

MCU001 REV A Bill of Materials

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
I/PCB	1		MCU001	Any	Printed Circuit Board	
C1	1	20uF	B32928C3206M	TDK	CAP, Film, 20 μ F, 630 V, +/- 20%, TH	57.5x30mm
C2, C11, C57, C60, C68	5	10uF	TAJB106K016RNJ	AVX	CAP, TA, 10 μ F, 16 V, +/- 10%, 2.8 ohm, SMD	3528-21
C3, C5, C6	3	0.022uF	ECW-F6223HL	Panasonic	CAP, Film, 0.022 μ F, 630 V, +/- 3%, TH	12.5x6.2mm
C4, C8, C13, C14	4	2200pF	GA355QR7GF222KW01L	MuRata	CAP, CERM, 2200 pF, 250 V, +/- 10%, X7R, 2220	2220
C7	1	470uF	ESMQ451VSN471MA40S	Chemi-Con	CAP, AL, 470 μ F, 450 V, +/- 20%, TH	D35xL40mm
C12	1	0.1uF	08053C104KAT2A	AVX	CAP, CERM, 0.1 μ F, 25 V, +/- 10%, X7R, 0805	0805
C15, C16, C17, C18, C25, C26, C27, C30, C32, C33, C37, C40	12	0.1uF	GRM219R71C104KA01D	MuRata	CAP, CERM, 0.1uF, 16V, +/-10%, X7R, 0805	0805
C19, C20, C31, C36	4	330pF	08055C331KAT2A	AVX	CAP, CERM, 330pF, 50V, +/-10%, X7R, 0805	0805
C21, C22, C23, C24, C34, C35, C38, C39	8	10pF	08055A100JAT2A	AVX	CAP, CERM, 10pF, 50V, +/-5%, C0G/NP0, 0805	0805
C28, C29, C41, C42, C43, C44	6	1uF	GRM21BR71E105KA99L	MuRata	CAP, CERM, 1 μ F, 25 V, +/- 10%, X7R, 0805	0805
C46, C47, C49, C51, C53, C54, C72	7	0.22uF	C0603C224J3RAC7867	Kemet	CAP, CERM, 0.22 μ F, 25 V, +/- 5%, X7R, 0603	0603
C52	1	1uF	C0603C105K3RACTU	Kemet	CAP, CERM, 1 μ F, 25 V, +/- 10%, X7R, 0603	0603
C56, C61, C62, C69	4	100uF	EMVA500ADA101MHA0G	Nippon Chemi-Con	CAP, AL, 100uF, 50V, +/-20%, ohm, SMD	HA0
C59	1	330uF	EMVA250ADA331MHA0G	Chemi-Con	CAP, AL, 330 μ F, 25 V, +/- 20%, SMD	HA0
C63, C65	2	0.1uF	C0603C104K3RACTU	Kemet	CAP, CERM, 0.1 μ F, 25 V, +/- 10%, X7R, 0603	0603
C64, C66	2	0.1uF	C0805C104K3RACTU	Kemet	CAP, CERM, 0.1 μ F, 25 V, +/- 10%, X7R, 0805	0805
C67	1	0.1uF	SA111E104MAR	AVX	CAP, CERM, 0.1 μ F, 100 V, +/- 20%, Z5U, D3.05xL4.32mm	D3.05xL4.32mm
C70, C71	2	0.47uF	GRM188R71E474KA12D	MuRata	CAP, CERM, 0.47 μ F, 25 V, +/- 10%, X7R, 0603	0603
CN1, CN2, CN3, CN4	4		MCU007	Any	IGBT Gate Driver Daughter Board for MCU001 TIEVM-HV-1PH-DCAC	
D1, D2, D3, D4	4	1200V	C4D08120A	Cree	Diode, Schottky, 1200 V, 8 A, TH	TO-220-2
D5, D6	2	600V	1N4937-E3/54	Vishay-Semiconductor	Diode, Switching, 600 V, 1 A, TH	DO-41
D7, D8	2	Green	LG R971-KN-1	OSRAM	LED, Green, SMD	2x1.25mm
F1, F2, F3	3		3101.0040	Schurter	Fuse Holder, 400 V, 16 A, TH	Fuse Holder for 5x20mm
F4	1		5SF 10-R	Bel Fuse	Fuse, 10 A, 250 VAC, N/A	
F5	1		5SF 4-R	Bel Fuse	Fuse, 4 A, 250 VAC, N/A	
H1, H2, H3, H4	4		513201B02500G	Aavid	HEATSINK TO-218/TO-247 W/PINS 2"	12.70x50.80x34.92 mm
H6, H7, H11, H12, H13, H14	6		NY PMS 440 0025 PH	B&F Fastener Supply	Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead	Screw
H8, H9, H10, H15, H16, H17, H18, H27	8		3118	Keystone	WASHER FLAT #4 NYLON	
H19, H20, H21, H22	4		HNSS440	B&F Fastener Supply	Nut, Hex, 1/4" Thick, #4-40	

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H23, H24, H25, H26	4		PMS 440 0050 PH	B&F Fastener Supply	MACHINE SCREW PAN PHILLIPS 4-40	
H28, H29, H30, H31, H32, H33, H34, H35	8		MNI-HT-4-220	Essentra Components	WASHER SHOULDER #4 POLY SULFIDE	
H36, H37, H38, H39	4		INTLWZ 004	B&F Fastener Supply	WASHER INT TOOTH #4 STEEL	
H40	1		18 AWG Insulated(PVC) Wire Cut 2 inches, Alpha Wire Part Number 461816 BL005	Any	Installed across L2	
H41	1		18 AWG Insulated(PVC) Wire Cut 2 inches, Alpha Wire Part Number 461816 BL005	Any	Installed across L2N	
H42, H43, H44	3		83500000005	Littelfuse	Cap for 5x20mm Fuses	
J1	1		703W-00/54	Qualtek Electronics Corporatio	AC Receptacle, 10A 250VAC	20X50X28.7mm
J2	1		PJ-002AH-SMT-TR	CUI Inc.	Power Jack, SMT	14.8x11x12.6mm
J3	1		18 AWG Insulated(PVC) Wire Cut 2 inches, Alpha Wire Part Number 461816 BL005	Any	Installed across J3	
J4, J5, J6, J7, J8, J9, J10	7		HTSW-102-07-G-S	Samtec	Header, 100mil, 2x1, Gold, TH	Header, 100mil, 2x1, TH
J13	1		HTSW-103-07-G-S	Samtec	Header, 100mil, 3x1, Gold, TH	Header, 100mil, 3x1, TH
J14	1		TSW-105-07-F-D	Samtec	Header, 2.54mm, 5x2, Gold, Black, TH	Header, 2.54mm, 5x2, TH
J15	1		HSEC8-160-01-L-DV-A-BL	Samtec	C2000 controlCARD-120HSEC connector, SMT	C2000 pin numbering
J16	1		HSEC8-130-01-L-DV-A	Samtec	C2000 controlCARD-180HSEC (60-pin addon) connector, SMT	C2000 pin numbering
J17	1		1714984	Phoenix Contact	Terminal Block, 3x1, 9.52MM, TH	Terminal Block, 3x1, 9.52mm, TH
L1	1	3mH	G154038LF	GCI Technologies	Inductor, 3 mH, 0.065 ohm, TH	D52xT30.5mm
L3, L5, L6, L7, L8, L9, L10, L11, L12, L13, L14, L15, L16, L17, L18	15	30 ohm	MPZ2012S300AT000	TDK	Ferrite Bead, 30 ohm @ 100 MHz, 6 A, 0805	0805
L4	1	1mH	8121-RC	Bourns	Coupled inductor, 1 mH, A, 0.007 ohm, TH	1700x917mil
L19	1	100 ohm	HI1206N101R-10	Laird-Signal Integrity Products	Ferrite Bead, 100 ohm @ 100MHz, 3A, 1206	1206
LBL1	1		THT-14-423-10	Brady	Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	PCB Label 0.650"H x 0.200"W
Q1, Q2, Q3, Q4	4	650 V	IGP20N65H5	Infineon Technologies	Transistor, IGBT, 650 V, 60 A, TO-220FP	TO-220FP
Q5	1	100V	ZVN4310A	Diodes Inc.	MOSFET, N-CH, 100 V, 0.9 A, AEC-Q101, TO-226AA	TO-226AA
R1, R4, R57, R62, R78	5	10.0k	ERJ-3EKF1002V	Panasonic	RES, 10.0 k, 1%, 0.1 W, 0603	0603
R2, R3, R5, R8, R11, R15, R25, R26, R27	9	1.00Meg	RT0805BRD071ML	Yageo America	RES, 1.00 M, 0.1%, 0.125 W, 0805	0805
R6, R7, R12, R13, R18, R19, R23, R24	8	47.0k	CRCW121047K0JNEA	Vishay-Dale	RES, 47.0 k, 1%, 0.5 W, AEC-Q200 Grade 0, 1210	1210
R9, R10, R21, R22	4	10.0	ERJ-14NF10R0U	Panasonic	RES, 10.0, 1%, 0.5 W, AEC-Q200 Grade 0, 1210	1210
R14, R41, R43, R52, R53	5	2.40k	CRCW08052K40FKEA	Vishay-Dale	RES, 2.40 k, 1%, 0.125 W, AEC-Q200 Grade 0, 0805	0805
R16	1	11.0k	RC0805FR-0711KL	Yageo America	RES, 11.0 k, 1%, 0.125 W, 0805	0805

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R17, R20, R32, R37, R47, R48	6	2.00Meg	ERJ-6ENF2004V	Panasonic	RES, 2.00 M, 1%, 0.125 W, AEC-Q200 Grade 0, 0805	0805
R28, R29, R35, R36	4	1.33k	ERJ-14NF1331U	Panasonic	RES, 1.33 k, 1%, 0.5 W, AEC-Q200 Grade 0, 1210	1210
R30	1	150	ERJ-6GEYJ151V	Panasonic	RES, 150, 5%, 0.125 W, 0805	0805
R31	1	3.0k	ERJ-6GEYJ302V	Panasonic	RES, 3.0 k, 5%, 0.125 W, 0805	0805
R39, R40, R42, R44, R46, R49, R51, R54	8	12	CRCW080512R0JNEA	Vishay-Dale	RES, 12 ohm, 5%, 0.125W, 0805	0805
R55, R61	2	11.0k	RMCF0603FT11K0	Stackpole Electronics Inc	RES, 11.0 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R56, R60	2	1.00k	ERJ-3EKF1001V	Panasonic	RES, 1.00 k, 1%, 0.1 W, 0603	0603
R58, R65, R66	3	68.1	CRCW060368R1FKEA	Vishay-Dale	RES, 68.1, 1%, 0.1 W, 0603	0603
R59	1	10.0	CRCW060310R0FKEA	Vishay-Dale	RES, 10.0, 1%, 0.1 W, 0603	0603
R63, R68	2	330k	ERJ-3EKF3303V	Panasonic	RES, 330 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R64, R67	2	499k	ERJ-3EKF4993V	Panasonic	RES, 499 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R69	1	3.3k	CRCW08053K30JNEA	Vishay-Dale	RES, 3.3 k, 5%, 0.125 W, 0805	0805
R70, R71	2	0	CRCW08050000Z0EA	Vishay-Dale	RES, 0, 5%, 0.125 W, 0805	0805
R72	1	348	CRCW0805348RFKEA	Vishay-Dale	RES, 348, 1%, 0.125 W, 0805	0805
R73	1	270k	RC0603FR-07270KL	Yageo America	RES, 270 k, 1%, 0.1 W, 0603	0603
R74	1	30.0k	RC0603FR-0730KL	Yageo America	RES, 30.0 k, 1%, 0.1 W, 0603	0603
R75	1	10k	CRCW060310K0JNEA	Vishay-Dale	RES, 10 k, 5%, 0.1 W, 0603	0603
R76	1	1.2k	ERJ-3GEYJ122V	Panasonic	RES, 1.2 k, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R77	1	1.5k	ERJ-3GEYJ152V	Panasonic	RES, 1.5 k, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
Rsh1, Rsh2	2	0.02	CRA2512-FZ-R020ELF	Bourns	RES, 0.02, 1%, 3 W, 2512	2512
RV1	1	275V	S10K275E2	EPCOS Inc	Varistor 275V RMS 10MM Radial, TH	10mm Radial
RY1, RY2	2		G5LE-14 DC12	Omron Electronic Components	Relay, SPDT (1 Form C), 10 A, 12 VDC, SMD	22.5x19x16.5 mm
SH-J4, SH-J10	2	1x2	2SN-BK-G	Samtec	Shunt, 2mm, Gold plated, Black	2mm Shunt, Closed Top
SIL1, SIL2, SIL3, SIL4, SIL5, SIL6, SIL7, SIL8	8		SP900S-0.009-AC-58	Bergquist Company	Silcon Thermal Pad	19x12.7 mm
SW1	1		TL3301AF160QJ	E-Switch	Switch, SPST-NO, Off-Mom, 0.05 A, 12 V, SMT	6x6mm
TP1	1		5010	Keystone	Test Point, Multipurpose, Red, TH	Red Multipurpose Testpoint
TP2	1		5011	Keystone	Test Point, Multipurpose, Black, TH	Black Multipurpose Testpoint
U1	1		LTSR 6-NP	LEM	Current Transducer, AC/DC, 6A, TH	10x22.2mm
U2, U3, U5, U6	4		AMC1304M25DW	Texas Instruments	High-Precision, Reinforced Isolated Delta-Sigma Modulators with LDO, DW0016B	DW0016B
U4, U7, U8, U11	4		DCH010505SN7	Texas Instruments	Miniature, 1 W, 3 kVDC Isolated DC-DC Converter, -40 to 85 degC, 4-pin Module (EDJ4), Pb-Free (RoHS)	EDJ0004A
U9	1		ULN2003ADR	Texas Instruments	7-Channel Relay and Inductive Load Sink Driver, D0016A	D0016A
U10	1		OPA4350UA	Texas Instruments	High-Speed, Single-Supply, Rail-to-Rail Operational Amplifier MicroAmplifier(TM) Series, 2.7 to 5.5 V, -55 to 150 degC, 14-pin SOIC (D0014A), Green (RoHS & no Sb/Br)	D0014A
U12	1		PTH08080WAH	Texas Instruments	2.25 A, 4.5 to 18 V Input Wide Adjust Miniature Power Module, -40 to 85 degC, 5-pin Module (EUF5), Pb-Free (RoHS)	EUF0005A
U13	1		ISO7242CDW	Texas Instruments	25 Mbps Quad Channels, 2 / 2, Digital Isolator, -40 to +125 degC, 16-pin SOIC (DW), Green (RoHS & no Sb/Br)	DW0016A
U14, U16	2		TLV1117-33IDCY	Texas Instruments	FIXED LOW-DROPOUT VOLTAGE REGULATOR, DCY0003A	DCY0003A
U15	1		TPS71501DCKR	Texas Instruments	Single Output LDO, 50 mA, Adjustable 1.2 to 15 V Output, 3 to 24 V Input, 5-pin SC70 (DCK), -40 to 125 degC, Green (RoHS & no Sb/Br)	DCK0005A
ZD1, ZD2, ZD3, ZD4	4	15V	BZV55C15-TP	Micro Commercial Component	Diode, Zener, 15 V, 500 mW, MiniMELF	MiniMELF
C9	0	0.01uF	08051C103JAT2A	AVX	CAP, CERM, 0.01 uF, 100 V, +/- 5%, X7R, 0805	0805

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C10	0	0.047uF	ECQ-U2A473ML	Panasonic	CAP, Film, 0.047 μ F, 275 V, +/- 20%, TH	TH, 2-Leads, Body 15x6mm, Pin Spacing 12.5mm
C45, C48, C50, C55, C58	0	10pF	06035A100JAT2A	AVX	CAP, CERM, 10 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603
FID1, FID2, FID3	0		N/A	N/A	Fiducial mark. There is nothing to buy or mount.	Fiducial
J11	0		PPPC092LFBN-RC	Sullins Connector Solutions	Receptacle, 2.54mm, 9x2, Gold, TH	Receptacle, 2.54mm, 9x2, TH
J12	0		PPPC042LFBN-RC	Sullins Connector Solutions	Connector, Receptacle, 100mil, 4x2, Gold plated, TH	4x2 Header Receptacle
L2, L2N	0	470uH	2300HT-471-H-RC	Bourns	Inductor, Toroid, Powdered Iron, 470 μ H, 4.5 A, 0.14 ohm, TH	D1280xT650mil
PW1	0					
R33	0	12	CRCW080512R0JNEA	Vishay-Dale	RES, 12 ohm, 5%, 0.125W, 0805	0805
R34, R38, R45, R50	0	1.1	RC0805JR-071R1L	Yageo America	RES, 1.1 ohm, 5%, 0.125W, 0805	0805

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