Category	Vendor	Item Number	Item Description	Quantity Per Package	Cost Per Package	Number of Packages	Item Total Cost	Link	Comments	Designation on Mouse 5.0 PCB	
	Amazon	B07PN8WVGT	Hosim [New Vers	1	$11.85	1	$11.85	https://www.ama:	- 7.4V Lithium Polymer battery, 800mAh, 38g, 25C - rechargeable, has XH3P JST and some other connector... - contacting customer service for second connector type... - hopefully lasts long enough for testing and multiple runs	**7.4V**	
	Amazon	B073WSDCZM	HTRC LiPo Char	1	$11.97	1	$11.97	https://www.ama:	- 7.4V LiPo battery charger - Connects to source via wall outlet - Charges LiPo via JST connector	xx	
	Amazon	B01MCZE2HM	GeeBat 460pcs 2	460	$10.99	1	$10.99	https://www.ama:	- JST XH connector pack, TH - use for 7.4V LiPo battery to PCB	**J1**	
	Digikey	296-LMR34215S	IC POWER MAN	1	$2.87	1	$2.87	https://www.digik	- 5V, 1.5A switching regulator - used to power two motors and motor driver IC	**U1**	
	Digikey	1276-2910-1-ND	CAP CER 22UF	1	$0.18	2	$0.36	https://www.digik	- 22uF ceramic cap needed for 5V 1.5A switching regulator - from Vout to GND (pg 20 pdf of datasheet)- **C6, C7** - 0805 package	**C6, C7, C9, C11**	
	Digikey	1276-6478-1-ND	CAP CER 0.22UI	1	$0.10	1	$0.10	https://www.digik	- 220nF ceramic caps needed for 5V 1.5A switching regulator - from Vin to GND (pg 20 of datasheet)- **C2**, ~~C3~~ - 0805 package	**C2**	
	Digikey	1276-1006-1-ND	0.1 µF ±10% 25V	1	$0.10	1	$0.10	https://www.digik	- 0.1uF ceramic cap needed for 5V 1.5A switching regulator - from Boot to SW (pg 20 pdf of datasheet) - smaller 0603 package	**C4, C12, C18, C19, C20, C21, C22, C25,**	
	Digikey	1276-1102-1-ND	1 µF ±10% 25V (	1	$0.10	1	$0.10	https://www.digik	- 1uF ceramic cap needed for 5V 1.5A switching regulator - from VCC to GND (pg 20 of datasheet) - smaller 0603 package	**C5**	
	Digikey	1276-1044-1-ND	4.7 µF ±10% 10V	1	$0.10	1	$0.10	https://www.digik	- 4.7uF ceramic cap needed for 5V 1.5A switching regulator - from Vin to GND (pg 20 of datasheet) - smaller 0603 package	**C1**	
	Digikey	1276-1111-1-ND	CAP CER 0.22UI	1	$0.10	1	$0.10	https://www.digik	- 220nF ceramic caps needed for 5V 1.5A switching regulator - from Vin to GND (pg 20 of datasheet)- C3 - smaller 0603 package	**C3**	
Power	Digikey	732-2613-1-ND	FIXED IND 2.2UI	1	$1.64	1	$1.64	https://www.digik	- 2.2uH inductor needed for 5V 1.5A switching regulator - from SW to Vout (pg 20 of datasheet)	**L1, L2, L3**	
	Digikey	296-39450-1-ND	IC REG BUCK 5V	1	$1.36	1	$1.36	https://www.digik	- 5V, 500mA switching regulator - used to power MCU and Sharp sensors	**U2**	
	Digikey	296-39449-1-ND	IC REG BUCK 3.	1	$1.36	1	$1.36	https://www.digik	- 3.3V, 500mA switching regulator - used to power IMU	**U3**	
	Digikey	1276-1096-1-ND	CAP CER 10UF	1	$0.10	3	$0.30	https://www.digik	- 10uF ceramic cap needed for 5V and 3.3V switching regulator - between VIN and PGND (pg 21 pdf of datasheet) - 0805 package	**C8, C10**	
	Digikey	1276-2910-1-ND	CAP CER 22UF	1	$0.18	2	$0.36	https://www.digik	- 22uF ceramic cap needed for 5V and 3.3V switching regulator - between SW and FB (pg 21 pdf of datasheet)	(C6, C7, C9, C11)	
	Digikey	RHM100KDCT-N	RES SMD 100K	1	$0.13	2	$0.26	https://www.digik	- 100k Ohm resistor needed for 5V and 3.3V switching regulator - between SW/VOS and PG (pg 21 of datasheet) - smaller 0603 package	**R1, R2**	
	Digikey	732-2613-1-ND	FIXED IND 2.2UI	1	$1.64	2	$3.28	https://www.digik	- 2.2uH inductor needed for 5V and 3.3V switching regulator - between SW and 100k Ohm resistor (pg 21 of datasheet)	(L1, L2, L3)	
	Digikey	VS-2ENH01-M3/	DIODE GEN PUI	1	$0.38	3	$1.14	https://www.digik	- standard rectifier diode to prevent current in reverse direction through regu - prevents up to 100V and allows 2A to pass - one for each regulator, so 3 total	**D1, D2, D3**	
	Digikey	CKC5107-ND	SWITCH SLIDE	1	$2.36	1	$2.36	https://www.digik	- switch for on/off of entire mouse - needed since lipo batteries don't have on/off switches - rated for 4A, greater than needed 2.5A	**SW3**	
	Digikey	RMCF0603FT1K	RES 1K OHM 1%	1	$0.10	1	$0.10	https://www.digik	- bias resistor to have a voltage at vin when below reverse voltage	**R24**	
	Digikey	RC0603FR-1312	RES 12K OHM 1	1	$0.10	1	$0.10	https://www.digik	- part of the voltage divider for vref - "R2" of the voltage divider	**R26**	
	Mouser	HPZR-C6V7-QX	Zener Diodes HF	1	$0.41	1	$0.41	https://www.mou:	- zener diode that allows current to flow to ground when above 6.7V - once it goes below 6.7V then vin will a voltage no longer gnd	**D4**	
	Mouser	MC33172VDR2G	Operational Amp	1	$0.87	1	$0.87	https://www.mou:	- low power op-amp that will be used in a comparator config - hasdual channel op-amp	**IC2**	
	Digikey	TB6552FNGC8E	IC MOTOR DRIV	1	$1.58	1	$1.58	https://www.digik	- H Bridge motor driver IC, 2.7V min supply, 1A output max, SSOP - tiny IC, should be able to drive DC motors w/ PWM - (mouse 4.4 used L293 which output 600mA max)	**U5**	

Category	Vendor	Item Number	Item Description	Quantity Per Package	Cost Per Package	Number of Packages	Item Total Cost	Link	Comments	Designation on Mouse 5.0 PCB	
Motor Related	Digikey	1276-1006-1-ND	0.1 µF ±10% 25V	1	$0.10	1	$0.10	https://www.digik	- 0.1uF ceramic capacitor, SMD 0603 - needed for supply and vcc pins for H bridge IC - to be placed as close as possible to IC (pg 8 of TB6552 datasheet)	(C4, C12, C18, C19, C20, C21, C22, C25	
	Digikey	732-6406-1-ND	CAP ALUM POLY	1	$0.50	1	$0.50	https://www.digik	- 47uF polymer capacitor, SMD - needed for supply pin for H bridge IC - to be placed as close as possible to IC (pg 8 of TB6552 datasheet)	C13	
	Servocity	638103	Gear Motor with	1	$19.99	2	$39.98	https://www.serv	- Gear motors, 900rpm w/ encoders - works well, mouse speed just right w/ adjustment - loose gears, prone to shifting around - used for mouse 4.4	Motor 1, Motor 2	
	Pololu	1087	Black plastic whe	2	$4.95	1	$4.95	https://www.polol	- Wheels, 32mm diameter, 3mm D output shaft - works well, relatively small	Wheels	
	Digikey	455-1685-1-ND	CONN HEADER	1	$0.77	2	$1.54	https://www.digik	- JST ZH 6 position male (receptacle) SMD connector - 3D models available: HERE	J6, J7	
Ball Caster, nuts, screws	Amazon	B0BTYDZVM8	1 Oz (23 Grams)	1	$6.99	1	$6.99	https://www.ama	- superglue to attach 3D printed mounts to PCB	xx	
Sensors	Mouser	SFH 325 FA-3	Phototransistors	1	$0.48	4	$1.90	https://www.mou	- Phototransistor to recieve the reflected the ir rays	Q1, Q2, Q3, Q4	
	Digikey	1276-1119-1-ND	CAP CER 10UF	1	$0.19	4	$0.76	https://www.digik	- 10uF ceramic capacitor, SMD 0603 - needed for Sharp IR sensors	C23	
	Digiekey	RMCF0603FT10	RES 10K OHM 1	1	$0.10	4	$0.40	https://www.digik	- Resistor to bias the voltage so there will be an output	R3, R4, R5, R6	
	Digikey	RHM180DCT-ND	RES SMD 180 O	1	$0.14	4	$0.56	https://www.digik	- resistor to limit current to base of BJT transistors - 180 Ohms calculated w/ BJT parameters	(R11, R12, R13, R14)	
	Digikey	RHM330DCT-ND	RES SMD 330 O	1	$0.13	4	$0.52	https://www.digik	- Resistor to limit the current on the infrared emitter - 330 Ohms chosen arbitrarily	R11, R12, R13, R14, R16, R17, R18, R2	
	Mouser	SFH 4045N	Infrared Emitters	1	$0.42	4	$1.68	https://www.mou	- Infrared Emitter at 940nm	LED 5, LED 6, LED 7, LED 8	
IMU	Digikey	BNO085	IMU ACCEL/GYR	1	$15.97	1	$15.97	https://www.digik	- 9 degree IMU recommended by Ilan - A positive value is for counter-clockwise rotations.	IC1	
	Mouser	830003000	Crystals WE-XTA	1	$0.58	1	$0.58	https://www.mou	- External Crystal needed for the IMU	Y1	
	Digikey	C0603C220J5GA	CAP CER 22PF	1	$0.14	2	$0.28	https://www.digik	- external caps dampen odd harmonics - provide what's needed when in parallel	C30, C31	
	Digkey	RMCF0603FT2K	RES 2.2K OHM	1	$0.10	2	$0.20	https://www.digik	- Pullup resistors for IMU Env pins - Env pins are for external sensors like CO2 or Temp	R19, R19	
MCU	Digikey	CKN12314-1-ND	TACT 6.0 X 3.5,	1	$0.14	1	$0.14	https://www.digik	- SMD reset switch	SW1	
	Digikey	AT32UC3L0256-	IC MCU 32BIT 2	1	$10.19	1	$10.19	https://www.digik	- AT32UC3L0256 AVR MCU to replace Arduino - 50MHz, faster than controller above, operates on 3.3V - 12b ADC, PWM, programmed via JTAG and aWire - schematic checlist: HERE	U7	
	Digikey	1276-1119-1-ND	CAP CER 10UF	1	$0.19	1	$0.19	https://www.digik	- 10uF capacitor for AT32UC3L0256 VDDin - page 4 of schematic checklist - small 0603 package	(C8, C10)	
	Digikey	1276-1006-1-ND	0.1 µF ±10% 25V	1	$0.10	3	$0.30	https://www.digik	- 0.1uf ceramic cap for AT32UC3L0256 VDDin, VDDio, and VDDcore - page 4 of schematic checklist - small 0603 package	(C4, C12, C18, C19, C20, C21, C22, C25	
	Digikey	CAP CER 2.2UF	1276-1085-1-ND	1	$0.10	1	$0.10	https://www.digik	- 2.2uF ceramic cap for AT32UC3L0256 VDDio, and VDDcore - page 4 of schematic checklist - small 0603 package	C24	

Category	Vendor	Item Number	Item Description	Quantity Per Package	Cost Per Package	Number of Packages	Item Total Cost	Link	Comments	Designation on Mouse 5.0 PCB	
MCU											
	Digikey	1276-1006-1-ND	0.1 µF ±10% 25V	1	$0.10	3	$0.30	https://www.digik	- 0.1uF ceramic cap for AT32UC3L0256 VDDana and ADVREF - page 5 of schematic checklist - small 0603 package	(C4, C12, C18, C19, C20, C21, C22, C25	
	Digikey	490-5216-1-ND	FERRITE BEAD	1	$0.19	1	$0.19	https://www.digik	- ferrite bead for for AT32UC3L0256 VDDana and ADVREF - page 5 of schematic checklist, and page 15 on xplained dev board schema - small 0603 package	**L4**	
	Digikey	RHM10KDCT-ND	RES SMD 10K O	1	$0.13	1	$0.13	https://www.digik	- 10k resistor for reset switch on AT32UC3L0256 - small 0603 package	**R3, R4, R5, R6, R15, R23, R25**	
	Digikey	1276-1006-1-ND	0.1 µF ±10% 25V	1	$0.10	1	$0.30	https://www.digik	- 0.1uF ceramic cap for reset switch on AT32UC3L0256 - small 0603 package	(C4, C12, C18, C19, C20, C21, C22, C25	
	Digikey	1276-1006-1-ND	0.1 µF ±10% 25V	1	$0.10	1	$0.30	https://www.digik	- 0.1uF ceramic cap for JTAG on AT32UC3L0256 - small 0603 package	(C4, C12, C18, C19, C20, C21, C22, C25	
	Digikey	609-10129383-9	CONN HEADER	1	$0.48	1	$0.48	https://www.digik	- 2x5 SMD pin header for JTAG programming AT32UCL0256	**J8**	
misc	Digikey	2223-DS04-254-	DIP SWITCH, SF	1	$0.79	1	$0.79	https://www.digik	- DIP 3 SMD switch for mode change and debugging	**SW2**	
	Digikey	3147-B1911UD--	LED ORANGE C	1	$0.10	1	$0.10	https://www.digik	- orange SMD LED 0603 package for debug	**LED2**	
	Digikey	3147-B1911USD	LED RED CLEAR	1	$0.10	1	$0.10	https://www.digik	- red SMD LED 0603 package for debug	**LED1**	
	Digikey	3147-B1911NG--	LED GREEN CLI	1	$0.10	1	$0.10	https://www.digik	- green SMD LED 0603 package for debug	**LED3**	
	Digikey	1292-WR06X330	RES 330 OHM 1	1	$0.10	3	$0.30	https://www.digik	- 330 Ohm SMD 0603 resistor for LEDs	(R16, R17, R18, R27)	
	Digikey			1	$0.38	11	$4.18	https://www.digik	- TH testpoint to probe mouse	**TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP**	
PCB	JLC PCB	n/a	PCB prototype:Y	5	$2.00	1	$2.00	https://jlcpcb.con	- solid and cheap PCB vendor - no issues so far, purple nice and deep purple - used in mouse 4.4		
						total cost:		$146.80				

	resistors:	https://www.digikey.com/en/products/filter/chip-resistor-surface-mount/52?s=N4IgjCBcoExaBjKAzAhgGwM4FMA0IB7KAbXADYBWAFgGYQBdfABwBcoQBIFgJwEsA7AOYgAvvjBl4IJJDRY8hEiBoBOGjBUNmbSJx4DhYkDAAMADgpSZcnPiK	
	headers:	https://www.digikey.com/en/products/filter/rectangular-connectors/headers-receptacles-female-sockets/315?s=N4IgjCBcoGwJxVAYygMwIYBsDOBTANCAPZQDaIALGGABxwDsIAuoQA4AuUIAyuwE4BLAHYBzEAF9CNGohApIGHAWJkQDA	
	ceramic caps:	https://www.digikey.com/en/products/filter/ceramic-capacitors/60?s=N4IgjCBcpgbFoDGUBmBDANgZwKYBoQB7KAbRAGYBYBOcgJKqbAF0CAHAFyhgAGVWAnASWB2AcxABfAgFoaCEMki8ArviKkQKAVkbiQE%2BNFIRFRFFY4pDLINk%2BBnrmGCxsh	
	electrolytic caps:	https://www.digikey.com/en/products/filter/aluminum-electrolytic-capacitors/58?s=N4IgjCBcoGwJxVAYygMwIYBsDOBTANCAPZQDaIALGGABxwDsIAuoQA4AuUIAyuwE4BLAHYBzEAF9CAWgMBiEkj8ArgJWJkQKAVmaSQMDVMQMSUQSQOQD	
	motor drivers:	https://www.digikey.com/en/products/filter/motor-drivers-controllers/744?s=N4IgjCBcoEwKxyqAxIAZgQwDYYGcCmANCAPZQDaIAzHDACwDsIIAuoQA4AuUIAyhwE4BLAHYBzEAF9iAWhhIQqJmUkMBIQSAJQDJmUkNBIQScIIrJmIBsxVIUh5EuRCJmUkNIBsxVQxR	
	linear regulators:	https://www.digikey.com/en/products/filter/voltage-regulators-linear/699?s=N4IgjCBcpgTAnFUBjKAzAhgGwM4FMAaEeygG1wA2AdgFZG5wAWEI2ABjHqZmrYYhYYhlmYhYDatVaUQAXSIAHAC5QQAZTAnAJaANyAHMQAX2IBaKAVkXlUAzEhCpmXIRRLkhYXIRW	
	to-220 heatsinks:	https://www.digikey.com/en/products/filter/thermal/heat-sinks/to-220/219?s=N4IgjCBcoMwKwHYgMZQGYMGBAWGA2EBEEARQD4AlGDGAAwYBMIALMBIAMwAWBEALrEADSDQAMeKCDSYgMpSA9gjAsYQAvvkIg6A6D2ZSYgDM0YYvIQ1ZFSZ	
	screws:	https://www.digikey.com/en/products/filter/screws-bolts/572?s=N4IgjCBcoLQExVAYygFwF4E4FcCmAaEA9IANogCsIAugL74wBsiIKkGO%2BBRkpAzFbSDACcTFmzyES4PtWpA	
	nuts:	https://www.digikey.com/en/products/filter/nuts/573?s=N4IgjCBcoLQExVAYygFwF4E4FcCmAaEA9IANogCsIAugL74wBsiIKkGO%2BBRkpAzFbSDACcTFmzyES4PtWpA	
	MCUs:	https://www.digikey.com/en/products/filter/microcontrollers/685?s=N4IgjCBcoGwJxVAYygMwIYBsDOBTANCAPZQDaIALAJwAMVUOrCGHMYvbYy7MQgqUMCfqyAEAG4AjkQUA1RwAXAAuhBICAgA4AUoQSAgPwA4A	
	more MCUs:	https://www.digikey.com/en/products/filter/microcontrollers/685?s=N4IgjCBcpgbFoDGUBmBDANgZwKYBoQB7KAbRACZyBWATjoGYAjAYRBEAkfAMggE4BLAHYBzEAF9iAWhhIQqJmUkMBIQSAJQTJmUkNBIQSEArJmIB8xGDJkSYgG	
	IMUs:	https://www.digikey.com/en/products/filter/imus-inertial-measurement-units/567?s=N4IgjCBcoLQExVAYygFwF4E4FcCmAaEA9IANogCsIAugL74wBsiIKkGO%2BBRkpAzFbSDACcTFmzyES4PvwRcQASQCyAVSr4K0EAAcoYfFp2QwABmP9Gmg	
	rectifier diodes:	https://www.digikey.com/en/products/filter/single-diodes/280?s=N4IgjCBcpgnAHLKoDGUBmBDANgZwKYA0IA9IANogMIAiugL7EC0ATMiGpAC4BOArkVIUAVjqMATMiGpAC4BOArkVIUQGX	
	inductors:	https://www.digikey.com/en/products/filter/fixed-inductors/71?s=N4IgjCBcoLQExVAYygFwF4E4FcCmAaEA9IANogCsIAugL74wBsiIKkGO%2BBRkpAzFbSDACcTFmzyES4PvwRcQASwB2AE0xJUBdHyA	
	switching regulat	https://www.digikey.com/en/products/filter/voltage-regulators-dc-dc-switching-regulators/739?s=N4IgjCBcpgnAHLKoDGUBmBDANgZwKYA0IA9IANogMIAiugL7EC0ATMiGpAC4BOArkRKRKAVjqMATMiGpAC4BOArkRKRKAVlt	

Category	Vendor	Item Number	Item Description	Quantity Per Package	Cost Per Package	Number of Packages	Item Total Cost	Link	Comments	Designation on Mouse 5.0 PCB
	Digikey	S7013-ND	CONN HDR 15P	1	$0.98	2	$1.96	https://www.digik	- 15pin header for Arduino - works well, very tall - allows for components to be placed under arduino - used in mouse 4.4	
	Digikey	576-4879-1-ND	IC REG LINEAR	1	$0.16	1	$0.16	https://www.digik	- 1.8V linear regulator to supply VDDana, VDDcore, (page 36 on datasheet) - also for ADVREF (page 5 of schematic checklist) - SOT23-5	
	Amazon	B07R9VWD39	Mini Nano V3.0 A	1	$12.99	1	$12.99	https://www.amaz	- Arduino Nano - works well, comes w/ oxidized pins- required cleaning w/ alcohol - rather large, to be replaced w/ different controller - used in mouse 4.4	
	Digikey	150-AVR128DA6	IC MCU 8BIT 128	1	$3.01	1	$3.01	https://www.digik	- AVR MCU to replace Arduino - faster than ATmega4809 and Arduino, operates on 5V - programmed via UPDI	
	Digikey	1276-1066-1-ND	CAP CER 1UF 2	1	$0.10	1	$0.10	https://www.digik	- 1uF ceramic cap needed for AVR128DA64	
	Digikey	1276-1015-1-ND	CAP CER 10000	1	$0.10	1	$0.10	https://www.digik	- 10nF (or 10000pF) ceramic cap needed for AVR128DA64	
	Digikey	1276-1003-1-ND	CAP CER 0.1UF	1	$0.10	1	$0.10	https://www.digik	- 0.1uF ceramic cap needed for AVR128DA64's reset switch	
	Digikey	1276-1003-1-ND	CAP CER 0.1UF	1	$0.10	2	$0.20	https://www.digik	- 0.1uF ceramic caps needed for IMU	
	Digikey	1276-1096-1-ND	CAP CER 10UF	1	$0.10	4	$0.40	https://www.digik	- 10uF ceramic capacitor, SMD 0805 - needed for Sharp IR sensors	
	Servocity	632282	M1.6 x 8mm with	6	$2.99	2	$5.98	https://www.serv	- M1.6 screws, bracket to PCB, 8mm - just right size for 3D printed bracket to PCB - used for mouse 4.4	
	Servocity	632276	M1.6 x 4mm with	6	$2.99	2	$5.98	https://www.serv	- M1.6 screws, brackets to motors, 4mm - just right size for ServoCity motors - used for mouse 4.4	
	Pololu	950	Ball Caster Plast	1	$2.49	1	$2.49	https://www.polol	- metal ballcaster 3/8" - came w/ rusted ball, otherwise works well - used for mouse 4.4	
	McMaster-Carr	95610A310	M2.0 Plastic Was	100	$4.73	1	$4.73	https://www.mcm	- M1.6 washers - needed to prevent screwhead contact w/ PCB traces - unused	
Other parts that were considered	Amazon	B09SWZ2XSF	M1.6 x .35 Hex N	100	$9.48	1	$9.48	https://www.amaz	- Nuts for M1.6 screws - works well, just right size - used for mouse 4.4	
	Servocity	638102	Premium N20 Ge	1	$19.99	2	$39.98	https://www.serv	- Gear motors, 460rpm w/ encoders - hopefully sturdier than 900rpm motors	
	Digikey	1276-1003-1-ND	CAP CER 0.1UF	1	$0.10	1	$0.10	https://www.digik	- 0.1uF ceramic capacitor, SMD 0805 - needed for supply and vcc pins for H bridge IC - to be placed as close as possible to IC (pg 8 of TB6552 datasheet)	
								https://www.polol	- Potential small 20mm x 30mm stepper motor	
	Digikey	2019-RK73H2AT	RES 100K OHM	1	$0.10	2	$0.20	https://www.digik	- 100k Ohm resistor needed for 5V and 3.3V switching regulator - between SW/VOS and PG (pg 21 pdf of datasheet)	
	Digikey	1276-1003-1-ND	CAP CER 0.1UF	1	$0.10	1	$0.10	https://www.digik	- 0.1uF ceramic cap needed for 5V 1.5A switching regulator - from Boot to SW (pg 20 pdf of datasheet)	
	Digikey	1276-1066-1-ND	CAP CER 1UF 2	1	$0.10	1	$0.10	https://www.digik	- 1uF ceramic cap needed for 5V 1.5A switching regulator - from VCC to GND (pg 20 of datasheet)	
	Digikey	1276-1244-1-ND	CAP CER 4.7UF	1	$0.10	1	$0.10	https://www.digik	- 4.7uF ceramic cap needed for 5V 1.5A switching regulator - from Vin to GND (pg 20 of datasheet)	
	Digikey	2129-NJM7806F	IC REG LINEAR	1	$0.88	1	$0.88	https://www.digik	- 6V voltage regulator, 1.5A output max, TH - needed to regulate 7.4V down to 6V - will supply steady 6V to MCU and motor driver IC - pins that needs 5V (IR sensors, motor encoders) will get it from MCU	
	Digikey	1276-1123-1-ND	CAP CER 0.33U	1	$0.10	1	$0.10	https://www.digik	- 0.33uF ceramic capacitor, SMD 0805 - needed for 6V voltage regulator input	
	Digikey	1276-1003-1-ND	CAP CER 0.1UF	1	$0.10	1	$0.10	https://www.digik	- 0.1uF ceramic capacitor, SMD 0805 - needed for 6V voltage regulator output	
	Digikey	HS105-ND	HEAT SINK TO-2	1	$0.33	1	$0.33	https://www.digik	- TO-220 heatsink for 6V voltage regulator - screws on to regulator	
	Digikey	335-1148-ND	MACH SCREW F	1	$0.71	1	$0.71	https://www.digik	- TO-220 10mm M3 screw for 6V voltage regulator & heatsink - metal screw	

Category	Vendor	Item Number	Item Description	Quantity Per Package	Cost Per Package	Number of Packages	Item Total Cost	Link	Comments	Designation on Mouse 5.0 PCB	
	Digikey	RPC3082-ND	HEX NUT 0.220"	1	$0.28	1	$0.28	https://www.digik	- TO-220 M3 nut for 6V regulator & heatsink - polycarbonate nut		
	Amazon	B09QJT6T2N	10 Pairs HobbyP	1	$8.98	1	$8.98	https://www.ama:	- XT30 male connector (receptacle for LiPo battery plug) - connects battery to PCB - pcb files: HERE		