

MCU050 REV A Bill of Materials

Item #	Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
1	PCB	1		MCU050	Any	Printed Circuit Board	
2	C1, C2, C3, C23, C33, C34, C37, C38, C41, C102, C104, C108, C113, C118, C119, C121, C202, C203, C204, C400, C402, C408, C409, C411	24	0.1uF	GRM155R71C104KA88D	MuRata	CAP, CERM, 0.1 µF, 16 V, +/- 10%, X7R, 0402	0402
3	C4, C5, C17, C111, C210	5	1000pF	GRM1555C1H102JA01D	MuRata	CAP, CERM, 1000 pF, 50 V, +/- 5%, C0G/NP0, 0402	0402
4	C6, C7, C8	3	1uF	GRM188R71A105KA61D	MuRata	CAP, CERM, 1 µF, 10 V, +/- 10%, X7R, 0603	0603
5	C9, C10	2	33uF	C2012X5R1A336M125AC	TDK	CAP, CERM, 33 uF, 10 V, +/- 20%, X5R, 0805	0805
6	C11, C12, C13, C14, C15, C16	6	12pF	GRM1555C1H120JA01D	MuRata	CAP, CERM, 12 pF, 50 V, +/- 5%, C0G/NP0, 0402	0402
7	C24	1	47uF	GRM21BR60J476ME15L	MuRata	CAP, CERM, 47 µF, 6.3 V, +/- 20%, X5R, 0805	0805
8	C25, C30	2	10uF	GRM219R61A106KE44D	MuRata	CAP, CERM, 10 uF, 10 V, +/- 10%, X5R, 0805	0805
9	C27, C32	2	1uF	GRM21BR61C105KA01L	MuRata	CAP, CERM, 1 uF, 16 V, +/- 10%, X5R, 0805	0805
10	C28, C35, C45, C46	4	2.2uF	GRM188R61C225KE15D	MuRata	CAP, CERM, 2.2 µF, 16 V, +/- 10%, X5R, 0603	0603
11	C29	1	4.7uF	GRM188R61C475KAAJ	MuRata	CAP, CERM, 4.7 µF, 16 V, +/- 10%, X5R, 0603	0603
12	C36, C40, C43	3	1uF	GRM188R71C105KA12D	MuRata	CAP, CERM, 1 µF, 16 V, +/- 10%, X7R, 0603	0603
13	C39	1	33pF	GRM1885C1H330JA01D	MuRata	CAP, CERM, 33 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603
14	C42	1	1000pF	GRM188R71C102KA01D	MuRata	CAP, CERM, 1000 pF, 16 V, +/- 10%, X7R, 0603	0603
15	C44	1	680pF	GRM1885C1H681JA01D	MuRata	CAP, CERM, 680 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603
16	C100, C101, C200, C201, C403, C404	6	22pF	GRM1555C1H220JA01D	MuRata	CAP, CERM, 22 pF, 50 V, +/- 5%, C0G/NP0, 0402	0402
17	C103, C112, C116, C117, C120, C205	6	4.7uF	GRM188R61A475MAAJ	MuRata	CAP, CERM, 4.7 µF, 10 V, +/- 20%, X5R, 0603	0603
18	C105, C106, C206, C207	4	0.22uF	GRM155R71C224KA12D	MuRata	CAP, CERM, 0.22 µF, 16 V, +/- 10%, X7R, 0402	0402
19	C107, C208	2	0.47uF	GRM155R61C474KE01	MuRata	CAP, CERM, 0.47 µF, 16 V, +/- 10%, X5R, 0402	0402
20	C109, C110, C114, C115	4	33pF	GRM1555C1H330JA01D	MuRata	CAP, CERM, 33 pF, 50 V, +/-5%, C0G/NP0, 0402	0402
21	C401, C405, C406, C407	4	10pF	GRM1555C1H100JA01D	MuRata	CAP, CERM, 10 pF, 50 V, +/- 5%, C0G/NP0, 0402	0402
22	C410, C413	2	10uF	GRM188R61A106ME69D	MuRata	CAP, CERM, 10 µF, 10 V, +/- 20%, X5R, 0603	0603
23	C412	1	0.01uF	GRM155R71C103KA01D	MuRata	CAP, CERM, 0.01 µF, 16 V, +/- 10%, X7R, 0402	0402
24	D1, D2, LED102, LED201, LED202	5	Green	LTST-C191TGKT	Lite-On	LED, Green, SMD	LED_0603
25	D102, D103	2	40V	BAS40-05-7-F	Diodes Inc.	Diode, Schottky, 40V, 0.2A, SOT-23	SOT-23
26	FB1, FB2	2	220 ohm	MPZ1608S221A	TDK	Ferrite Bead, 220 ohm @ 100 MHz, 2.2 A, 0603	0603
27	H1, H2, H3, H4	4		SJ-5303 (CLEAR)	3M	Bumpon, Hemisphere, 0.44 X 0.20, Clear	Transparent Bumpon
28	J1, J10, J11	3		TSW-105-07-G-D	Samtec	Header, 105mil, 5x2, Gold, TH	5x2 Header
29	J2	1		PBC02DAAN	Sullins Connector Solutions	Header, 2.54mm, 2x2, Gold, TH	Header, 2.54mm, 2x2, TH
30	J3	1		PEC04DAAN	Sullins Connector Solutions	Header, 100mil, 4x2, Tin, TH	Header, 4x2, 100mil, Tin
31	J4, J13, JP2	3		61300311121	Würth Elektronik	Header, 2.54 mm, 3x1, Gold, TH	Header, 2.54mm, 3x1, TH
32	J5, J6, J30, J31, J32, J33, JP1, JP3, JP4, JP5	10		61300211121	Würth Elektronik	Header, 2.54 mm, 2x1, Gold, TH	Header, 2.54mm, 2x1, TH
33	J7, J8	2		TSW-110-07-T-D	Samtec	Header, 10x2, 2.54mm, Tin, TH	Header, 10x2, 2.54mm, Tin, TH
34	J9	1		TSW-106-07-G-D	Samtec	Header, 100mil, 6x2, Gold, TH	6x2 Header
35	J12	1		1051640001	Molex	Receptacle, USB 2.0, Micro B, 5 Position, R/A, SMT	Receptacle, USB 2.0, Micro B, 5 Pos, 0.65mm Pitch, R/A, SMT

36	J34	1		SBH11-PBPC-D07-ST-BK	Sullins Connector Solutions	Header (shrouded), 100 mil, 7x2, Gold, TH	7x2 Shrouded Header
37	J100, J200	2		PBC07SAAN	Sullins Connector Solutions	Header, 2.54 mm, 7x1, Gold, TH	Header, 2.54 mm, 7x1, TH
38	L1, L2, L3, L4	4	600 ohm	MPZ2012S601A	TDK	Ferrite Bead, 600 ohm @ 100 MHz, 2 A, 0805	0805
39	L6	1	1uH	LQM21PNI1ROMC0D	MuRata	Inductor, Multilayer, Ferrite, 1 uH, 0.8 A, 0.19 ohm, SMD	0805
40	L101	1	2.2uH	CIG21L2R2MNE	Samsung	Inductor, Shielded, Composite, 2.2uH, 0.95A, 0.16 ohm, SMD	0805
41	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 x 0.200 inch
42	LCD	1		FH-1138P	Adkom Elektronik	108 Segment LCD Display, TH	56x25.1mm
43	LED101, LED203	2	Red	LTST-C190CKT	Lite-On	LED, Red, SMD	Red LED, 1.6x0.8x0.8mm
44	Q100, Q200	2		CSTCR4M00G15L99-R0	MuRata	Resonator, 4MHz, 39pF SMD	4.5x1.2x2 mm
45	Q101	1	-50V	BSS84W-7-F	Diodes Inc.	MOSFET, P-CH, -50V, -0.13A, SOT-323	SOT-323
46	Q102	1	0.7V	BC850CLT1G	ON Semiconductor	Transistor, NPN, 45V, 0.1A, SOT-23	SOT-23
47	Q400	1		CSTCR6M00G53Z-R0	MuRata	Resonator, 6MHz, 15pF SMD	4.5x1.2x2 mm
48	R1, R9, R100, R101, R201, R203	6	22	CRCW040222R0JNED	Vishay-Dale	RES, 22, 5%, 0.063 W, 0402	0402
49	R2, R106, R121, R123, R209, R404	6	47k	CRCW040247K0JNED	Vishay-Dale	RES, 47 k, 5%, 0.063 W, 0402	0402
50	R3	1	200k	3224W-1-204E	Bourns	Trimmer, 200 K, 0.25 W, SMD	3.5x5.3x4.8mm
51	R4, R5, R6	3	330k	CRCW0402330KJNED	Vishay-Dale	RES, 330 k, 5%, 0.063 W, 0402	0402
52	R7, R8	2	390	CRCW0402390RJNED	Vishay-Dale	RES, 390, 5%, 0.063 W, 0402	0402
53	R10, R13, R14	3	1.00Meg	RC0603FR-071ML	Yageo America	RES, 1.00 M, 1%, 0.1 W, 0603	0603
54	R11, R12	2	3.30k	ERJ-2RK F3301X	Panasonic	RES, 3.30 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0402	0402
55	R23, R46, R48, R64, R68, R69, R70, R71, R72, R73, R75, R77, R78, R80	14	0	RC0603JR-070RL	Yageo America	RES, 0, 5%, 0.1 W, 0603	0603
56	R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R52, R53, R54, R55, R56, R57, R124	23	0	CRCW04020000Z0ED	Vishay-Dale	RES, 0, 5%, 0.063 W, 0402	0402
57	R42, R66	2	24.9k	RC0603FR-0724K9L	Yageo America	RES, 24.9 k, 1%, 0.1 W, 0603	0603
58	R44, R45, R65, R67	4	2.00Meg	RC0603FR-072ML	Yageo America	RES, 2.00 M, 1%, 0.1 W, 0603	0603
59	R47, R49	2	806	RC0603FR-07806RL	Yageo America	RES, 806, 1%, 0.1 W, 0603	0603
60	R60	1	10.0	RC0603FR-0710RL	Yageo America	RES, 10.0, 1%, 0.1 W, 0603	0603
61	R61	1	1.82k	RC0603FR-071K82L	Yageo America	RES, 1.82 k, 1%, 0.1 W, 0603	0603
62	R63	1	499	RC0603FR-07499RL	Yageo America	RES, 499, 1%, 0.1 W, 0603	0603
63	R103, R206, R408	3	1.5k	CRCW04021K50JNED	Vishay-Dale	RES, 1.5 k, 5%, 0.063 W, 0402	0402
64	R104, R120, R205	3	470	CRCW0402470RJNED	Vishay-Dale	RES, 470, 5%, 0.063 W, 0402	0402
65	R105, R202, R204	3	390	CRCW0402390RJNED	Vishay-Dale	RES, 390 ohm, 5%, 0.063W, 0402	0402
66	R107, R108, R116, R117, R118, R119	6	221k	CRCW0402221KFKED	Vishay-Dale	RES, 221 k, 1%, 0.063 W, 0402	0402
67	R109	1	150k	CRCW0402150KFKED	Vishay-Dale	RES, 150 k, 1%, 0.063 W, 0402	0402
68	R110	1	240k	CRCW0402240KFKED	Vishay-Dale	RES, 240 k, 1%, 0.063 W, 0402	0402
69	R111, R112	2	4.7k	CRCW04024K70JNED	Vishay-Dale	RES, 4.7 k, 5%, 0.063 W, 0402	0402
70	R113, R200, R208	3	2.20k	CRCW04022K20FKED	Vishay-Dale	RES, 2.20 k, 1%, 0.063 W, 0402	0402
71	R114	1	6.81k	CRCW04026K81FKED	Vishay-Dale	RES, 6.81 k, 1%, 0.063 W, 0402	0402
72	R115	1	3.32k	CRCW04023K32FKED	Vishay-Dale	RES, 3.32 k, 1%, 0.063 W, 0402	0402
73	R122	1	820	CRCW0402820RJNED	Vishay-Dale	RES, 820, 5%, 0.063 W, 0402	0402
74	R125, R126, R127, R128, R211, R212, R213, R214, R215, R216	10	100	CRCW0402100RJNED	Vishay-Dale	RES, 100, 5%, 0.063 W, 0402	0402
75	R207, R418	2	10.0k	RCG060310K0FKEA	Vishay Draloric	RES, 10.0 k, 1%, 0.1 W, 0603	0603

76	R210	1	1.0Meg	CRCW04021M00JNED	Vishay-Dale	RES, 1.0 M, 5%, 0.063 W, 0402	0402
77	R400, R401, R402, R403, R405, R410, R411, R412	8	15k	CRCW040215K0JNED	Vishay-Dale	RES, 15 k, 5%, 0.063 W, 0402	0402
78	R406	1	27	CRCW040227R0JNED	Vishay-Dale	RES, 27 ohm, 5%, 0.063W, 0402	0402
79	R407, R409, R413, R414, R415, R416	6	22	CRCW040222R0JNED	Vishay-Dale	RES, 22 ohm, 5%, 0.063W, 0402	0402
80	RUSB	1	33	CRCW040233R0JNED	Vishay-Dale	RES, 33 ohm, 5%, 0.063W, 0402	0402
81	S1	1		B3U-1000P	Omron Electronic Components	SWITCH TACTILE SPST-NO 0.05A 12V	3x1.6x2.5mm
82	S2, S3, S4, S201, S202	5		TL1015AF160QG	E-Switch	Switch, Tactile, SPST-NO, 0.05A, 12V, SMT	Switch, 4.4x2x2.9 mm
83	S5	1		SS-13D16-VG 4 PA	C&K Components	Switch, Slide, SP3T, On-On-On, 3 Pos, 0.3A, 30 VDC, TH	12.6x4.3mm
84	SH-J1, SH-J2, SH-J3, SH-J4, SH-J5, SH-J6, SH-J7, SH-J8, SH-J9, SH-J10, SH-J11, SH-J12, SH-J13, SH-J14, SH-J15, SH-J16, SH-J17, SH-J18	18		60900213421	Würth Elektronik	Shunt, 2.54mm, Gold, Black	Shunt, 2.54mm, Black
85	TP1	1	Orange	5003	Keystone	Test Point, Miniature, Orange, TH	Orange Miniature Testpoint
86	TP2	1	Black	5001	Keystone	Test Point, Miniature, Black, TH	Black Miniature Testpoint
87	U1	1		MSP430FR6043IPN	Texas Instruments	Mixed-Signal Microcontroller, PN0080A (LQFP-80)	PN0080A
88	U4, U6	2		TPS22860DBVR	Texas Instruments	Ultra-Low Leakage Load Switch, DBV0006A	DBV0006A
89	U5	1		TPS61240DRVR	Texas Instruments	3.5-MHz High Efficiency Step-Up Converter, DRV0006A	DRV0006A
90	U7, U8	2		TS5A9411DCKR	Texas Instruments	10-Ω SPDT ANALOG SWITCH SINGLE-CHANNEL 2:1 MULTIPLEXER/DEMULTIPLEXER, DCK0006A	DCK0006A
91	U9	1		SN74LVC2T45DCTR	Texas Instruments	Dual-Bit Dual-Supply Bus Transceiver With Configurable Voltage Translation and 3-State Outputs, DCT0008A	DCT0008A
92	U10	1		OPA836IDBVT	Texas Instruments	Very Low Power, Rail to Rail Out, Negative Rail In, VFB Operational Amplifier, 2.5 to 5.5 V, -40 to 125 degC, 6-pin SOT23 (DBV6), Green (RoHS & no Sb/Br)	DBV0006A
93	U100, U200	2		MSP430F5528IRGCR	Texas Instruments	Mixed Signal MicroController, RGC0064B	RGC0064B
94	U101	1		TS5A21366RSER	Texas Instruments	0.75-Ohm DUAL SPST ANALOG SWITCH WITH 1.8-V COMPATIBLE INPUT LOGIC, RSE0008A (UQFN-8)	RSE0008A
95	U102	1		MSP430G2452IRSA16T	Texas Instruments	16 MHz Mixed Signal Microcontroller with 8 KB Flash, 256 B SRAM and 16 GPIOs, 16-pin QFN (RSA), Green (RoHS & no Sb/Br)	RSA0016B
96	U103, U201, U202	3		TPD4E002DRL2	Texas Instruments	Low-Capacitance Array with + / - 15 kV ESD Protection, 4 Channels, -40 to +85 degC, 5-pin SOT (DRL), Green (RoHS & no Sb/Br)	DRL0005A
97	U400	1		TPD2E001DRLR	Texas Instruments	Low-Capacitance + / - 15 kV ESD-Protection Array for High-Speed Data Interfaces, 2 Channels, -40 to +85 degC, 5-pin SOT (DRL), Green (RoHS & no Sb/Br)	DRL0005A
98	U401	1		TUSB2046BIRHBR	Texas Instruments	4-Port Full-Speed USB Hub, 3.3V, -40 to 85 degC, 32-Pin QFN (RHB), Green (RoHS & no Sb/Br)	RHB0032E
99	U402	1		TPS73533DRBR	Texas Instruments	Single Output High PSRR LDO, 500 mA, Fixed 3.3 V Output, 2.7 to 6.5 V Input, with Low IQ, 8-pin SON (DRB), -40 to 125 degC, Green (RoHS & no Sb/Br)	DRB0008A
100	Y1	1		ABM3-8.000MHZ-D2Y-T	Abracon Corporation	Crystal, 8MHz, SMD	SMD, 2-Leads, Body 3.2x1.3x5 mm
101	Y2	1		ABS07-32.768KHZ-9-T	Abracon Corporation	CRYSTAL, 32.768KHZ, 9PF, SMD	3.2x0.9x1.5mm
102	Y3	1		AWSCR-8.00CV-T	Abracon Corporation	Ceramic Resonator, 8MHz, 22pF, SMD	3.7x3.1mm
103	C18	0	4.7uF	GRM188R61A475MAAJ	MuRata	CAP, CERM, 4.7 μF, 10 V, +/- 20%, X5R, 0603	0603
104	FID1, FID2, FID3	0		N/A	N/A	Fiducial mark. There is nothing to buy or mount.	N/A
105	R43	0	200k	RC0603FR-07200KL	Yageo America	RES, 200 k, 1%, 0.1 W, 0603	0603
106	R50, R58, R74, R76, R79	0	0	RC0603JR-070RL	Yageo America	RES, 0, 5%, 0.1 W, 0603	0603
107	R51, R59	0	806	RC0603FR-07806RL	Yageo America	RES, 806, 1%, 0.1 W, 0603	0603
108	R62, R81	0	10.0k	RCG060310K0FKEA	Vishay Draloric	RES, 10.0 k, 1%, 0.1 W, 0603	0603
109	Y4	0		ABLS-8.000MHZ-B4-T	Abracon Corporation	Crystal, 8 MHz, 18pF, SMD	Crystal, 11.4x4.3x3.8mm

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