

Single stage AC-DC LLC Resonant Converter

Designator	Quantity	Value	Description	PackageReference	PartNumber	Manufacturer	Alternate PartNumber	Alternate Manufacturer
C100, C102	2	180uF	CAP, AL, 180 uF, 250 V, +/- 20%, TH	D18xL20mm	EKXJ251ELL181MM25 S	United Chemi-Con		
C101	1	0.47uF	CAP, Film, 0.47 uF, X2 275 VAC, +/- 10%, TH	15x10mm	890324024005	Würth Elektronik		
C103, C105	2	2.2uF	CAP, CERM, 2.2 uF, 16 V, +/- 20%, X5R, 0603	0603	885012106018	Würth Elektronik		
C104, C106	2	0.1uF	CAP, CERM, 0.1 uF, 25 V, +/- 5%, X7R, 0603	0603	06033C104JAT2A	AVX		
C107, C108	2	1000pF	CAP, CERM, 1000pF, 300V, +/-20%, Y5U, Radial Disc 7.5mm, Is=7.5	Radial Disc 7.5mm, Is=7.5	VY2102M29Y5UG63V7	Vishay-Bccomponents		
C109	1	2200pF	CAP, CERM, 2200 pF, 250 V, +/- 20%, E, Disc 10x8mm	Disc 10x8mm	DE1E3KX222MA5BA01	MuRata		
C110, C119	2	0.022uF	CAP, Film, 0.022 uF, 630 V, +/- 3%, TH	12.5x6.2mm	ECW-F6223HL	Panasonic		
C111, C113	2	10uF	CAP, CERM, 10uF, 16V, +/-10%, X5R, 1210	1210	1210YD106KAT2A	AVX		
C112, C114	2	47uF	CAP, CERM, 47uF, 16V, +/-10%, X5R, 1210	1210	GRM32ER61C476KE15 L	MuRata		
C115, C116	2	1000uF	CAP ALUM 1000UF 16V 20% RADIAL	10x20	EEUFM1C102	Panasonic		
C117	1	0.1uF	CAP, CERM, 0.1uF, 25V, +/-10%, X7R, 0603	0603	06033C104KAT2A	AVX		
C118	1	1uF	CAP, CERM, 1uF, 25V, +/-10%, X5R, 0805	0805	08053D105KAT2A	AVX		
C120, C121	2	150pF	CAP, CERM, 150 pF, 1000 V, +/- 5%, U2J, 1206	1206	GRM31A7U3A151JW31 D	MuRata		
C122, C129	2	2.2uF	CAP, CERM, 2.2 uF, 35 V, +/- 10%, X5R, 0603	0603	GRM188R6YA225KA12 D	MuRata		
C123	1	2.2uF	CAP, CERM, 2.2 uF, 50 V, +/- 10%, X5R, 1206	1206	C3216X5R1H225K160A B	TDK		
C124	1	2.2uF	CAP, CERM, 2.2 uF, 16 V, +/- 10%, X7R, 1206	1206	C1206C225K4RACTU	Kemet		
C126	1	0.1uF	CAP, CERM, 0.1 uF, 25 V, +/- 10%, X7R, 0603	0603	C1608X7R1E104K080A A	TDK		
C127	1	220uF	CAP, AL, 220 uF, 35 V, +/- 10%, TH	D10xL20mm	UKL1V221KPD	Nichicon		
C128	1	680uF	CAP, AL, 680 uF, 35 V, +/- 20%, 0.019 ohm, TH	TH, 2-Leads, 10.5x22mm, Pin Spacing 5mm	UHW1V681MPD6	Nichicon		
C130	1	47pF	CAP, CERM, 47 pF, 50 V, +/- 1%, COG/NP0, 0603	0603	GRM1885C1H470FA01 J	MuRata		
C131, C138	2	2.2pF	CAP, CERM, 2.2 pF, 50 V, +/- 11%, COG/NP0, 0603	0603	06035A2R2CAT2A	AVX		
C132, C133, C134	3	4.7uF	CAP, CERM, 4.7 uF, 16 V, +/- 10%, X5R, 0603	0603	GRM188R61C475KAAJ	MuRata		
C135	1	0.01uF	CAP, CERM, 0.01 uF, 100 V, +/- 5%, X7R, 0603	0603	06031C103JAT2A	AVX		
C136	1	0.047uF	CAP, CERM, 0.047 uF, 50 V, +/- 10%, X7R, 0603	0603	C1608X7R1H473K080A A	TDK		
C137	1	0.012uF	CAP, CERM, 0.012 uF, 25 V, +/- 5%, COG/NP0, 0603	0603	C0603C123J3GACTU	Kemet		
C139	1	220pF	CAP, CERM, 220 pF, 50 V, +/- 10%, X7R, 0603	0603	GRM188R71H221KA01 D	MuRata		
D100, D101, D102, D103	4	600V	Diode, Fast Rectifier, 600 V, 3 A, SMC	SMC	ES3J	Fairchild Semiconductor		
D104, D105	2	1.05V	Diode, Ultrafast, 600V, 1A, SMA	SMA	MURA160T3G	ON Semiconductor		
D106, D108	2	100V	Diode, Switching, 100 V, 0.2 A, SOD-323	SOD-323	MMDL914-TP	Micro Commercial Componen		
D107	1	200V	Diode, Schottky, 200 V, 2 A, SMB	SMB	STPS2200UF	STMicroelectronics		
D109	1	600V	Diode, Ultrafast, 600 V, 1 A, AEC-Q101, SMAF	SMAF	ES1JAF	Fairchild Semiconductor		
D110	1	100V	Diode, Ultrafast, 100 V, 0.15 A, SOD-123	SOD-123	1N4148W-7-F	Diodes Inc.		
D111	1	6.2V	Diode, Zener, 6.2 V, 500 mW, SOD-123	SOD-123	MMSZ5234B-7-F	Diodes Inc.		
D112	1	20V	Diode, Zener, 20 V, 200 mW, SOD-323	SOD-323	MMSZ5250BS-7-F	Diodes Inc.		
D200	1	3.3V	Diode, Zener, 3.3 V, 500 mW, SOD-123	SOD-123	MMSZ4684T1G	ON Semiconductor		
F100	1		Fuse, 6.3 A, 250VAC/VDC, TH	TR5 fuse 8.5mm DIA	37216300001	Littelfuse		
J100	1		Header, 100mil, 2x1, Gold, TH	2x1 Header	TSW-102-07-G-S	Samtec		
J101	1		Polarized Header, 7.92 mm, 2x1, Tin, TH	TH Header	1-1318301-2	TE Connectivity		
J102	1	2x1	Conn Term Block, 2POS, 5.08mm, TH	PhoenixContact_1715 721	1715721	Phoenix Contact		
L100	1	100uH	100uH Unshielded Toroidal Inductor 2A 80 mOhm Max Radial	IND_TORROID_15.8x 7.5mm	7447021	Würth Elektronik		
L101	1	10mH	Coupled inductor, 10000uH, 3A, 0.105 ohm, +/-30%, TH	18.5x33x27.5 mm	744824310	Würth Elektronik eiSos		
Q100, Q102	2	650V	MOSFET N-CH 650V 31A TO252-3	DPAK	IPD60R280CFD7	Infineon Technologies		None
Q101, Q103	2	40V	MOSFET, N-CH, 40V, 22A, SON 5x6mm	SON 5x6mm	CSD18501Q5A	Texas Instruments		None
Q104	1	60 V	Transistor, NPN, 60 V, 3 A, SOT-223	SOT-223	FZT651TA	Zetex		
R100, R101, R102, R103	4	4.75Meg	RES, 4.75 M, 1%, 0.25 W, 1206	1206	CRCW12064M75FKEA	Vishay-Dale		
R104, R107	2	10.0k	RES, 10.0 k, 0.1%, 0.125 W, 0805	0805	RG2012P-103-B-T5	Susumu Co Ltd		
R105, R109	2	10	RES, 10, 5%, 0.125 W, 0805	0805	RC0805JR-0710RL	Yageo America		
R106	1	50.5k	RES, 50.5 k, 0.1%, 0.1 W, 0603	0603	RT0603BRD0750K5L	Yageo America		
R108	1	10.0k	RES, 10.0 k, 1%, 0.1 W, 0603	0603	RCG060310K0FKEA	Vishay Draloric		
R110	1	2.2	RES, 2.2, 5%, 0.1 W, 0603	0603	CRCW06032R20JNEA	Vishay-Dale		
R111	1	20.0	RES, 20.0, 1%, 0.1 W, 0603	0603	CRCW060320R0FKEA	Vishay-Dale		
R112, R119, R123	3	3.0Meg	RES, 3.00 M, 1%, 0.25 W, AEC-Q200 Grade 0, 1206	1206	CRCW12063M00FKEA	Vishay-Dale		
R114	1	10.0k	RES, 10.0 k, 1%, 0.1 W, 0603	0603	ERJ-3EKF1002V	Panasonic		
R115	1	2.43k	RES, 2.43 k, 1%, 0.1 W, 0603	0603	CRCW06032K43FKEA	Vishay-Dale		
R116, R117, R118	3	1.65k	RES, 1.65 k, 1%, 0.25 W, 1206	1206	CRCW12061K65FKEA	Vishay-Dale		
R120	1	6.04k	RES, 6.04 k, 1%, 0.1 W, 0603	0603	CRCW06036K04FKEA	Vishay-Dale		
R121	1	150k	RES, 150 k, 1%, 0.1 W, 0603	0603	CRCW0603150KFKFA	Vishay-Dale		
R122	1	10.0k	RES, 10.0 k, 1%, 0.1 W, 0603	0603	CRCW060310K0FKEA	Vishay-Dale		
R124	1	1.00k	RES, 1.00 k, 0.1%, 0.1 W, 0603	0603	RT0603BRB071KL	Yageo America		
R125	1	57.6k	RES, 57.6 k, 1%, 0.1 W, 0603	0603	CRCW060357K6FKEA	Vishay-Dale		
R126	1	0	RES, 0, 5%, 0.1 W, 0603	0603	CRCW06030000Z0EA	Vishay-Dale		
R127	1	20.5k	RES, 20.5 k, 1%, 0.1 W, 0603	0603	RC0603FR-0720K5L	Yageo America		
R128	1	68.1	RES, 68.1, 1%, 0.1 W, 0603	0603	CRCW060368R1FKFA	Vishay-Dale		
R130	1	17.4k	RES, 17.4 k, 1%, 0.1 W, 0603	0603	CRCW060317K4FKFA	Vishay-Dale		
R300	1	1.40Meg	RES, 1.40 M, 1%, 0.25 W, 1206	1206	CRCW12061M40FKFA	Vishay-Dale		
RT100	1	4.70 ohm	Thermistor NTC, 4.70 ohm, 20%, 15x7mm	15x7mm	B57237S0479M000	TDK		
T100	1	650uH	Transformer, 650 uH, TH	42x55mm	SRX30ER-U121200K64XX	TDK		
TP100	1	Red	Test Point, TH, Miniature, Red	Keystone5000	5000	Keystone		
TP101	1	Black	Test Point, TH, Miniature, Black	Keystone5001	5001	Keystone		
U100, U101	2		UCC24612-2DBV, DBV0005A (SOT-23-5)	DBV0005A	UCC24612-2DBVR	Texas Instruments	UCC24612-2DBVT	Texas Instruments
U102	1		Enhanced LLC Resonant Controller with Driver, DDB0014A	DDB0014A	UCC25630-2DDBR	Texas Instruments		Texas Instruments
U103	1		OPTOISOLATOR 5.3KV TRANS 4-DIP	DIP, 4-Leads, Body 6.86x4.83mm, Pitch 2.54mm	V0618A-3	Vishay-Semiconductor		

Designator	Quantity	Value	Description	PackageReference	PartNumber	Manufacturer	Alternate PartNumber	Alternate Manufacturer
U104	1		Low-Voltage Adjustable Precision Shunt Regulator, 80 mA, -40 to 125 degC, 3-pin SOT-23 (DBZ), Green (RoHS & no Sb/Br)	DBZ0003A	TLVH431AQDBZR	Texas Instruments	Equivalent	Texas Instruments
C125	0	100pF	CAP, CERM, 100 pF, 50 V,+/- 5%, C0G/NP0, 0603	0603	06035A101JAT2A	AVX		
R113	0	0	RES, 0, 5%, 0.75 W, AEC-Q200 Grade 0, 2010	2010	CRCW20100000Z0EF	Vishay-Dale		

Notes:

Unless otherwise noted in the Alternate PartNumber and/or Alternate Manufacturer columns, all parts may be substituted with equivalents.

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