



Bill of Materials for the STR-ACF-12V100WPSUGUEVB Evaluation Board

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
CN101	1	Connector	300Vac, 14A		W=23.1, T=9.8, H=13.8	Würth Elektronik	691 216 910 003	Yes	Yes
CN51	1	Connector	250Vac, 16A		W=11.2, T=9.0, H=12.6	Würth Elektronik	691 101 710 002	Yes	Yes
F101	1	Fuse	250Vac, 3.15A		L8.35 x D4 x H7.8	Bel Fuse Inc	RSTA 3.15 AMMO	Yes	Yes
TH101	1	Thermistor	10 ohm		D=13, P=7.5	TDK	B57211P0100M301	Yes	Yes
ZNR101	1	Varistor	275Vac		D=12.5, T=5.1, P=7.5	Würth Elektronik	820 512 711	Yes	Yes
L101	1	CM, choke	100uH, 2A		D=23, T=13	KEMET(Tokin)	SC-02-D100	Yes	Yes
L102	1	Choke, coil	100uH		D=12, H=15, P=8.5	KEMET(Tokin)	SBC6-101-172	Yes	Yes
L103	1	Choke, coil	100uH		RM8 D=21.59, W=21.59, H=17.27	Würth Elektronik	750 344 172	Yes	Yes
L104	1	FB	300ohm@100MHz, 3A		3216/1206	Würth Elektronik	742 792 121	Yes	Yes
L105	1	CM, choke	47mH, 1.6A		W=25.5, L=25.5, H=18.0	KEMET(Tokin)	SSRH24NH-16470	Yes	Yes
FB101, FB102	2	FB			OD=3.8, ID=1.5, T=4.3	KEMET(Tokin)	B-20F-38	Yes	Yes
C101	1	MP, Film, Cap	275Vac, 0.47uF		L=26.0, T=8.5, H=15.0, F=22.5	Panasonic	ECQUAAF474K	Yes	Yes
C102, C103	2	ML, ceramic, cap	300V, 2200pF		D=8.0, T=4.0	Murata	DE2E3SA222MA3BX02F	Yes	Yes
C103, C105	2	Metallized, P, Cap	450Vdc, 1.0uF		L=17.5, T=7, H=12.5, F=15.0	Panasonic	ECWFE2W105K	Yes	Yes
C106, C110	2	E, AL, Cap	420V, 68uF		D=14.5, H=30, P=7.5	Nippon Chemi-con	EKXL421ELL680MU30S	Yes	Yes
C107	1	Ceramic, cap	500V, 100nF		4532/1812	Würth Elektronik	885 342 211 005	Yes	Yes
C108	1	Ceramic, cap				NI	NI	Yes	Yes
C109	1	Ceramic, cap	500V, 470pF		D=8.0, T=6.0, P=10.0	Murata	DE1B3RA471KA4BQ01F	Yes	Yes
C111	1	MP, Film, Cap	275Vac, 0.22uF		L=17.5, T=7, H=14.0, F=15.0	Panasonic	ECQUAAF224K	Yes	Yes
D101	1	Bridge, Diode	600V, 4A		SIP-4	ON Semiconductor	GBU4J	No	Yes
D102, D103	2	Fast, Recovery, Diode	600V, 0.8A		SOD-123FA	ON Semiconductor	R51JFA	No	Yes
D104	1	Diode	600V, 3A		SMC/DO-214AB	ON Semiconductor	S3J	No	Yes
D1055	1	Ultra, Fast, Diode	520V, 5A		DPAK	ON Semiconductor	MURD550PFT4G	No	Yes
R101	1	Chip, R	1k, 1%		3216/1206	-	Standard	Yes	Yes
R102, R103	2	Chip, R	2M, 1%		3216/1206	-	Standard	Yes	Yes
R104	1	Chip, R	680k, 1%		3216/1206	-	Standard	Yes	Yes
R201, R607	2	Chip, R	0.002, 1%		6432/2512	-	Standard	Yes	Yes
R202, R203	2	Chip, R	499k, 1%		6432/2512	-	Standard	Yes	Yes
R206	1	Chip, R	2.49, 1%		1608/0603	-	Standard	Yes	Yes
R57, R204, R205, R207, R208	5	Chip, R	1k, 1%		1608/0603	-	Standard	Yes	Yes
R209, R210	2	Chip, R	4.7k, 1%		1608/0603	-	Standard	Yes	Yes
R211, R212, R401, R402, R408	5	Chip, R	100, 1%		1608/0603	-	Standard	Yes	Yes

C201, C202, C203, C204, C305, C306	6	ML, ceramic, cap	25V, 33nF	1005/0402	Murata	GRM155B31E333KA87	Yes	Yes
C6, C26, C29, C57, C60, C205, C206, C208, C209, C304, C309, C310, C312, C401, C601, C602	16	ML, ceramic, cap	25V, 1uF	1005/0402	Murata	GRM155C81E105KE11	Yes	Yes
C207	1	ML, ceramic, cap	16V, 10uF	1608/0603	Murata	GRM188R61C106KAAL	Yes	Yes
U201	1	LSI		5X5 QFN	Microchip	MCP39F511A-E/MQ	Yes	Yes
FB201, FB202	2	FB	150ohm@100MHz, 0.3A	2012/0805	Würth Elektronik	742 792 03	Yes	Yes
PC201	1	Optocoupler		SOIC8	ON Semiconductor	FOD8012A	No	Yes
U301	1	PWM switcher		SOIC7	ON Semiconductor	NCP10671BD060R2G	No	Yes
U302	1	LDO	Vout=3.3V	TSOP-5	ON Semiconductor	NCP716BSN330T1G	No	Yes
SW301	1	Switch		W=12.7, L=13.0, H=33.3	NKK Switches	M2022S54W03	Yes	Yes
F301	1	Fuse	250Vac, 500mA	3x3x9.8	Bel Fuse Inc	0678H0500-02	Yes	Yes
L301	1	choke, coil	1000uH, 0.5A	D=7.8, H=9.5, P=5.0	Würth Elektronik	768 772 102	Yes	Yes
L302	1	choke, coil	1200uH, 0.4A	D=7.8, H=9.5, P=5.0	Würth Elektronik	768 772 122	Yes	Yes
R301	1	Resistor	20, 5%, 3W	L=13, D=4.8	-	Standard	Yes	Yes
R303	1	Chip, R	27k, 1%	1608/0603	-	Standard	Yes	Yes
R30, R34, R304, R605	4	Chip, R	15k, 1%	1608/0603	-	Standard	Yes	Yes
R305	1	Chip, R	220k, 1%	1608/0603	-	Standard	Yes	Yes
R306	1	Chip, R	33, 1%	1608/0603	-	Standard	Yes	Yes
ZNR301	1	ZNR	275Vac	D=9.0, T=6.1, P=5.0	Würth Elektronik	820 572 711	Yes	Yes
FB301, FB302	2	FB	28ohm@10MHz, 3A	P=10.0	Würth Elektronik	742 760 3	Yes	Yes
D301	1	Standard, recovery, diode	800V, 1A	SMA	ON Semiconductor	MRA4006T3G	No	Yes
D302	1	Switching, Diode	100V, 0.2A	SOD-123	ON Semiconductor	MMSD4148T1G	No	Yes
D303, D304	2	Ultra, Fast, Diode	600V, 1A	SMA	ON Semiconductor	MURA160T3G	No	Yes
D305	1	Zener, Diode	12V, 500mW	SOD-123	ON Semiconductor	MMS21T1G	No	Yes
C301, C302	2	E, AL, Cap	450V, 2.2uF	D=10, L=12.5	Nippon Chemi-con	EKM451ELL2R2MJC55	Yes	Yes
C7, C303, C311, C313	4	E, AL, Cap	50V, 10uF	D=5, L=1.1, P=2	Nippon Chemi-con	EKYA500ELL100ME11D	Yes	Yes
C307	1	ML, Ceramic, cap	25V, 150nF	2012/0805	Murata	GRM31C5C1E154JE02	Yes	Yes
C308	1	E, AL, Cap	35V, 220uF	D=8, L=15	Nippon Chemi-con	EKZE350ELL221MH15D	Yes	Yes
R403	1	Chip, R	665, 1%	1005/0402	-	Standard	Yes	Yes
R404	1	Chip, R	8.87k, 1%	1005/0402	-	Standard	Yes	Yes
R405	1	Chip, R	5.11k, 1%	1005/0402	-	Standard	Yes	Yes
R406	1	Chip, R	9.76k, 1%	1005/0402	-	Standard	Yes	Yes
R407	1	Chip, R	2.32k, 1%	1005/0402	-	Standard	Yes	Yes
R409, R412	2	Chip, R	100, 1%	1005/0402	-	Standard	Yes	Yes
R410, R411	2	Chip, R	10k, 1%	1005/0402	-	Standard	Yes	Yes
C402, C403	2	ML, Ceramic, cap	25V, 12pF	0603/0201	Murata	GRM0335C1E120JA01	Yes	Yes
C404, C405	2	ML, Ceramic, cap	50V, 7.5pF	1005/0402	Murata	GJM1555C1H7R5CB01	Yes	Yes
C406, C407, C408, C409, C410, C411, C412, C414, C419	9	ML, Ceramic, cap	6.3V, 4.7uF	1005/0402	Murata	GRM155R60J475ME47	Yes	Yes
C413, C415, C416, C417	4	ML, Ceramic, cap	16V, 1uF	1005/0402	Murata	GRM155R61C105KA12	Yes	Yes
C418, C421	2	ML, Ceramic, cap	50V, 100nF	1005/0402	Murata	GCM155R71H104ME02	Yes	Yes
C420	1	ML, Ceramic, cap	25V, 10uF	1608/0603	Murata	GRM188R61E106MA73	Yes	Yes
C422	1	ML, Ceramic, cap		1005/0402	NI	NI	Yes	Yes
C423	1	ML, Ceramic, cap		1005/0402	NI	NI	Yes	Yes
CN401	1	Connector		10P SMD	Semtec	FTSH-105-01-F-DV-K	Yes	Yes
CN402	1	Connector MINI USB2.0		W=7.7, L=9.25, H=3.5	Würth Elektronik	651 005 161 21	Yes	Yes
D401, D402	2	Schottky, Diode	20V, 2A	DSN2	ON Semiconductor	NSR20F20NXT5G	No	Yes
D403	1	Diode		SOT723	ON Semiconductor	SESD7L5.0DT5G	No	Yes
D404	1	LED		1608/0603	Würth Elektronik	150060YS75000	Yes	Yes
D405	1	LED		1608/0603	Würth Elektronik	150060BS75000	Yes	Yes
D406	1	LED		1608/0603	Würth Elektronik	150060RS75000	Yes	Yes
D407	1	LED		1608/0603	Würth Elektronik	150060GS75000	Yes	Yes
Q401, Q402, Q403	3	FET	60V, 340mA, 1.6ohm	SOT323	ON Semiconductor	2N7002WT1G	No	Yes
U401	1	MPU		QFP100 14x14	Silicon Labs	EFM32GG380F1024G-E-QFP100R	Yes	Yes
U402	1	IC		QFN16 4x4	FTDI	FT230XQ-R	Yes	Yes
U403	1	LDO	Vout=3.3V	WDFN6	ON Semiconductor	NCP705MT33TCG	No	Yes
U404	1	IC		TSOP-5	NI	NI	Yes	Yes
SW401	1	SW		SMD	Würth Elektronik	434 153 017 835	Yes	Yes
FB401	1	FB	220ohm@100MHz, 0.9A	2012/0805	Murata	BLM21AG2215N1	Yes	Yes
X401	1	XTAL	32.768kHz	W=1.4, L=6.7, H=1.44	Micro Crystal	T1R-32.768kHz-12.5pF-20PPM-TA	Yes	Yes
X402	1	XTAL	48MHz	5032	NDK	NX5032GA-48.000000MHZ-LN-CD-	Yes	Yes
R501	1	Chip, R	100k, 1%	3216/1206	-	Standard	Yes	Yes
R502, R503	2	Chip, R	160k, 1%	3216/1206	-	Standard	Yes	Yes
R8, R14, R56, R504, R506, R601, R603, R604	8	Chip, R	10k, 1%	1608/0603	-	Standard	Yes	Yes
R505	1	Chip, R	1M, 1%	1608/0603	-	Standard	Yes	Yes
R507	1	Chip, R	130k, 1%	1608/0603	-	Standard	Yes	Yes
R508	1	Chip, R	56k, 1%	1608/0603	-	Standard	Yes	Yes
R509	1	Chip, R	150k, 1%	1608/0603	-	Standard	Yes	Yes
C56, C501	2	ML, Ceramic, cap	50V, 100nF	1005/0402	Murata	GRM155R71H104KE14	Yes	Yes
Q501	1	FET	500V, 0.37A, 6.2ohm	SOIC8	ON Semiconductor	FQ54903TF	No	Yes
Q502	1	Transistor	40V, 0.2A	SOT-23	ON Semiconductor	MMBT3906LT1G	No	Yes

D1, D2, D3, D22, D55, D501, D502	7	Diode	250V, 0.2A		SOD-323	ON Semiconductor	BAS21HT1G	No	Yes
U22, U501	2	Shunt regulator			SOT-23-3	ON Semiconductor	NCP431BISNT1G	No	Yes
R1	1	Chip, R	47, 1%		1608/0603	-	Standard	Yes	Yes
R2	1	Chip, R	91k, 1%		1608/0603	-	Standard	Yes	Yes
R3	1	Chip, R	20k, 1%		1608/0603	-	Standard	Yes	Yes
R4	1	Chip, R	22k, 1%		1608/0603	-	Standard	Yes	Yes
R5	1	Chip, R	6.8k, 1%		1608/0603	-	Standard	Yes	Yes
R6	1	Chip, R	30k, 1%		1608/0603	-	Standard	Yes	Yes
R7	1	Chip, R	NI		1608/0603	NI	NI	Yes	Yes
R9, R52	2	Chip, R	22, 1%		3216/1206	-	Standard	Yes	Yes
R10	1	Chip, R	4.7, 1%		3216/1206	-	Standard	Yes	Yes
R11, R54, R61, R65	4	Chip, R	100k, 1%		1608/0603	-	Standard	Yes	Yes
R12, R13	2	Chip, R	0.56, 1%		3216/1206	-	Standard	Yes	Yes
C1	1	ML, Ceramic, cap	50V, 2200pF		1005/0402	Murata	GRM155R71H222KA01	Yes	Yes
C2	1	ML, Ceramic, cap	50V, 10pF		1005/0402	Murata	GRM155C1H100JA01	Yes	Yes
C3	1	ML, Ceramic, cap	25V, 2.2uF		1005/0402	Murata	GRM155R61E225KE11	Yes	Yes
C4	1	ML, Ceramic, cap	35V, 220nF		1005/0402	Murata	GRM155R6YA224KE01	Yes	Yes
C5	1	ML, Ceramic, cap	50V, 100pF		1005/0402	Murata	GRM1555C1H101JA01	Yes	Yes
C8	1	ML, Ceramic, cap			3216/1206	NI	NI	Yes	Yes
D4	1	Zener, diode	15V, 300mW		SOD-323	ON Semiconductor	MM3Z15VT1G	No	Yes
Q1, Q53	2	TR	40V, 0.2A		SOT-23	ON Semiconductor	MMBT3904LT1G	No	Yes
Q2	1	FET	500V, 0.38A, 6ohm		TO-92	ON Semiconductor	FQN1N50C	No	Yes
Q3	1	FET	600V, 12A, 299mohm		PQFN4 8X8, 2P	ON Semiconductor	FCMT299N60	No	Yes
Q4	1	TR	80V, 500mA		SOT-23	ON Semiconductor	MMBTAS6LT1G	No	Yes
U1	1	PFIC controller			TSP0P6	ON Semiconductor	NCP1622AGCSNT1G	No	Yes
PC101, PC102	2	Optocoupler			SSOP4/L SOP04	ON Semiconductor	FODM1009	No	Yes
C51, C52, C53, C54, C55	5	ML, Ceramic, cap	450V, 220nF		3225/1210	TDK	C3225X7T2W224K200AA	Yes	Yes
C58	1	E, AL, cap	50V, 100uF		D=8, L=11.5, F=3.5	Nippon Chemi-con	EKYB500ELL101MHB5D	Yes	Yes
C59	1	E, AL, cap	63V, 33uF		D=6.3, L=11, F=2.5	Nippon Chemi-con	EKYB630ELL330MF11D	Yes	Yes
C61, C62, C66	3	ML, Ceramic, cap	50V, 1000pF		1005/0402	Murata	GRM155R71H102KA01	Yes	Yes
C63	1	ML, Ceramic, cap	50V, 1500pF		1005/0402	Murata	GRM155R71H152KA01	Yes	Yes
C64	1	ML, Ceramic, cap	50V, 100pF		1005/0402	Murata	GRM1555C1H101JA01	Yes	Yes
R51	1	Chip, R	1M, 1%		3216/1206	-	Standard	Yes	Yes
R55	1	Chip, R	1, 1%		1608/0603	-	Standard	Yes	Yes
R58	1	Chip, R	2.2, 1%		3216/1206	-	Standard	Yes	Yes
R59	1	Chip, R	0		3216/1206	-	Standard	Yes	Yes
R62, R63	2	Chip, R	0.39, 1%		3216/1206	-	Standard	Yes	Yes
R26, R39, R64	3	Chip, R	0		1608/0603	-	Standard	Yes	Yes
R66	1	Chip, R	75k, 1%		1608/0603	-	Standard	Yes	Yes
R67	1	Chip, R	51k, 1%		1608/0603	-	Standard	Yes	Yes
R25, R68	2	Chip, R	510, 1%		1608/0603	-	Standard	Yes	Yes
R69	1	Chip, R	36k, 1%		1608/0603	-	Standard	Yes	Yes
D51, D53	2	Fast, Recovery, Diode	600V, 1A		SOD-123FA	ON Semiconductor	US1JFA	No	Yes
D52, D56, D57	3	Schottky, Diode	30V, 200mA		SOD-323	ON Semiconductor	BAT54HT1G	No	Yes
D54	1	Zener, Diode	12V, 300mW		SOD-323	ON Semiconductor	MM3Z12VT1G	No	Yes
D58	1	Zener, Diode	27V, 500mW		SOD-123	ON Semiconductor	MMSZ27T1G	No	Yes
Q51, Q52	2	FET	650V, 19A, 165mohm		TO-220 FULLPACK 3L	ON Semiconductor	FCPF165N6533L1	No	Yes
HS1, HS2	2	Heat, Sink	For Q51, Q52		W=15, T=6, H=22	HEAT-SINK&OS CO.,LTD	HSS-B20-0635H-01	Yes	Yes
U51	1	High Side Driver			SOIC-8	ON Semiconductor	NCP51530ADR2G	No	Yes
U52	1	ACF Controller			TSSOP-16	ON Semiconductor	NCP1568502DBR2G	No	Yes
L51	1	FB	2.2uH		2520/1008	TDK	NLV25T-2R2J-EFD	Yes	Yes
TH51	1	Thermistor			1608/0603	Murata	NI	Yes	Yes
T1	1	Transformer	150uH		RM10 D=31.5, W=31.5, H	Würth Elektronik	750 344 192	Yes	Yes
C21	1	ML, ceramic, cap	200V, 4700pF		2012/0805	Murata	GRM2187U2D472JW32	Yes	Yes
C22, C23, C24, C25	4	E, AL, Cap	25V, 1200uF		D=10, H=25, P=5	Nippon Chemi-con	EKZN250ELL122M255	Yes	Yes
C27	1	E, AL, Cap			D=5, H=11, P=2	NI	NI	Yes	Yes
C28	1	ML, ceramic, cap	50V, 470pF		1005/0402	Murata	GRM1555C1H471JA01	Yes	Yes
C30	1	ML, ceramic, cap			1005/0402	NI	NI	Yes	Yes
C31	1	ML, ceramic, cap			1005/0402	NI	NI	Yes	Yes
C32	1	ML, ceramic, cap	50V, 47nF		1005/0402	Murata	GRM155R71H473KE14	Yes	Yes
C33	1	ML, ceramic, cap			1005/0402	NI	NI	Yes	Yes
R21	1	Chip, R	NI		1608/0603	NI	NI	Yes	Yes
R22, R23, R53, R60	4	Chip, R	10, 5%		3216/1206	-	Standard	Yes	Yes
R24	1	Chip, R	NI		3216/1206	NI	NI	Yes	Yes
R27	1	Chip, R	10, 1%		1608/0603	-	Standard	Yes	Yes
R28, R31	2	Chip, R	2k, 1%		1608/0603	-	Standard	Yes	Yes
R29	1	Chip, R	43k, 1%		1608/0603	-	Standard	Yes	Yes
R32	1	Chip, R	120k, 1%		1608/0603	-	Standard	Yes	Yes
R33, R35	2	Chip, R	3k, 1%		1608/0603	-	Standard	Yes	Yes
R36	1	Chip, R	180k, 1%		1608/0603	-	Standard	Yes	Yes
R37	1	Chip, R	47k, 1%		1608/0603	-	Standard	Yes	Yes
R38	1	Chip, R	NI		1608/0603	NI	NI	Yes	Yes
D21	1	Diode			SOD-323	NI	NI	Yes	Yes
D23	1	Diode	5.6V, 300mW		SOD-323	ON Semiconductor	MM3Z5V6T1G	No	Yes

Q21	1	FET	150V, 99A, 6.5mohm	Dual Cool 88	ON Semiconductor	FDMT800150DC	No	Yes
Q22	1	FET	60V, 115mA, 7.5ohm	SOT-23	ON Semiconductor	2N7002LT1G	No	Yes
U21	1	SR Controller		SOIC-8	ON Semiconductor	NCP4306AADZZADRZG	No	Yes
L21	1	FB		2520/1008	NI	NI	Yes	Yes
L22	1	Choke, coil	1.5uH	D=9, L=12, P=5.5	KEMET(Tokin)	SBC4-1R5-712	Yes	Yes
U601	1	Sense, amp		SC70-6	ON Semiconductor	NCS214RSQT2G	No	Yes
U602	1	Comparator		SOIC8	ON Semiconductor	NCV2903DR2G	No	Yes
R602	1	Chip, R	1.5M, 1%	1608/0603	-	Standard	Yes	Yes
R606	1	Chip, R	1.1k, 1%	1608/0603	-	Standard	Yes	Yes
R608	1	Chip, R	30.1k, 1%	1608/0603	-	Standard	Yes	Yes
R609	1	Chip, R	3.01k, 1%	1608/0603	-	Standard	Yes	Yes
	1	Standoff (metal)	M3, L=15mm		Wurth Elektronik	970 150 361	Yes	Yes
	3	Standoff (plastics)	M3, L=15mm		Wurth Elektronik	970 150 365	Yes	Yes
	3	Metal screw for FET Q51, Q52 fixing and HS1, HS2	M3, Length=8mm	M3, L=8mm	-	Metal screw	Yes	Yes
	3	Hex nut for FET Q51, Q52 fixing	M3	M3	-	Hex nut	Yes	Yes
		Metal screw for Standoff	M3, Length=6mm	M3, L=6mm		Metal screw	Yes	Yes
		Plastics screw for Standoff	M3, Length=6mm	M3, L=6mm		Plastics screw	Yes	Yes