



Bill of Materials for the STR-10-16V-BLDC-MDK-GEVB Evaluation Board

Designator(Main Board)	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
C1 C2 C9 C10	4	CAP CER 22UF 25V X7R 1210	22uF			Murata	GRM32ER71E226ME15	Yes	Yes
C3 C22 C90	0	DNI	DNI					Yes	Yes
C4 C14 C17	3	CAP CER 10NF 50V C0G 0603	10nF			Murata	GRM1885C1H103JA01	Yes	Yes
C5 C12 C20 C82 C84 C89 C97 C98 C99	9	CAP CER 10UF 35V X5R 0603	10uF			Murata	GRM188R6YA106MA73	Yes	Yes
C6 C13	2	CAP CER 1UF 16V X5R 0402	1uF			Murata	GRM155R61C105KA12	Yes	Yes
C7 C11 C15 C43 C48 C50 C51 C57 C58 C60 C61 C62 C66 C67 C73 C74 C75 C76 C77 C78 C83	21	CAP CER 1UF 25V X7R 0603	1uF			Murata	GCM188R71E105KA64	Yes	Yes
C8 C19	2	CAP CER 4.7UF 6.3V X5R 0402	4.7uF			Murata	GRM155R60J475ME47D	Yes	Yes
C16 C24 C25	3	CAP CER 2.2UF 50V X5R 0603	2.2uF			Murata	GRT188R61H225KE13	Yes	Yes
C18 C26 C106	3	CAP CER 0.1UF 100V X7R 0603	0.1uF			Murata	GRM188R72A104KA35D	Yes	Yes
C21	0	DNI	DNI					Yes	Yes
C23 C29 C32 C47 C53 C86	6	CAP CER 1UF 50V X5R 0603	1uF			Murata	GRT188R61H105KE13D	Yes	Yes
C27 C30	2	CAP CER 2200PF 50V X7R 0402	2.2nF			Murata	GCM155R71H222KA37D	Yes	Yes
C28	1	CAP CER 150PF 50V C0G/NP0 0402	150pF			Murata	GCM1555C1H151JA16	Yes	Yes
C31	1	CAP CER 0.22UF 10V X7R 0402	0.22uF			Murata	GRM155R71A224KE01D	Yes	Yes
C33 C34 C35 C36	4	CAP ALUM 2700UF 20% 35V RADIAL	2700uF			Würth	860040580019	Yes	Yes
C37 C38 C39 C40 C41 C42	6	CAP CER 22UF 50V X7R 2220 Metal Terminal	22uF			Murata	KRM55WR71H226MH01	Yes	Yes
C44 C45 C46	0	DNI	DNI					Yes	Yes
C49 C52 C54 C59 C65 C68	6	CAP CER 10000PF 50V X7R 0402	10nF			Murata	GRM155R71H103KA88	Yes	Yes
C55	1	CAP CER 1000PF 50V C0G/NP0 0603	1nF			Murata	GRM1885C1H102JA01J	Yes	Yes
C56 C79 C80	3	CAP CER 2.2NF 50V C0G 0603	2.2nF			Murata	GRM1885C1H222JA01	Yes	Yes
C63 C70 C71	3	CAP CER 4.7pF 50V C0G/NP0 0402	4.7pF			Murata	GJM1555C1H4R7CB01D	Yes	Yes
C64	1	CAP CER 22PF 50V C0G/NP0 0402	22pF			Murata	GCM1555C1H220JA16	Yes	Yes
C69	1	CAP CER 100PF 50V NP0 0603	100pF			TDK	C1608C0G1H101J080AA	Yes	Yes
C72	0	DNI	DNI			DNI	DNI	Yes	Yes
C81 C85	0	DNI	DNI			DNI	DNI	Yes	Yes

C87	1	CAP CER 330PF 100V C0G 0603	330pF		Murata	GCM1885C2A331JA16	Yes	Yes
C88	1	CAP CER 0.1UF 50V X7R 0402	0.1uF		Murata	GRM155R71H104ME14	Yes	Yes
C91 C92 C93	3	CAP CER 1uF 100V X7S 0805	1uF		Murata	GRM21BC72A105KE01	Yes	Yes
C94 C95 C96 C102 C103 C104	0	DNI	DNI				Yes	Yes
C100 C101 C105	3	CAP CER 470pF 50V X7R 0402	470pF		Murata	GCM155R71H471KA37D	Yes	Yes
C107	1	CAP CER 10UF 25V X5R 0603	10uF		Murata	GRT188R61E106ME13	Yes	Yes
D1	1	Green LED	150060GS75000		Würth Elektronik	150060GS75000	Yes	Yes
D2	1	Schottky Barrier Diode, 1A	S115FA		ON Semiconductor	S115FA	Yes	Yes
D3	1	Red LED	150060RS75000		Würth Elektronik	150060RS75000	Yes	Yes
D4 D5 D6	3	30 V Schottky Diode	NSR05F30NX		ON Semiconductor	NSR05F30NXT5G	Yes	Yes
D7	1	SOD-323 Schottky Diode	BAT54		ON Semiconductor	BAT54HT1G	Yes	Yes
D8	1	Surface Mount Schottky Power Rectifier	MBR130		ON Semiconductor	MBR130T1G	Yes	Yes
J1 J2 J3 J4 J5 J6 J7 J8 J12 J13 J14 J15 J19 J20 J21 J22 J23 J27 J30 J31 J32 J43 J44 J45	24	Standard 1x2pin 100mil Pitch Header	613 002 111 21		Würth Elektronik	613 002 111 21	Yes	Yes
J9	1	Standard 1x3pin 100mil Pitch Header (I2C Specific)	613 003 111 21		Würth Elektronik	613 003 111 21	Yes	Yes
J10 J11 J37 J38	4	PLASTIC HEXAGON NUT M3	709940300		Würth	709940300	Yes	Yes
J16 J26	2	PAN HEAD SCREW_M3 X 5MM CROSS SL, Offset 3D Model 13mm	97790503211		Würth	97790503211	Yes	Yes
J17 J25	2	PLASTIC SPACER STUD METRIC THREAD M3 13MM F-F	970130365		Würth	970130365	Yes	Yes
J18 J24	2	Board-to-board mezzanine connector, 120pos, 0.8mm pitch, 11.7mm height w/pegs	10139781-123402LF		Amphenol	10139781-123402LF	Yes	Yes
J28 J29 J33 J34 J35	5	Würth WP-THRSH REDCUBE 9-pin shank terminal 85A M4 thread	74651194		Würth	74651194	Yes	Yes
J36	1	5pin Screw Terminal 100mil pitch 16-30AWG 150V 10A	282834-5		TE Connectivity	282834-5	Yes	Yes
J39 J40 J46 J47	4	PLASTIC SPACER STUD METRIC THREAD M3 15MM F-M	971150365		Würth	971150365	Yes	Yes
J41 J42	2	PAN HEAD SCREW_M3 X 5MM CROSS SL	97790503211		Würth	97790503211	Yes	Yes
JP1	1	Surface Mount High Current Jumper Chip Resistor standard 0603 footprint	22.4A		Stackpole Electronics	HCJ0603ZTOR00	Yes	Yes
L1	1	Würth LHMI Shielded Power Inductor 22uH 140mOhm 2.1A Irated 6.5A Isat	22uH		Würth Elektronik	74437349220	Yes	Yes
L2	1	FIXED IND 10uH 500mA 400mOhm	10uH		Murata	LQW32FT100M0HL	Yes	Yes
NT1	0	DNI	DNI				Yes	Yes
Q1 Q2	2	Single N-Channel Shielded Gate PowerTrench MOSFET, 100 V, 7.5 A, 103mOhm	FDMC86116LZ		ON Semiconductor	FDMC86116LZ	Yes	Yes
Q3 Q4 Q5 Q6 Q7 Q8	6	Single N-Channel Logic Level Power MOSFET, 30 V, 230 A, 1.15mOhm	NTMFS4C302N		ON Semiconductor	NTMFS4C302NT1G	Yes	Yes
Q9 Q10 Q11 Q12	4	Small Signal MOSFET 60V 115mA 7.5 Ohm Single N-Channel SOT-23	2N7002L		ON Semiconductor	2N7002L	Yes	Yes
R1 R2 R95 R101 R103 R105	6	RES SMD 4.75K OHM 1% 1/10W 0603	4.75K		Vishay Dale	A	Yes	Yes
R3 R4 R5 R8 R9 R11 R12 R14 R17 R18 R19 R20 R34 R44 R45 R46 R48 R50 R53 R64 R65 R66 R67 R68 R76 R77 R92 R96 R117 R119 R120 R121 R125 R126 R127 R128 R132 R133	38	RES SMD 10K OHM 1% 1/10W 0603	10K		Vishay Dale	CRCW060310K0FKEA	Yes	Yes
R6 R72	2	RES SMD 35.7K OHM 1% 1/10W 0603	35.7K		Vishay Dale	A	Yes	Yes
R7 R10 R13 R15	4	RES SMD 64.9K OHM 1% 1/10W 0603	64.9K		Vishay Dale	CRCW060364K9FKEA	Yes	Yes
R16	0	DNI	DNI				Yes	Yes

R21 R29	2	RES SMD 10K OHM 1% 1/16W 0402	10K		Vishay Dale	CRCW040210K0FKE	Yes	Yes
R22	1	RES SMD 10K OHM 1% 1/2W 0805	10K		Panasonic	ERJ-P06F1002V	Yes	Yes
R23	1	RES SMD 8.06K OHM 1% 1/16W 0402	8.06K		Vishay Dale	CRCW04028K06FKE	Yes	Yes
R108 R115 R116 R118 R122							Yes	Yes
R123 R124	13	RES SMD 0 OHM JUMPER 1/10W 0603	0		Vishay Dale	CRCW06030000Z0EA		
R25	1	RES SMD 68.1K OHM 1% 1/10W 0603	68.1K		Vishay Dale	CRCW060368K1FKE	Yes	Yes
R27	1	RES SMD 3.57K OHM 1% 1/16W 0402	3.57K		Vishay Dale	CRCW04023K57FKE	Yes	Yes
R28	1	RES SMD 5.11K OHM 1% 1/16W 0402	5.11K		Vishay Dale	CRCW04025K11FKE	Yes	Yes
R30	1	RES SMD 24.9K OHM 1% 1/16W 0402	24.9K		Vishay Dale	CRCW04024K9FKE	Yes	Yes
R31	1	RES SMD 100 OHM 1% 1/16W 0402	100		Vishay Dale	CRCW0402100RFKE	Yes	Yes
R32	1	RES SMD 9.31K OHM 1% 1/16W 0402	9.31K		Vishay Dale	CRCW04029K31FKE	Yes	Yes
R33	1	RES SMD 3.09K OHM 1% 1/16W 0402	3.09K		Vishay Dale	CRCW04023K09FKE	Yes	Yes
R35 R36 R37	0	DNI	DNI				Yes	Yes
R38 R39 R40	3	4 Terminal Sense Resistor 0.001 Ohm 1% 3W	0.001		Vishay Dale	WSL36371L000FEA	Yes	Yes
R41	0	DNI	DNI		DNI	DNI	Yes	Yes
R42 R43 R69	3	RES SMD 100K OHM 1% 1/10W 0603	100K		Vishay Dale	CRCW0603100KFKE	Yes	Yes
R47	0	DNI	DNI		DNI	DNI	Yes	Yes
R49 R55 R78 R79 R83 R84	6	RES SMD 40.2K OHM 0.1% 1/10W 0603	40.2K		Panasonic	ERA-3AEB4022V	Yes	Yes
R51	1	RES SMD 191K OHM 1% 1/10W 0603	191K		Vishay Dale	CRCW0603191KFKE	Yes	Yes
R52	1	RES SMD 21.5K OHM 1% 1/10W 0603	21.5K		Vishay Dale	CRCW060321K5FKE	Yes	Yes
R100	8	RES SMD 10K OHM 0.1% 1/10W 0603	10K		Panasonic	ERA-3AEB103V	Yes	Yes
R56	1	RES SMD 21K OHM 1% 1/10W 0603	21K		Vishay Dale	CRCW060321K0FKE	Yes	Yes
R57 R58 R85 R86 R89 R90	6	RES SMD 33.2 OHM 1% 1/10W 0603	33.2		Vishay Dale	CRCW060333R2FKE	Yes	Yes
R59 R70 R71 R98	4	RES SMD 49.9K OHM 1% 1/10W 0603	49.9K		Vishay Dale	CRCW060349K9FKE	Yes	Yes
R60	1	RES SMD 11.8K OHM 1% 1/10W 0603	11.8K		Vishay Dale	CRCW060311K8FKE	Yes	Yes
R62	1	RES SMD 13K OHM 1% 1/10W 0603	13K		Vishay Dale	CRCW060313K0FKE	Yes	Yes
R63	1	RES SMD 2K OHM 1% 1/10W 0603	2K		Vishay Dale	CRCW06032K00FKE	Yes	Yes
R74	1	RES SMD 11.5K OHM 1% 1/10W 0603	11.5K		Vishay Dale	CRCW060311K5FKE	Yes	Yes
R75 R109 R110 R111 R129 R130							Yes	Yes
R131	0	DNI	DNI					
R91 R97	2	RES SMD 100 OHM 1% 1/10W 0603	100		Vishay Dale	CRCW0603100RFKE	Yes	Yes
R93	1	RES SMD 53.6K OHM 1% 1/10W 0603	53.6K		Vishay Dale	CRCW060353K6FKE	Yes	Yes
R94	1	RES SMD 10 OHM 1% 1/16W 0402	10		Vishay Dale	CRCW040210R0FKE	Yes	Yes
R102	0	DNI	DNI		DNI	DNI	Yes	Yes
R104	0	DNI	DNI		DNI	DNI	Yes	Yes
R112 R113 R114	3	RES SMD 0 OHM JUMPER 1/8W 0805	0		Vishay Dale	CRCW08050000Z0EA	Yes	Yes
R134	1	RES SMD 47.5K OHM 1% 1/10W 0603	47.5K		Vishay Dale	CRCW060347K5FKE	Yes	Yes
SW1 SW2	2	MINI SLIDE SWITCH	450301014042		Würth Elektronik	450301014042	Yes	Yes
TP1 TP2 TP3 TP4 TP5 TP6 TP7							Yes	Yes
TP8 TP9 TP10 TP11 TP12 TP13								
TP14 TP15 TP16 TP17 TP18								
TP19 TP20 TP21 TP23 TP24								
TP25 TP26 TP27 TP28 TP29								
TP30 TP31 TP33 TP34 TP35								
TP36 TP37 TP38 TP39 TP41								
TP42 TP43 TP44 TP45 TP46								
TP47 TP49 TP50 TP51 TP52								
TP53 TP54 TP55 TP56 TP57								
TP58 TP59 TP60 TP61 TP62								
TP63 TP64 TP65 TP66 TP67	0	DNI	DNI					
TP22 TP48 TP71 TP72 TP73	0	DNI	DNI				Yes	Yes
TP32 TP40	2	PC TEST POINT COMPACT	5016		Keystone	5016	Yes	Yes
TP75 TP76 TP77	3	Passive Probe Tip Tektronix P5050 (Tan) Tip	DNI				Yes	Yes
		28V / 5A Rated Load Switch with OVP, Low On-resistance, integrated TVS	FPF3380		ON Semiconductor	FPF3380UCX	Yes	Yes
U2	1	Adjustable Output Voltage Regulator, LDO, Ultra Low Noise, Ultra Low Iq, 500 mA	NCP705		ON Semiconductor	NCP705MTADJTCG	Yes	Yes
U4	1	3.3V Voltage Regulator, LDO, Ultra Low Noise, Ultra Low Iq, 500 mA	NCP705		ON Semiconductor	NCP705MT33TCG	Yes	Yes
U5	1	Negative LDO Regulator, 100 mA, Adjustable output, Pb free	MIC5270		Microchip	MIC5270YM5-TR	Yes	Yes
U6	1	IC REG SWTCHD CAP INV 50MA 6TSOP	NCP1729		ON Semiconductor	NCP1729SN35T1G	Yes	Yes
U7	1	3MHz, 125uA Low Power Op Amp Rail-to-Rail Input/Output Single	NCS20061SQ3		ON Semiconductor	NCS20061SQ3T2G	Yes	Yes
U8	1	100 V Synchronous Buck Controller	NCP1034		ON Semiconductor	NCP1034DR2G	Yes	Yes
U9	1	Digital Temperature Sensor with 2-wire Interface	NCT375		ON Semiconductor	NCT375MNR2G	Yes	Yes
U10	1	2-Input NOR Gate with Open Drain Output 2.0-5.5V	MC74VHC1G03		ON Semiconductor	MC74VHC1G03DFT1G	Yes	Yes
U11	1	LDO Regulator, 100 mA, 18V max input, 1 uA IQ 5V output	NCP711ASN500		ON Semiconductor	NCP711ASN500T1G	Yes	Yes
U12	1	Comparator, High Speed, 50 ns, 1.8V-5.5V, Rail-to-Rail Input/Output Open Drain	NCS2252SQ2		ON Semiconductor	NCS2252SQ2T2G	Yes	Yes
U13	1	Precision Operational Amplifier, Low Offset, 10MHz, Rail-to-Rail Input/Output	NCS20166		ON Semiconductor	NCS20166SN2T1G	Yes	Yes
U14 U18 U19	3							

U15 U20 U21	3	Precision Operational Amplifier, 25uV Offset, Zero-Drift, 36 V Supply, 2 MHz Single	NCS21911			ON Semiconductor	NCS21911SN2T1G	Yes	Yes
U16 U17 U1 U23 U3	5	3MHz, 125uA Low Power Op Amp Rail-to-Rail Input/Output Dual	NCS20062			ON Semiconductor	NCS20062DMR2G	Yes	Yes
U22	1	Non-sync Boost Converter, 1.6MHz, 1A, 2.7-5.5V VIN, 20V max output	FAN5331			ON Semiconductor	FAN5331SX	Yes	Yes
U24	0	DNI	DNI			DNI	DNI	Yes	Yes
U25 U26 U27	3	NCP81075 High Voltage High and Low Side Driver	NCP81075			ON Semiconductor	NCP81075DR2G	Yes	Yes