











Designator Manufacturer 1 Number 1  11. C1.2, C13, C57, C58  22, C45  33, C17, C18, C23, C24, C25, C27, C28, C28, C29, C29, C28, C39, C30, C31, C31, C31, C31, C31, C31, C31, C31	Description CAP CER 0402 22PF 50V 5% COB CAP CER 0603 100 F 10V 10% X5R CAP CER 0603 100 F 50V 10% X5R CAP CER 0603 100 F 50V 10% X5R CAP CER 0402 100 F 10V 10% X5R CAP CER 0403 10F 50V 10% X5R CAP CER 0403 10F 50V 10% X5R CAP CER 0603 10F 50V 10% X5R CAP CER 0603 10F 50V 10% X5R CAP CER 0603 10F 50V 10% X5R 105 CAP CER 0603 10F 50V 10% X5R 1	22pF 10uF 100nF 100nF 470uF 1uF 4.7uF 220nF 1uF 1nF 100uF 4.7nF 1N4148WT 5MAJ30A	25 27 17 1 8 1 1 16 2	C0805C106K8PACTU  C0603C104K5RACTU  GRM155R71C104KA88E  UPW1H471MHD1TO  GRM155R60J105KE19D  C1206C475K5PACTU
12, C45 13, C17, C18, C23, C24, C25, C27, C28, 13, C17, C18, C23, C24, C25, C27, C28, 142, C43, C44, C60, C62, C71, C72, C73, 142, C43, C44, C60, C62, C71, C72, C73, 152, C6, C52, C56, C61, C11, C14, C15, 153, C6, C7, C76, C61, C11, C14, C15, 154, C19, C20, C21, C22, C47, C48, C49 130 131, C36, C41, C46 135 136, C51, C55, C61, C64, C65, C66, C75, 156, C77, C78, C79, C80, C81, C82, C83 153, C54 154, D3, D4, D5, D11, D13, D14, D15 155, D6, D9, D10 177 172 172 175 176, C77, C78, C79, C79, C79, C79, C79, C79, C79, C79	5% COB CAP CER 0803 10uF 10V 10% X5R  CAP CER 0603 100nF 50V 10% X5R  CAP CER 0603 100nF 50V 10% X5R  CAP CER 0402 100nF 16V 10% X5R  CAP CER 0402 100nF 16V 10% X5R  CAP CER 0402 1uF 6.3V 10% X5R  CAP CER 0402 1uF 6.3V 10% X5R  CAP CER 0603 220nF 10V 10% X5R  CAP CER 0603 10mF 50V 10% X5R  CAP CER 0603 1nF 50V 10% X7R  CAP CER 0603 1nF 50V 10% X7R  CAP CER 0603 1nF 50V 10% X7R  OLODE X5R  DIODE 500 X523	10uF  100nF  100nF  470uF  1uF  4.7uF  220nF  1uF  10uF  1.7uF  1.7uF  1.7uF  1.7uF  1.7uF  1.7uF	25 17 1 8 1 4	C0805C106K8PACTU  C0603C104KSRACTU  GRM15SR71C104KA886 UPW1H471MH01TO  GRM15SR60105KE19D  C1206C475K9ACTU  C0603KRX7R7B8224  GRM218R71H105KA12i  C0603C102KSRACTU
32. C17. C18. C23. C24. C25. C27. C28.  292. C22. C23. C24. C24. C25. C27. C28.  292. C22. C23. C24. C24. C26. C26. C27. C28.  24. C65. C7. C8. C9. C10. C11. C14. C15.  25. C52. C56. C59. C67. C58. C69. C70  25.  26. C12. C56. C59. C67. C58. C69. C70  27.  28.  28.  29.  20.  20.  20.  20.  20.  20.  20	10% XSR  CAP CER 0603 100nF 50V 10% XSR  CAP CER 0603 100nF 16V 10% XSR  CAP CER 0402 100nF 16V 10% XSR  CAP CER 0402 1uF 6.3V 10% XSR  CAP CER 0402 1uF 6.3V 10% XSR  CAP CER 1206 4.7uF 50V 10% XSR  CAP CER 1206 4.7uF 50V 10% XSR  CAP CER 0603 220nF 10V 10% XSR  CAP CER 0603 10F 50V 10% XSR  CAP CER 0603 1nF 50V 10% XSR  DIODE SODS23  DIODE TSO SODS23  DIODE SCHOETLY 30V SMA DIODE SCHOETLY 30V SMA DIODE DO-214AB	100nF 100nF 470uF 1uF 4.7uF 220nF 1uF 1nF 100uF 4.7nF 1N4148WT	25 17 1 8 1 4	C0603C104KSRACTU GRM15SR71C104KA88E UPW11471MHD1TO GRM15SR601105KE19D C1206C475KSPACTU CC0603KRX7R78B224 GRM21BR71H105KA12I C0603C102KSRACTU
229, C32, C33, C34, C37, C38, C39, C40, C42, C32, C34, C44, C37, C46, C67, C71, C72, C73, C74, C66, C71, C72, C73, C74, C66, C72, C76, C76, C76, C76, C76, C76, C76, C76	10% X7R  CAP CER 4062 1200nF 16V 10% X7R  CAP ALLH 470UF 50V 20% CAP CER 6062 1206 6.7 UF 50V 10% X5R  CAP CER 1206 6.7 UF 50V 10% X5R  CAP CER 1206 6.7 UF 50V 10% X5R  CAP CER 1206 3.7 UF 50V 10% X5R  CAP CER 6063 220nF 10V 10% X7R  CAP CER 6063 1nF 50V 10% X7R  CAP CER 6063 1nF 50V 10% X7R  CAP CER 6063 1nF 50V 10% X7R  CAP ALU 100UF 50V 20% 105C CAP CER 6062 4.7 NF 25V 10% X7R  DIODE SOD 523  DIODE TVS 30V SMA DIODE 50N CHITty 3 MA A SMA	100nF 470uF 1uF 4.7uF 220nF 1uF 1nF 100uF 4.7nF 1N4148WT	17 1 8 1 4	GRM155R71C104KA880 UPW1H47TMHD1TO GRM155R60J105KE19D C1206C475K5PACTU CC0603KRX7R7BB224 GRM21BR71H105KA12i C0603C102K5RACTU
744 (-4, 6, 7, 7, 6, 7, 9, 10, 11, 114, 115, 126, 125, 126, 125, 126, 125, 126, 125, 126, 125, 126, 126, 126, 126, 126, 126, 126, 126	10% X7R  CAP CER 4062 1200nF 16V 10% X7R  CAP ALLH 470UF 50V 20% CAP CER 6062 1206 6.7 UF 50V 10% X5R  CAP CER 1206 6.7 UF 50V 10% X5R  CAP CER 1206 6.7 UF 50V 10% X5R  CAP CER 1206 3.7 UF 50V 10% X5R  CAP CER 6063 220nF 10V 10% X7R  CAP CER 6063 1nF 50V 10% X7R  CAP CER 6063 1nF 50V 10% X7R  CAP CER 6063 1nF 50V 10% X7R  CAP ALU 100UF 50V 20% 105C CAP CER 6062 4.7 NF 25V 10% X7R  DIODE SOD 523  DIODE TVS 30V SMA DIODE 50N CHITty 3 MA A SMA	100nF 470uF 1uF 4.7uF 220nF 1uF 1nF 100uF 4.7nF 1N4148WT	17 1 8 1 4	GRM155R71C104KA880 UPW1H47TMHD1TO GRM155R60J105KE19D C1206C475K5PACTU CC0603KRX7R7BB224 GRM21BR71H105KA12i C0603C102K5RACTU
74. (6. 67. CR. C9. (10. C11. (14. C15.)  25. C15. C2. C5. C5. C5. C5. C5. C5. C5. C5. C5. C5	CAP CER 0402 1000 F 16V  CAP ALU 470 LF 50V 20%  CAP ALU 470 LF 50V 20%  CAP CER 0402 1 LF 6.3V  10% X5R  CAP CER 0402 1 LF 6.3V  10% X5R  CAP CER 0603 220 nF 10V  10% X5R  CAP CER 0603 1 LF 50V  10% X5R  CAP CER 0402 4.7 nF 25V  10% X5R  DIODE SODS23  DIODE TVS 30V SMA  DIODE TVS 30V SMA  DIODE DO-214AB	100nF 470uF 1uF 4.7uF 220nF 1uF 1nF 100uF 4.7nF 1N4148WT	17 1 8 1 4	GRM155R71C104KA880 UPW1H47TMHD1TO GRM155R60J105KE19D C1206C475K5PACTU CC0603KRX7R7BB224 GRM21BR71H105KA12i C0603C102K5RACTU
1.5	CAP ALL 470LF 50V 20%.  LAP CER 60402 LLF 6.3V LOW XSR 60402 200 F 10V LOW XSR 60402 200 F 10V LOW XSR 60402 10 F 50V LOW XSR 60402 10 F	470uF 1uF 4.7uF 220nF 1uF 1nF 100uF 4.7nF 1N4148WT	1 8 1 4	UPW1H471MHD1TO GRM15SR60105KE19D C1206C475K5PACTU CC0603KRX7R78B224 GRM21BR71H105KA12I C0603C102K5RACTU
1.6, C19, C20, C21, C22, C47, C48, C49 330 331, C36, C41, C46 335, C35, C31, C35, C61, C64, C65, C66, C75, C77, C77, C80, C79, C80, C81, C82, C83 345, C54 3	CAP CER 0402 LUF 6.3V ION XSR CAP CER 1206 4.7 UF 50V ION XSR CAP CER 1206 4.7 UF 50V ION XSR CAP CER 0603 220nF 10V ION XTR CAP CER 0603 120n 50V ION XTR CAP CER 0603 1nF 50V ION XTR CAP CER 0603 1nF 50V ION XTR CAP CAL 100uF 50V 20% ION XTR ION	1uF 4.7uF 220nF 1uF 1nF 100uF 4.7nF 1N4148WT	8 1 4	GRM155R60J105KE19D C1206C475K5PACTU CC0603KRX7R7B8224 GRM21BR71H105KA12I C0603C102K5RACTU
330 (33, C36, C41, C46 (33) (34, C45, C66, C75, C75, C77, C78, C79, C80, C81, C82, C83 (34) (34) (34) (34) (34) (34) (34) (34	CAP CER 1206 A7.UF 50V 10% XSR CAP CER 0603 220nF 10V 10% X7R CAP CER 0805 1UF 50V 10% X7R CAP CER 0803 1nF 50V 10% X7R CAP CER 0603 1nF 50V 10% X7R CAP CER 0602 4.7 nF 25V 10% X7R PIODE SODS23 DIODE TVS 30V SMA DIODE TVS 30V SMA DIODE TS ASMA	4.7uF 220nF 1uF 1nF 100uF 4.7nF 1N4148WT	1 4	C1206C475K5PACTU  CC0603KRX7R7BB224  GRM21BR71H105KA12i  C0603C102K5RACTU
331, C36, C41, C46  335  336  337  338  339  330  331, C31, C35, C61, C64, C65, C66, C75, C76, C77, C79, C80, C81, C82, C83  331, D3, D4, D5, D11, D13, D14, D15  22, D8  34, D9, D10  377  372  373  374  375  377  377  378  378  379  379  371  371  371  372  373  374  375  377  377  377  377  378  378  378	10% XSR (AP CER 0603 220nF 10V 10% X7R 105C 10% X7R 105C 105C 105C 105C 105C 105C 105C 105C	220nF 1uF 1nF 100uF 4.7nF 1N4148WT	1	CC0603KRX7R7BB224 GRM21BR71H105KA12I C0603C102K5RACTU
235 25 25 25 26 26 26 26 26 26 26 26 26 26 26 26 26	10% X7R CAP CER 0803 1uF 50V 10% X7R CAP CER 0803 1nF 50V 10% X7R CAP ALU 100uF 50V 20% 105C CAP CER 0402 4.7nF 25V 10% X7R DIODE SODS23 DIODE TVS 30V SMA DIODE DODE 130V SMA DIODE DODE 14AB	1uF 1nF 100uF 4.7nF 1N4148WT	1	GRM21BR71H105KA12I C0603C102K5RACTU
250, C51, C55, C61, C64, C65, C66, C75, 76, C77, C78, C79, C80, C81, C82, C83  33, C54  31, D3, D4, D5, D11, D13, D14, D15  32, D8  36, D9, D10  37  11, E7, F3  5  81, F82	109s X7R  CAP CER 0603 1nF 50v 109s X7R  CAP ALU 100uF 50V 20% 105C CAP CER 0402 4.7nF 25V 109s X7R  DIODE SOD523  DIODE TVS 30V SMA  DIODE DODE TVS 30V SMA  DIODE DODE 24AB	1nF 100uF 4.7nF 1N4148WT		C0603C102K5RACTU
250, C51, C55, C61, C64, C65, C66, C75, 76, C77, C78, C79, C80, C81, C82, C83  33, C54  31, D3, D4, D5, D11, D13, D14, D15  32, D8  36, D9, D10  37  11, E7, F3  5  81, F82	CAP CER 0603 1nF 50V 10% X7R CAP ALU 100UF 50V 20% 105C CAP CER 0402 4.7nF 25V 10% X7R DIODE SOD523 DIODE TVS 30V SMA DIODE Schottky 3A SMA DIODE DO-214AB	1nF 100uF 4.7nF 1N4148WT		C0603C102K5RACTU
7.6, C.77, C.78, C.79, C.80, C.81, C.82, C.83  5.53, C.54  5.63  5.10, 30, 104, 105, 1011, 1013, 1014, 1015  5.10, 108  5.10, 109, 1010  5.77  5.11  6.11  6	10% X7R CAP ALU 100UF 50V 20% 105C CAP CER 0402 4.7nF 25V 10% X7R DIODE SOD523 DIODE TVS 30V SMA DIODE Schottky 3A SMA DIODE DO-214AB	100uF 4.7nF 1N4148WT	16 2	
533 C54  663  301, D3, D4, D5, D11, D13, D14, D15  202, D8  86, D9, D10  77  71  112  114, T2, F3  5  81, F82	105C CAP CER 0402 4.7nF 25V 10% X7R DIODE SOD523 DIODE TVS 30V SMA DIODE Schottky 3A SMA DIODE DO-214AB	4.7nF 1N4148WT	2	
.63	CAP CER 0402 4.7nF 25V 10% X7R DIODE SOD523 DIODE TVS 30V SMA DIODE Schottky 3A SMA DIODE DO-214AB	4.7nF 1N4148WT	1	UVZ1H101MPD1TD
12, D3, D4, D5, D11, D13, D14, D15 12, D8 12, D8 13, D9, D10 17 17 18 11, E2, F3 15 181, F82	10% X7R DIODE SODS23 DIODE TVS 30V SMA DIODE Schottky 3A SMA DIODE DO-214AB	1N4148WT	1	1
22, D8	DIODE TVS 30V SMA DIODE Schottky 3A SMA DIODE DO-214AB		_	CC0402KRX7R8BB472
56, D9, D10  57  5112  516  11, F2, F3  51, F82	DIODE Schottky 3A SMA DIODE DO-214AB	SMAJ3UA	8	
77	DIODE DO-214AB	SK310A-TP	3	
012 016 1, F2, F3 5 81, F82		SK310A-TP S3A-13-F	1	
016 1, F2, F3 5 81, F82	Z-Diode	SZMM3Z4V		
1, F2, F3 5 81, F82	1	7T1G RSB39VTE-	1	ZENER-DIODE
S 81, FB2	DIODE TVS	17	1	RSB39VTE-17
B1, FB2	FUSE PTH ATO	3522-2	3	3522-2
B1, FB2	FUSE 1812 PTC 750mA 6V	PTS181233V 075	1	PTS181233V075
	FERRITE BEAD 1806 60ohm	BLM41PG60 0SN1L	2	BLM41PG600SN1L
ID1, FID2, FID3	60ohm Fiducial	FIDUCIAL	3	FIDUCIAL
<del> </del>		XAL5050-	ď	
1	IND 15uH 3.9A 20% IND 0805 10uH 240mA	153MED CBC2012T1	1	XAL5050-153MED
2	20%	00M	1	CBC2012T100M
ED1, LED4, LED10	LED 0805 Yellow	5988140107 F	3	5988140107F
		5988110107	Ť	
ED2, LED3, LED6, LED8	LED 0805 Red	F 5988170107	4	5988110107F
ED7	LED 0805 Green	F	1	5988170107F
1, P2	HDR 20pos Vert Dual Row	5-104068-1	2	5-104068-1
3	.,	5x2 IDCw	1	
21.05	Mosfet N-channel 60V 356A 117W 9.3mOhms	PSMN7R0- 60YS,115	2	DCMANTED COVE 115
Q1, Q5	Mosfet N-Channel 30V	IRLML6346T	_	PSMN7R0-60YS,115
Q8, Q9	3.4A 63mOhm	RPBF	2	
t1, R2	RES 0402 22r 62.5mW 1%	22r	2	
13 14, R7, R8, R10, R14, R15, R19, R20	RES 0402 22r 63mW 1% RES 1206 0.1r 0.5w 1%	200K 0.1r	8	CRCW0402200KFKED CRM1206-FX-R100ELF
15, R6, R31, R32, R36, R37	RES 0603 4.7K 100mW 1%	4.7K	6	
19, R42, R56, R71	RES 0603 10r 100mW 1%	10r	4	
x11, R23, R24, R46, R47, R73	RES 0603 10K 100mW 1%	10K	6	ERJ-3EKF1002V
113	RES 0.06 OHM 1W 1% 2512 SMD	0.6r	1	RL2512FK-070R06L
	RES 100K OHM 1/10W 1%		Ė	
k16, R21, R43, R57, R59, R60, R61, R62	0603 SMD	100K	8	
133, R34, R35 140, R58, R69, R70	RES 0603 1K 100mW 1% RES 0603 1.8K 100mW 5%	1K 1.8K	4	ERJ-3EKF1001V RC0603JR-071K8L
140, K58, K69, K70	RES 0402 1M 100mW 5%	1.8K 1M	1	
	RES ARRAY 4 RES 10K 1206		Ė	
IN1, RN2, RN3	62.5mW 5% RES ARRAY 4 RES 1K 1206	10K	3	CAY16-103J4LF
N5	62.5mW 5%	1K	1	CAY16-102J4LF
IV1, RV2	VAR 0603 5V	CG0603ML C-05E	2	CG0603MLC-05E
	SWTCH Momentary			
1 TE Connectivity 1571610-2	Washable	1571610-2	1	1571610-2
P3, TP16, TP17, TP18, TP22, TP23, TP24, P25, TP26, TP27, TP28, TP29, TP30, TP31,		1		
P32, TP33, TP34, TP35, TP36, TP37, TP38,		1		1
P39, TP40, TP41, TP42, TP43, TP44, TP45, P46, TP47, TP48, TP49, TP50, TP51, TP52,		1		1
P53, TP54, TP55, TP56, TP57, TP58, TP59, P60, TP61, TP62, TP63, TP64, TP65, TP66,		1		1
P60, TP61, TP62, TP63, TP64, TP65, TP66, P67, TP68, TP69, TP70, TP71, TP72	Test Point	TestPoint	55	TestPoint
J1 Atmel ATMEGA32U2-MUR		Atmega32u	,	ATMEGA32U2-MU2
	Atmega32u2	2 Atmega256	H	
J2 Atmel ATMEGA2560-16AUR	Atmega2560	0 LM25011MY	1	ATMEGA2560AU
J3	REG BUCK	/NOPB	1	LM25011
Allegro MicroSystems	Stepper Driver - Fully Integrated, Control and			
J5, U6, U7, U8 LLC A4982SETTR-T	Power Stage	A4982	4	
J10	4ch iCoupler	ADUM7441	1	ADUM7441
tl, X9, X12, X27, X28	Connector 2pos 2.54mm locking	C-GRID-02- 70543	5	C-GRID-02-70543
2	USB connector B PTH	USB-B	_	USB-B
3, X10	PHOENIX PHOENIX CONNECTOR	0395311004 MDT4	_	MSTBV4
(4, X6, X8, X14, X15	PHOENIX CONNECTOR Connector 2pos 2.54mm	MPT4 C-GRID-03-	5	
5, X7, X11, X21, X22, X23	locking	70543	6	C-GRID-03-70543
17, X18	PIN HEADER Connector 2x1 2.54mm	PINHD-2X3	2	PINHD-2X3
<del></del>	PTH 2.54mm			I
35	1	M02PTH	1	M02PTH