Designator	Value	Comment PWM_Control	Description Header, 6-Pin	Footprint HDR1X6	Quantity 1
[NoValue], *1, *2, *3, *4, *5		LM324AMX/NOPB			6
C1, C2, C3	1000pF	GRM188R71C102KA01 D	CAP, CERM, 1000pF, 16V, +/-10%, X7R,	0603L	3
C4	1uF	885012206052	0603 CAP, CERM, 1 μF, 16	0603L	1
C5	1uF	GRM188R70J105KA01	V, +/- 10%, X7R, 0603 CAP, CERM, 1 µF, 6.3	0603L	1
		D C1608X7S2A473K080A	V, +/- 10%, X7R, 0603 CAP, CERM, 0.047 μF,		
C6	0.047uF	В	100 V, +/- 10%, X7S, 0603	0603L	1
C7	0.1uF	GRM188R70J104KA01	CAP, CERM, 0.1 µF, 6.3 V, +/- 10%, X7R,	0603L	1
		GRM188R72A104KA35	0603 CAP, CERM, 0.1 μF,		
C8	0.1uF	D D	100 V, +/- 10%, X7R, 0603	0603L	1
C9	4.7uF	GRM32ER71K475KE14	CAP, CERM, 4.7 µF, 80	1210_270L	1
C10, C13, C32, C36,		L	V, +/- 10%, X7R, 1210		
C37, C38, C39, C40, C41, C42, C43, C44	0.1uF	0603YC104JAT2A	CAP, CERM, 0.1 µF, 16 V, +/- 5%, X7R, 0603	0603L	12
C11, C12	2.2uF	10V	C0805C225K8RACAUT O. 2.2µF ±10% 10V Ceramic Capacitor X7R 0805 (2012 Metric)	C0805	2
C14, C16	100uF	Ceramic	Polarized Capacitor (Surface Mount)	CAPAE660X800N	2
			C0805C104K8RACTU. 0.1µF±10%10V		
C15, C17, C26, C33	0.1μF	10V	U. TµF ±10% 10V Ceramic Capacitor X7R 0805 (2012 Metric) C0805C103K8RAC7800	C0805	4
C18	10nF		. 10000pF ±10% 10V Ceramic Capacitor X7R 0805 (2012 Metric)	C0805	1
C19	1uF		CL21B105KPFNNNE. 1µF±10% 10V Ceramic Capacitor X7R 0805 (2012 Metric)	C0805	1
C20, C21, C22, C23, C24	0.1uF		C0805C104K8RACTU. 0.1μF ±10% 10V Ceramic Capacitor X7R 0805 (2012 Metric)	C0805	5
C25, C35	0.1uf	10V	C0805C104K8RACTU. 0.1µF ±10% 10V Ceramic Capacitor X7R 0805 (2012 Metric)	C0805	2
C27, C28, C29	2200pF	GRM188R71C222KA01 D	CAP, CERM, 2200pF, 16V, +/-10%, X7R,	0603L	3
			0603 CBR08C409B5GAC,		
C30, C31	28pF	50V	CBR08C409B5GAC. 4pF ±0.1pF 50V Ceramic Capacitor COG, NP0 0805 (2012 Metric)	C0805	2
C34 D1	10uF Red	Cap LTST-C170KRKT	Capacitor LED, Red, SMD	C0805 LED_LTST-C170	1
P1	Red	74650094R x2	Header, 2-Pin	HDR1X2	1
P2 P3		CAN 74650094R x3	Header, 4-Pin Header, 3-Pin	HDR1X4 HDR1X3	1
P4 P5		PROGRAMMING DM3D-SF	Header, 7-Pin CONN MICRO SD	HDR1X7 FP-DM3D-SF-MFG	1
Q1, Q2, Q3, Q4, Q5,		NMOS-2	N-Channel Power	TO-220AB	6
Q6 R1, R2, R5, R6, R7, R8, R10, R13, R14, R15, R17, R19, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32,	0.007	CRE2512-FZ-R007E-3	MOSFET RES SMD 0.007 OHM 1% 3W 2512	2512L	30
R33, R34, R35, R36,	0.007		170 SW 2512		
R33, R34, R35, R36, R37, R38, R40, R41	75k	CRCW060375K0JNEA	RES, 75 k, 5%, 0.1 W,	0603L	2)
R33, R34, R35, R36, R37, R38, R40, R41 R3, R4	75k	CRCW060375KQJNEA	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W,		2
R33, R34, R35, R36, R37, R38, R40, R41 R3, R4	75k 10k	CRCW060375K0JNEA CRCW060310K0JNEA	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 1.5 k, 5%, 0.1 W,	0603L	1
R33, R34, R35, R36, R37, R38, R40, R41 R3, R4	75k 10k 1.5k	CRCW060375K0JNEA CRCW060310K0JNEA CRCW06031K50JNEA	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603	0603L	
R33, R34, R35, R36, R37, R38, R40, R41 R3, R4	75k 10k	CRCW060375K0JNEA CRCW060310K0JNEA	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 1.5 k, 5%, 0.1 W, 0603	0603L	1
R33, R34, R35, R36, R37, R38, R40, R41 R3, R4 R9 R11	75k 10k 1.5k 330	CRCW060375KQJNEA CRCW060310KQJNEA CRCW06031K5QJNEA CRCW0603330RJNEA	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 0603 REP-3GEY1103V. 10 KOhms ±5% 0.1 W, 1/10W Chip Resistor 0603 (1608 Metric) Automotive AEC-	0603L 0603L	1
R33, R34, R35, R36, R37, R38, R40, R41 R83, R4 R69 R11	75k 10k 1.5k 330	CRCWIO60375KQJINEA CRCWIO60310KQJINEA CRCWIO6031KSQJINEA CRCWIO603330RJINEA	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 13 k, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 17 low Chip Resistor 0603 (108 Metric) 40 Lutomotive AEC-0200 Thick Film REJ-3GEY1103V. 10 ROTHER SES 0.1 W, 17 low Chip Resistor 0603 (108 Metric) 6033 (108 Metric) 40 Lutomotive AEC-0603 (108 Metric) 40 Lutomotive AEC-	0603L 0603L 0603L J1-0603	1
R33, R34, R35, R36, R37, R38, R40, R41 R8, R8 R9 R11 R12	75% 10k 1.5k 330 120	CRCW060375KQINEA CRCW060310KQINEA CRCW060311K5QINEA CRCW060333GRINEA 5% 5%	RES, 75 K, 5%, 0.1 W, 0603 RES, 10 K, 5%, 0.1 W, 0603 RES, 10 K, 5%, 0.1 W, 0603 RES, 15 K, 5%, 0.1 W, 0603 RES, 15 K, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 0603 RES, 360 ohm, 5%, 0.1 W, 0603 RES, 360 ohm, 5%, 0.1 W, 17 low Chip Resistor 0603 (1608 Metric) Automotive AEC-0200 Thick Film RES, 3GEY1103V. 10 ROBOTION RES, 10 W, 17 low Chip Resistor 0603 (1608 Metric) Automotive AEC-0200 Thick Ghip Resistor 0200 Thick Ghip Resistor 0200 Thick Ghip Resistor 0200 Thick Ghip Resistor 0200 Thick Ghip Resistor 0700 W, 0603 RES, 56 ohm, 5%, 0.1 W, 0603 RES, 56 ohm, 5%, 0.1 W, 0603 RES, 56 ohm, 5%, 0.1 W, 0603	0603L 0603L J1-0603	1 1
R13, R34, R35, R36, R37, R38, R40, R41 R83, R4 R9 R11 R12 R16	75% 10k 1.5k 330 120 10K	CRCW060375KQINEA CRCW060310KQINEA CRCW060311K5QINEA CRCW060333GRINEA 5% 5% CRCW060356RQINEA	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 13 k, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 17 W ohe Resistor 0603 (108 Metric) 404 metric 17 W ohe Resistor 0603 (108 Metric) 404 metric 17 W ohe Resistor 0603 (108 Metric) 404 metric 17 W ohe Resistor 0603 (108 Metric) 404 metric 17 W ohe Resistor 0603 (108 Metric) 404 metric 17 W ohe Resistor 0603 (108 Metric) 404 metric 18 W ohe Resistor 0603 (108 Metric) 404	0603L 0603L J1-0603 J1-0603 D603L 0603L FP-NCP15-NCU15- 0_06-MFG	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
R13, R34, R35, R36, R37, R38, R40, R41 R9 R11 R12 R16 R18 R20, R21, R22 R39 R71, R72, R73, R74, R75, R76, R77, R78	75% 10k 1.5k 330 120 10K	CRCW060375KDINEA CRCW060310KDINEA CRCW060331K5DINEA CRCW0603330RINEA 5% CRCW0603356RDINEA CRCW060356RDINEA	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 1003 ROBINST RES, 330 ohm, 5%, 0.1 W, 1003 ROBINST RES, 330 ohm, 5%, 0.1 W, 1003 RES, 330 ohm, 5%, 0.1 W, 1004 RES, 360 ohm, 5%, 0.1 W, 1004 RES, 560 ohm, 5%, 0.1 W, 0603	0603L 0603L J1-0603 J1-0603 0603L 0603L FP-NCP15-NCU15-	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
R13, R34, R35, R36, R37, R38, R40, R41 R83, R4 R9 R11 R12 R16	75% 10k 1.5k 330 120 10K	CRCW060375K0JNEA CRCW06031K50JNEA CRCW06031K50JNEA CRCW060333GRJNEA 5% 5% CRCW060356R0JNEA CRCW060356R0JNEA	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 1003 RED, 36C Y103V 10 ROBINST 10 RES, 300 ohm, 5%, 0.1 W, 1003 RES, 56 ohm, 5%, 0.1 W, 0603 RES, 56 ohm, 5%, 0.1 W, 1003 RES, 56 ohm, 50%, 0.	0603L 0603L J1-0603 J1-0603 J1-0603 FP-NCPI5-NCUI5- Q05-MFG PIS636 SM43 SMIR LFS Keystone5002	1 1 1 3 3 3 1 1 8 8
R13, R34, R35, R36, R37, R38, R40, R41 R83, R4 R89 R11 R12 R16 R16 R20, R21, R22 R39 R11, R12, R13, R14, R15, R16, R17, R18 S1 IP1, IP2, IP3, IP4, IP5, IP6, IP5, IP6, IP9, IP10, IP11, IP91, IP13, IP4	75k 10k 1.5k 330 120 10K	CRCW060375K0INEA CRCW060310K0INEA CRCW06031K50INEA CRCW0603330RINEA 5% CRCW060356R0INEA CRCW060356R0INEA 10k SW-PB	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 10 W, 0603 RES, 15 k, 10 W, 1	0603L 0603L 11-0603 11-0603 0603L 0603L 0603L 0603L 0603L 0604MF 075636 SM43 SMTR UFS	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
R13, R34, R35, R36, R37, R38 R40, R41 R3, R4 R9 R11 R12 R16 R17	75k 10k 1.5k 330 120 10K	CRCW060375KQINEA CRCW06031K5QINEA CRCW060333GRINEA CRCW060333GRINEA 5% 5% CRCW060356RQINEA 10k SW-PB 5002 DRV83225RTAT TJA1051T_3.118	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 1003 RES, 340 ohm, 5%, 0.1 W, 1003 RES, 360 ohm, 5%, 0.1 W, 0603 RES, 56 ohm, 50%, 0.1 W, 0603 RES, 56 ohm, 50%, 0.1 W, 0603 RES, 56 ohm, 50%, 0	0603L 0603L J1-0603 J1-0603 J1-0603 D603L 0603L 0603L 0603L FP-NCP15-NCU15- 0_05-MFG PTS06-50M43 SMTR LFS Ceystone5002 CFN50P-600X400X80- 41N415X415 SDIC127P-600X175-8N	1 1 1 1 3 3 1 1 8 8
R13, R34, R35, R36, R37, R38 R40, R41 R3, R4 R9 R11 R12 R16 R17	75k 10k 1.5k 330 120 10K	CRCW060375KQINEA CRCW06031KSQINEA CRCW06031KSQINEA CRCW060333GRINEA 5% 5% CRCW060356RQINEA 10k SW-PB 5002 DRV9322SRTAT	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 17 k, 0.1 W, 0603 RES, 15 k, 0.1 W, 17 k, 0.1 W, 0603 RES, 15 k, 0.1 W, 17 k, 0.1 W, 17 k, 0.1 W, 0603 RES, 15 k, 0.1 W, 17 k, 0.1 W, 0603 RES, 15 k, 0.1 W, 17 k, 0.1 W, 0603 RES, 15 k, 0.1 W, 0603	0603L 0603L 0603L J1-0603 J1-0603 D603L 0603L 0603L 0603L FP-NCP15-NCU15- Q_05-MFG Q_05-MFG VESSESSA43 SMTR LFS Keystone5002 OFN50P400X400X80-41N415X415	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
R13, R34, R35, R36, R37, R38, R40, R41 R83, R4 R89 R11 R12 R16 R16 R17 R17 R17 R17 R17 R17 R17 R17, R17 R17, R18 R17, R18 R18 R18 R18 R18 R18 R18 R18 R18 R18	75k 10k 1.5k 330 120 10K	CRCW060375KUINEA CRCW060310KUINEA CRCW06031KSUINEA CRCW060333GRINEA 5% 5% CRCW0603356RUINEA CRCW060356RUINEA 10k SW-PB 5002 DRV83225RTAT TJA1051T_3.118 STM2F4058GT01R	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 1003 RES, 360 ohm, 5%, 0.1 W, 1003 RES, 56 ohm, 5%, 0.1 W, 0603 RES, 56 ohm, 5%, 0.1	0603L 0603L 11-0603 11-0603 11-0603 0603L 0603L 6003L	1 1 1 1 3 3 1 1 8 8
R13, R34, R35, R36, R37, R38, R40, R41 R3, R4 R9 R11 R12 R16 R17	75k 10k 1.5k 330 120 10K	CRCW060375KUJNEA CRCW060315KUJNEA CRCW060333GRINEA SS% SS% CRCW060335GRUJNEA CRCW060335GRUJNEA LOK CRCW06035GRUJNEA LOK SW-PB S002 DRV8322SRTAT TJA1051T_3.118 STM2F405RGT0TR TLV1117-33IDCVR INA180 LUSJOHTR	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 0603 RES, 330 ohm, 5%, 0.1 W, 1003 ROBING RES, 330 ohm, 5%, 0.1 W, 1003 ROBING RES, 330 ohm, 5%, 0.1 W, 1003 RES, 56 ohm, 5%, 0.1 W, 0603 RES, 56	0603L 0603L J1-0603 J1-0603 J1-0603 D603L 0603L FP-NCP15-NCU15- 0,05-MFG PTS636 SM43 SMTR LFS Keystone5002 CFNS0P600X600X80-41N415X415 SOIC127P600X175-8N SIM32F405RGT0IR SOIT230P70X180-4N INA180 IUS30HTR	1 1 1 3 3 3 1 1 1 4 1 4 1 1 1 1 1 1 1 1
R13, R34, R35, R36, R37, R38, R40, R41 R3, R4 R9 R11 R12 R16 R17	75k 10k 1.5k 330 120 10K	CRCW060375KQINEA CRCW06031KSQINEA CRCW060331KSQINEA CRCW060333GRINEA 5% 5% CRCW060356RQINEA 10k SW-PB 5002 DRV8323SRTAT TJA1051T_3.118 STM32F-658GT0TR INV1117-331DCYR INA180	RES, 75 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 10 k, 5%, 0.1 W, 0603 RES, 15 k, 5%, 0.1 W, 10 k, 10	0603L 0603L 11-0603 11-0603 11-0603 0603L	1 1 1 1 1 3 3 1 1 14







