dependent on V1	
	Line Regulation	$V_{IN,Min} \leq V_{IN} \leq V_{IN,Max}$ $I_O = I_{O,Nom}$	.02	.05		.02	.05		.02	.05	%/°C
	Load Regulation	Min Load to Rated Load	0.05	0.10		1.0	2.0		1.0	2.0	%	
	Current Limit Inception	Other Outputs Min Load	0.50 1.0			See Regulation Curves			See Regulation Curves			%
	Short-Circuit Current		38			5.0			5.0			A
	Transient Response	50 to 100% Load Step	30 38			4.0 5.0			4.0 5.0			A
	Peak Deviation		150 250									mV
	Settling Time	V_{OUT} , 1% of $V_{OUT,Nom}$	35 50									µSec
	Overvoltage Limit		4.2			5.0						V
	Efficiency	$I_{OUT1}=15A, (I_{OUT2}+I_{OUT3}) = 3.4A$ F.L. V_{IN} =Nominal	85 86									%

PARAMETER	CONDITIONS	V1			V2			V3			UNITS	
		Min	Nom	Max	Min	Nom	Max	Min	Nom	Max		
IHB100T480512 OUTPUT	Output Power	Total Combined O/P Power = 100 Watts Combined									W	
	Set Point Voltage	$I_{O,Nom}$									V	
	Output Current, I_{OUT}	0.5	10	20	0	2.1	4.2	0	2.1	4.2	A	
	Output Ripple, p-p	DC to 20MHz*									mV	
	Output Adjust Range	*									V	
	Output Temperature Drift										Dependent on V1	
	Line Regulation	$V_{IN,Min} \leq V_{IN} \leq V_{IN,Max}$ $I_O = I_{O,Nom}$	.02	.05		.02	.05		.02	.05	%/°C
	Load Regulation	Min Load to Rated Load	0.05	0.10		1.0	2.0		1.0	2.0	%	
	Current Limit Inception	Other Outputs Min Load	0.50 1.0			See Regulation Curves			See Regulation Curves			%
	Short-Circuit Current		26.0			6.0			6.0			A
	Transient Response	50 to 100% Load Step	20.0 26.0			5.0 6.0			5.0 6.0			A
	Peak Deviation		200 300									mV
	Settling Time	V_{OUT} , 1% of $V_{OUT,Nom}$	35 50									µSec
	Overvoltage Limit		6.0			7.0						V
	Efficiency	$I_{OUT1}=10A, (I_{OUT2}+I_{OUT3}) = 4.2A$ F.L. V_{IN} =Nominal	86 87									%

PARAMETER	CONDITIONS	V1			V2			V3			UNITS	
		Min	Nom	Max	Min	Nom	Max	Min	Nom	Max		
IHB100T480515 OUTPUT	Output Power	Total Combined O/P Power = 100 Watts Max									W	
	Set Point Voltage	$I_{O,Nom}$									V	
	Output Current, I_{OUT}	0.5	10	20	0	1.66	3.33	0	1.66	3.33	A	
	Output Ripple, p-p	DC to 20MHz*									mV	
	Output Adjust Range	*									V	
	Output Temperature Drift										Dependent on V1	
	Line Regulation	$V_{IN,Min} \leq V_{IN} \leq V_{IN,Max}$ $I_O = I_{O,Nom}$	.02	.05		.02	.05		.02	.05	%/°C
	Load Regulation	Min Load to Rated Load	0.05	1.0		1.0	2.0		1.0	2.0	%	
	Current Limit Inception	Other Outputs Min Load	0.05 1.0			See Regulation Curves			See Regulation Curves			%
	Short-Circuit Current		26.0			5.0			5.0			A
	Transient Response	50 to 100% Load Step	20.0 26.0			4.0 5.0			4.0 5.0			A
	Peak Deviation		200 300									mV
	Settling Time	V_{OUT} , 1% of $V_{OUT,Nom}$	35 50									µSec
	Overvoltage Limit		6.0			7.0						V
	Efficiency	$I_{OUT1}=10A, (I_{OUT2}+I_{OUT3}) = 4.2A$ F.L. V_{IN} =Nominal	86 87									%

* See Application Notes available on the web at www.cdpowerelectronics.com

MECHANICAL



PIN CONNECTIONS

Pin No.	Function
1	PRIMARY ON/OFF
2	-VIN
3	+VIN
4	SYNC IN
5	-V2
6	+V2
7	TRIM
8	+V1
9	-V1
10	SECONDARY ON/OFF
11	+V3
12	-V3

NOTES:

All dimensions are in inches (millimeters).
 PIN PLACEMENT TOLERANCE: ± 0.005 "
 MECHANICAL TOLERANCE: ± 0.015 "
 Marked with: specific model ordered, date code, job code.
 MATERIAL: Units are encapsulated in a low thermal resistance molding compound which has excellent chemical resistance and electrical properties in high humidity environments and over a wide operating temperature range. The encapsulant and outer shell of the unit have UL94V-0 ratings. Lead material is solder plated to allow ease of solderability.

C&D Technologies (Power Electronics) Ltd.
 Shannon, Co. Clare, Ireland
 Tel: +353.61.474.133 Fax: +353.61.474.141

Power Electronics Division, United States
 3400 E Britannia Drive, Tucson, Arizona 85706
 Tel: 800.547.2537 Fax: 520.770.9369

C&D Technologies, (NCL)
 Milton Keynes MK14 5BU UK
 Tel: +44 (0)1908 615232 Fax: +44 (0)1908 617545

Any data, prices, descriptions or specifications presented herein are subject to revision by C&D Technologies, Inc. without notice. While such information is believed to be accurate as indicated herein, C&D Technologies, Inc. makes no warranty and hereby disclaims all warranties, express or implied, with regard to the accuracy or completeness of such information. Further, because the product(s) featured herein may be used under conditions beyond its control, C&D Technologies, Inc. hereby disclaims all warranties, either express or implied, concerning the fitness or suitability of such product(s) for any particular use or in any specific application or arising from any course of dealing or usage of trade. The user is solely responsible for determining the suitability of the product(s) featured herein for user's intended purpose and in user's specific application. C&D Technologies, Inc. does not warrant or recommend that any of its products be used in any life support or aviation or aerospace applications.