

Title	TESC 6.4								
Total Parts	146								
Total Unique Parts	65								

No	Ref	Qty	Value	Footprint	Description	Part Number	Note
1	C1 C7 C28 C48 C49 C50 C53 C58 C60	9	100n	C_0603	CAP 0.1uF 50V 0603 5% X7R	C0603X104J5RACTU	
2	C2 C8 C51 C52	4	15p	C_0603	CAP 15pF 100V 0603 2% C0G	06035A150GAT2A	
3	C3 C4 C5 C6 C9 C10 C11 C12 C13 C14 C15 C17 C20 C31 C33 C34 C35 C36 C38 C42 C59 C61 C62 C63 C64	25	2.2u	C_0603	CAP 2.2uF 16V 0603 10% X5R	C1608X5R1C225K080AB	
4	C16	1	6.8n	C_0603	CAP 6800pF 50V 0603 10% X7R	GCD188R71H682KA01D	
5	C18	1	120p	C_0603	CAP 120pF 50V 0603 5% C0G	06035A121JAT2A	
6	C19	1	22n	C_0603	CAP 0.022uF 50V 0603 10% X7R	GCM188R71H223KA37J	
7	C21 C32	2	100u	CP_Tantalum_Case-A_EIA-3216-18_Reflow	CAP 100uF 6.3V 1206 10% 1206	TLJA107M006R0500	
8	C22	1	15n	C_0603	CAP 0.015uF 50V 0603 10% X7R	GCM188R71H153KA37D	
9	C23 C24 C25	3	220n	C_0603	CAP 0.22uF 25V 0603 10% X7R	GCM188R71E224KA55D	
10	C26 C27 C37 C39 C40 C41 C43 C44	8	4.7u_100V	C_1210	CAP 4.7uF 100V 1210 10% X7S	CGA6M3X7S2A475K200AE	
11	C29 C30 C45	3	4.7n	C_0603	CAP 4700pF 50V 0603 5% X7R	06035C472JAT2A	
12	C46 C47	2	680u_63V	C_0603	CAP 680uF 63V 20%	EKZN630ELL681MK30S	
13	C54	1	2.2n	C_0402	CAP 2200pF 50V 0402 10% X7R	GRM155R71H222JA01J	
14	C55	1	4.7p	C_0402	CAP 4.7pF 100V 0402 0.25pF C0G	GRM1555C2A4R7WA01D	
15	C56	1	1.5p	C_0402	CAP 1.5pF 100V 0402 +/-0.1pF C0G	GRM1555C1H1R5BA01D	
16	C57	1	1p	C_0402	CAP 1pF 100V 0402 +/-0.1pF C0G	GRM1555C1H1R0BA01D	
17	D1	1	BLUE	LED_0603	LED Blue	VLMB1300-GS08	
18	D2	1	RED	LED_0603	LED Red	VLMS1300-GS08	
19	D3	1	GREEN	LED_0603	LED Green	VLMTG1300-GS08	
20	D4	1	DIODE	D_SMA	Schottky Diodes & Rectifiers 2.0 Amp 60 Volt	PMEG6020ER,115	
21	D5	1	TVS 5V	D_SMA	TVS Diodes 5V	SMAJ5.0A	
22	L1	1	2.2u	L_0805	IND 2.2uH 1.3A 0805 +/-20%	74479275222	
23	L2	1	22u	L_Coilcraft_XAL5050	IND 22uH 3.4A 20%	XAL5050-223MEC	
24	L3	1	8.2n	L_0402	IND 8.2nH 0402 5%	0402CS-8N2XJLW	
25	L4	1	3.9n	L_0402	IND 3.9nH 0402 5%	0402CS-3N9XJLW	
26	L5	1	2.7n	L_0402	IND 2.7nH 0402 5%	0402CS-2N7XJLW	
27	P1	1	USB_OTG	USB_Micro-B_Verical_Molex-105133-0001	USB Connectors MICRO VERTICAL	1051330001	
28	P2	1	CAN	b4b-ph-kl	Micro-JST 4PIN 2mm	B4B-PH-K-S (LF)(SN)	
29	P4	1	HALL_ENC	b6b-ph-kl	Micro-JST 6PIN 2mm	B6B-PH-K-S (LF)(SN)	
30	P5	1	COM	b8b-ph-kl	Micro-JST 8PIN 2mm	B8B-PH-K-S (LF)(SN)	
31	P6	1	SERVO	b3b-ph-kl	Micro-JST 3PIN 2mm	B3B-PH-K-S (LF)(SN)	
32	P7	1	SWD	b5b-ph-kl	Micro-JST 5PIN 2mm	B5B-PH-K-S (LF)(SN)	
33	P8	1	PH_A	1PAD_4x5mm	Motor Cable		
34	P9	1	PH_B	1PAD_4x5mm	Motor Cable		
35	P10	1	PH_C	1PAD_4x5mm	Motor Cable		
36	P11	1	SUPPLY	1PAD_6x5mm	RED Silicon Cable		
37	P12	1	GND	1PAD_6x5mm	BLACK Silicon Cable		
38	Q1 Q2 Q3 Q4 Q5 Q6	6	IRF7749	DirectFET_L8	MOSFET 60V	IRF7749L1TRPBF/IRF7749L2TRPBF	
39	R1	1	0R	R_0603	RES 0 OHM 50 V 0603 5% 1/10W	CR0603-J/-000ELF	DO NOT MOUNT
40	R2 R3	2	22R	R_0603	SMD 22 ohm 1%	CR0603-FX-22R0ELF	
41	R6 R35 R36 R37	4	100R	R_0603	SMD 100ohm 1% 1/10W	CR0603-FX-1000ELF	
42	R7 R40 R41	3	1k	R_0603	SMD 1K 1% 1/10W	CR0603-FX-1001ELF	
43	R8 R9 R23	3	220R	R_0603	SMD 220 ohm 1%	CR0603-FX-2200ELF	
44	R10	1	3.3k	R_0603	SMD 3.3KOHM 1/10WATT 1%	CR0603-FX-3301ELF	
45	R11	1	18k	R_0603	SMD 1/10watt 18Kohms 1%	CR0603-FX-1802ELF	
46	R12	1	15k	R_0603	SMD 1/10watt 15Kohms 1%	CR0603-FX-1502ELF	

47	R13 R28 R39	3	10k	R_0603	SMD 10K 1% 1/10W	CR0603-FX-1002ELF			
48	R14	1	220k	R_0603	SMD 0603 220Kohms 1%	CR0603-FX-2203ELF			
49	R15 R17 R19 R21	4	39k	R_0603	SMD 39K ohm 1%	CR0603-FX-3902ELF			
50	R16 R18 R20 R22 R42 R43 R44	7	2k2	R_0603	SMD 2.2K 1% 1/10W	CR0603-FX-2201ELF			
51	R24 R29 R32	3	0.0005R	SHUNT_CSS2H-3920	SMD 0.5mOHMS 9W 1%	CSS2H-3920R-L500FE			
52	R25 R26 R30 R31 R33 R34	6	4.7R	R_0603	SMD 1/10watt 4.7ohms 1%	CRCW06034R70FKEA			
53	R27	1	NTC 10k	R_0603	NTC Thermistors 10K OHM 1%	NCP18XH103F03RB			
54	R38	1	22k	R_0603	SMD 22K ohm 1%	CR0603-FX-2202ELF			
55	U1	1	STM32F40X_LQFP64	STM32F4x5RG	MCU ARM M4 1024 LQFP-64	STM32F405RGT6			
56	U2	1	LM3671	SOT-23-5	VREG	LM3671MF-3.3/NOPB			
57	U3	1	DRV8301	TSSOP-56-PP	MOSFET Driver DRV8301	DRV8301DCA			
58	U4	1	TJA1051TK3	DFN-8-1EP_3x3mm_Pitch0.65mm	CAN TRANSCEIVER	TJA1051TK/3,118			
59	U5 U6 U7	3	AD8418	MSOP-8_3x3mm_Pitch0.65mm	Current Sense Amplifiers	AD8418AWBRMZ			
60	U8	1	NRF24L01P	QFN-20-1EP_4x4mm_Pitch0.5mm	RF Transceiver 2.4GHz	nRF24L01P-T			
61	U9	1	CONN_U_FL	U_FL_Hirose_U_FL-R-SMT-1_Verical	RF Connectors 50 Ohms	U_FL-R-SMT-1(40)			
62	U10	1	MPU9150	QFN-24_4x4mm_Pitch0.5mm	IMUs - Inertial Measurement Units	MPU-9150	DO NOT MOUNT		
63	U11	1	SENSOR_VOLTAGE	SW_SPDT_PCM12	Slide Switches SPDT ON-ON	PCM12SMTR			
64	X1	1	8M	Crystal_SMD_5032_4Pads	Crystals 8.0MHz 10pf 10ppm	ABM3B-8.000MHZ-10-1-U-T			
65	X2	1	16M	Crystal_SMD_5032_4Pads	Crystals +/-10PPM 16MHZ 10pF	ABM3B-16.000MHZ-10-1-U-T			