

# Bill of Materials

TI DESIGNS

TIDM-HV-1PH-DCAC

Item	Qty	Reference	Part Description	Manufacturer	Manufacturer Part Number	Digikey Part No.
1	1	U1	Hall effect current sensor, 6Amps AC/DC	LEM USA Inc.	LTSR 6-NP	398-1021-5-ND
2	4	U2, U3, U5, U6	IC Delta-Sigms Modulator, 250mV linear Input Range, external clock , 16SOIC	Texas Instruments Inc.	AMC1304M25	296-42617-ND
3	4	U4, U7, U8, U17	DC-DC Converter 1W 3KVDC ISOL (5V->5V)	Texas Instruments Inc.	DCH010505SN7	296-20638-ND
4	1	U9	Transistor 7NPN Darlington Array 50V 0.5A, 16SOIC	Texas Instruments Inc.	ULN2003ADR	296-1368-1-ND
5	1	U10	OPAMP IC Genral Purpose 38MHZ RRO, 14SOIC	Texas Instruments Inc.	OPA4350UA	OPA4350UA-ND
6	1	U12	Adjustable Switching regulator, MODULE PIP .9-5.5V 2.25A HORZ TH, 5 DIP Module	Texas Instruments Inc.	PTH08080WAH	296-20432-ND
7	1	U13	Digital Isolators 2.5KV GEN PURP 16SOIC	Texas Instruments Inc.	ISO7242CDW	296-22966-5-ND
8	2	U14, U16	IC REG LDO 3.3V 0.8A SOT223	Texas Instruments Inc.	TLV1117-33CDCYR	296-21112-2-ND
9	1	U15	IC REG LDO ADJ 50MA SC70-5	Texas Instruments Inc.	TPS71501DCKR	296-12957-2-ND
10	4	Q1, Q2, Q3, Q4	IGBT Transistors TrenchStop 5, IGP20N65H5, 650V	Infineon Technologies	IGP20N65H5XKSA1	IGP20N65H5XKSA1-ND
11	1	Q5	MOSFET N-CH 100V 0.9A TO92-3	Diode Incorporated	ZVN4310A	ZVN4310A-ND
12	4	D1,D2,D3,D4	IDH06G65C5DIODE SCHOTTKY 650V 6A TO220-2	Infineon Technologies	IDH06G65C5	IDH06G65C5-ND
13	2	D5, D6	1N4937	Fairchild Semiconductor	1N4937	1N4937FSTR-ND
14	2	D7, D8	LED			404-1021-1-ND
15	4	ZD2, ZD3, ZD4, ZD5	15VCSM22131	Micro Commercial Co.	BZV55C15-TP	BZV55C15-TPMSTR-ND
16	1	L1	3mH Custom Inductor, G154038LF, GCi Technologies	GCi Technologies	G154038LF	
17	2*	L2, L2N	0.47mH Inductor, Bourns Inc ( * Only needed in grid connected inverter mode, must be populated with short for voltage source inverter mode)	Bourns Inc.	2300HT-471-H-RC	M8933-ND
18	16	L3, L5, L6, L7, L8, L9, L10, L11, L12, L13, L14, L15, L16, L17,L18, L19	INDUCTOR 22UH 13MA 0805	Murata	LQM21FN220N00L	490-4030-1
19	1	L4	CHOKE COMM MODE W/HDR 1mH 20A	Bourns Inc.	8121-RC	M8916-ND
20	1	S1	15V power switch from Mountain Manufacturer part number 108-2AS1T1203-EVX	Mountain Switch	108-2AS1T1203-EVX	
21	1	SW1	The Turn on Key	E-Switch	TL1105TF100Q	TL1105TF100Q-ND

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22	2	RY1, RY2	G5LA-14-DC12	Omron	G5LA-14 DC12	Z2561-ND
23	4	H1, H2, H3, H4	HEATSINK TO-220 VERT MT BLK 1.5", MF# 637-15ABPE	Wakefield-Vette	637-15ABPE	345-1112-ND
24	1	H5	180 pin (120 + 60) HSEC8 socket, samtec	Samtec	HSEC8-130-01-L-DV-A & HSEC8-160-01-L-DV-A-BL	
25	0	TP1, TP2, TP3, TP4, TP5, TP7, TP8, TP9, TP10, TP11	The test points			Not connected
26	8	Heat Sink Isolator Pads	THERM PAD TO-220 W/ADH .009" SP9, MF# SP900S-0.009-AC-58	Berququist	SP900S-0.009-AC-58	BER183-ND
27	4	Nut	HEX NUT 1/4" 4-40, MF# HNZ 440	B&F Fastener Supply	HNZ 440	H216-ND
28	4	Machine Screw	MACHINE SCREW PAN PHILLIPS 4-40, MF# PMS 440 0050 PH	B&F Fastener Supply	PMS 440 0050 PH	H346-ND
29	4	Lock Washer	WASHER INT TOOTH #4 STEEL, MF# INTLWZ 004	B&F Fastener Supply	INTLWZ 004	H236-ND
30	8	Heat sink spacers	WASHER FLAT #4 NYLON, DK 3118K	Keystone Electronics	3118	36-3118-ND
31	8	Insulators	MNI-HT#4-220, WASHER SHOULDER #4 POLY SULFIDE	Essentra Components	MNI-HT-4-220	MNI-HT-4-220-ND
32	1	C1	20uF, 305VAC rated, Polypropylene Capacitor, ( * for voltage source inverter, for grid connected inverter a different value is used refer to the user guide for the grid connected inverter for the value)	EPCOS (TDK)	B32928C3206M*	495-6451-ND
33	3	C3,C5,C6	0.022u/630V, Metallized Polypropylene Capacitor	Panasonic	ECW-F6223HL	P12125-ND
34	1	C7	CAP ALUM 470UF 20% 450V SNAP	United Chemi-Con	ESMQ451VSN471MA40S	565-2798-ND
35	4	C4,C8,C13,C14	Cap Cer. 2200pF 250VAC X7R 2220	Murata	GA355QR7GF222KW01L	490-3480-2-ND
36	1	C9	Cap Cer. 10nF 50V 10% X5R 0805	Standard Part		
37	DNP	C10, C50, C55	DNP			
38	5	C11, C57, C68, C73, C74	Cap Tantalum 22uF 16V 20% 1210	Standard Part		
39	15	C12, C15, C16, C17, C18, C25, C26, C27, C30, C32, C33, C37, C40, C64, C66	Cap Cer. 0.1uF 25V 10% X5R 0805	Standard Part		
40	4	C19, C20, C31, C36	Cap Cer. 330pF 25V 10% X5R 0805	Standard Part		
41	8	C21, C22, C23, C24, C34, C35, C38, C39	Cap Cer. 10pF 25V 20% 0805 X5R, 25V	Standard Part		
42	6	C28, C29, CC41, C42, C43, C44	Cap Cer. 1uF 25V 10% 0805 X5R 25V	Standard Part		
43	DNP	C45, C48, C55	DNP	Standard Part		
44	4	C47, C53, C54, C58	Cap Cer. 0.22uF 25V 10% X5R 0603	Standard Part		
45	6	C46, C49, C51, C63, C65, C72	Cap Cer. 100nF 25V 10% X7R 0603	Standard Part		
46	3	C52	Cap Cer. 1uF 25V 10% X7R 0603	Standard Part		
47	4	C56, C61,C62,C69	CAP ALUM 100UF 20% 35V SMD	Panasonic	EEE-1VA101UP	PCE3950TR-ND
48	1	C59	CAP ALUM 330UF 20% 35V SMD	Panasonic	EEE-FT1V331AP	PCE5018TR-ND
49	1	C67	0.1uF/100V	AVX Corporation	SA111E104MAR	478-3154-1-ND
50	2	C70, C71	Cap Cer. 0.47uF 25V 10% X7R 0603	Standard Part		
51	9	R2, R3, R5, R8, R11, R15, R25, R26, R27,	Res. 1M 0805 1%	Standard Part		

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52	6	R17, R20, R32, R37,R47,R48	Res. 2M 0805 1%	Standard Part		
53	1	R16	Res. 11K 0805 1%	Standard Part		
54	2	R56, R60	Res. 1K 0603 1%	Standard Part		
55	2	R55, R61	Res. 11K 0603 1%	Standard Part		
56	3	R58, R66, R65	Res. 68 0603 1%	Standard Part		
57	6	R57,R62,R75,78, R79, R80,	Res 10K 0603 1%	Standard Part		
58	2	R63, R68	Res 330K 0603 1%	Standard Part		
59	2	R64,R67	Res 499K 0603 1%	Standard Part		
60	1	R59	Res 100hm, 0603, 1%	Standard Part		
61	2	R70, R71	Res 00hm, 0805, 1%	Standard Part		
62	1	R69	Res 3.3K, 0805, 1%	Standard Part		
63	1	R73	Res 270K 0603 1%,	Standard Part		P270KGTR-ND
64	1	R74	Res. 30K 0603 1%	Standard Part		P30.0KHTR-ND
65	1	R72	Res. 330R 0805 1%	Standard Part		P330CTR-ND
66	1	R76	Res. 1.2K 0603 5%	Standard Part		P1.2KGTR-ND
67	1	R77	Res. 1.5K 0603 5%	Standard Part		P1.5KGTR-ND
68	8	R6, R7, R13, R12, R18, R19, R23, R24	Res. 47K 1210 5%/1% 0.5W	Standard Part		P47KVTR-ND
69	4	R9, R10, R21, R22	Res. 100hm, 1210 5%/1% 0.5W	Standard Part		P10VTR-ND
70	5	R14, R52, R53, R41, R43	Res. 2.4K, 0805 1%	Standard Part		
71	4	R28, R29, R36, R35	Res. 1.33K 1210 5% 0.5W	Standard Part		541-1.33KAATR-ND
72	4	R33	DNP			
73	8	R39, R42, R40, R44, R46, R49, R51, R54	Res. 12R, 0805 1%	Standard Part		
74	1	R30	Res. 150R 0805 5%	Standard Part		P150ATR-ND
75	1	R31	Res. 3K 0805 5%	Standard Part		
76	2	Rsh1, Rsh2	Res. - 20mOhms, 1%, 3W, 2512	Bourns	CRA2512-FZ-R020ELF	CRA2512-FZ-R020ELFCT-ND
77	DNP	R38, R50	DNP			
78	2	R34, R45	Res. 0R, 0805 5%	Standard Part		
79	3	F1,F2,F3	Fuse Holder	Shurter Inc.	3101.004	486-1159-ND
80	2	Fuse	2x FUSE 250V IEC SLO 5X20MM 10A	BEL FUSE	5SF 10-R	507-1235-ND
81	1	Fuse	1x FUSE 250V IEC SLO 5X20MM 2A	BEL FUSE	5SF 4-R	507-1231-ND
82	3	Fuse Cap	Fuse Cap for 5x20mm fuses flush mount	Littlefuse Inc.	835000000005	WK6234-ND
83	DNP	RV1	VARISTOR 275V RMS 10MM RADIAL	EPCOS (TDK)	S10K275E2	495-1433-ND
84	1	J2	Power jack 2.1 x 5.5 mm	CUI Inc.	PJ-002AH	CP-002AH-ND
85	1	J1	CONN AC RECEPT 9MM R/A FLAT PCB	Qualtek	703W-00/54	Q220-ND
86	4	CN1, CN2, CN3, CN4	The Driver Module (these are custom separate Modules)			Driver board
87	1	CN5, CN6	The External SCI port			
88	5	JP3, JP2, JP4	Standard 0.1" SIL headers, cut to fit, total needed 1x2	Standard Part		
89	1	CN7	The DC-DC signal interface. Standard 0.1" SIL headers, cut to fit, total needed 2x5	Standard Part		

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90	1	CON1	DC Connector Plug	On Shore Technology Inc.	EDZ960/3, OSTOQ030151	ED1734-ND Plug ED2851-ND Header
91	DNP	P1	PLC Interface/Not Connected	DNP		Not connected
92	DNP	P2	PLC Interface/Not Connected	DNP		Not connected
93	1	PW1	PR902 Aux Power Supply, Refer to PMP design number	Texas Instruments Inc.		