



Bill of Materials for the NCP13992AIOGEVB Evaluation Board

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
B1	1	Bridge Rectifier	KBU8M		Through Hole	Vishay	KBU8M-E4/51	Yes	Yes
C12	1	Electrolytic Capacitor	220u/25V		Through Hole	Panasonic	EEU-FC1E221	Yes	Yes
C13, C31	3	Ceramic Capacitor	1n/50V		C 0805	Various			Yes
C15, C33, C47	3	MKP Capacitor	1uF/275Vac		Through Hole	Würth Elektronik	MAXPZ25105K310ASF6 46000	Yes	Yes
C16, C38, C55	3	Electrolytic Capacitor	100u/450V		Through Hole	Rubycon	450BXW100MEFC18X30	Yes	Yes
C17, C29	2	Ceramic Capacitor	220p/1kV		Through Hole	Vishay	S221M39SL0N63K7R	Yes	Yes
C2, C26, C27, C30, C34, C57	6	Ceramic Capacitor	10n/50V		C 0805	Various	-	Yes	Yes
C3	1	Electrolytic Capacitor	220u/35V		Through Hole	Panasonic	EEU-FM1V221L	Yes	Yes
C32	1	Ceramic Capacitor	3n9/50V		C 0805	Various	-	Yes	Yes
C36	1	Ceramic Capacitor	2u2/16V		C 0805	Various	-	Yes	Yes
C37	1	Electrolytic Capacitor	100u/25V		Through Hole	Panasonic	EEU-TA1E101BJ	Yes	Yes
C4, C25	2	Ceramic Capacitor	6n8/50V		1206	Various	-	Yes	Yes
C40	1	Ceramic Capacitor	820n/16V		C 0805	Various	-	Yes	Yes
C44	1	Ceramic Capacitor	100p/50V		C 0805	Various	-	Yes	Yes
C5, C19, C41, C43, C53, C54, C59, C63, C71, C73	10	Ceramic Capacitor	100n/50V		C 0805	Various	-	Yes	Yes
C50	1	Ceramic Capacitor	470p/50V		C 0805	Various	-	Yes	Yes
C51	2	Ceramic Capacitor	2n7/50V		C 0805	Various	-	Yes	Yes
C62	2	Ceramic Capacitor	3n3/50V		C 0805	Various	-	Yes	Yes
C56	1	Electrolytic Capacitor	220uF/35V		Through Hole	Panasonic	EEU-FM1V221L	Yes	Yes
C6, C20	2	Ceramic Capacitor	1uF/25V		C 0805	Various	-	Yes	Yes
C66	1	Ceramic Capacitor	220n/16V		C 0805	Various	-	Yes	Yes
C7, C18	2	Metal Film Capacitor	33nF/630V		Through Hole	Epcos	B32652A6333J	Yes	Yes
C8, C9, C10, C11, C21, C22, C23, C24	8	Electrolytic Capacitor	1000u/16V		Through Hole	Panasonic	P15332CT-ND	Yes	Yes
CY1, CY2, CY3	3	Y Capacitor	2n2/Y1		Through Hole	Murata	DE1E3KX222MA5BA01		Yes
D1, D7, D8, D14, D17	5	Diode	MMSD4148		SOD123	ON Semiconductor	MMSD4148T3G	No	Yes
D12, D13	2	Schottky Diode	MBR0540		SOD123	ON Semiconductor	MBR0540T1G	No	Yes
D19, D26	2	Schottky Diode	BAT54		SOD123	ON Semiconductor	BAT54T1G	No	Yes
D2	1	Zener Diode	15V		SOD123	ON Semiconductor	MMSZ15T1G	No	Yes
D21	1	Zener Diode	4V3		SOD123	ON Semiconductor	MMSZ4V3T1G	No	Yes
D22, D28	2	Power Rectifier Diode	MRA4007T3G		SMA	ON Semiconductor	MRA4007T3G	No	Yes

D23	1	Ultrastar Power Rectifier Diode	MURA160		SMA	ON Semiconductor	MURA160T3G	No	Yes
D3	1	Schottky Diode	MBR2H100		SOD123	ON Semiconductor	MBR2H100SFT3G	No	Yes
D4	1	Standard Recovery Rectifier Diode	1N5408		Through Hole	ON Semiconductor	1N5408RLG	No	Yes
D5	1	Soft Recovery Rectifier Diode	MSR860		TO220	ON Semiconductor	MSRF860G	No	Yes
D6, D9	2	Diode	NU		-	-	-	-	Yes
F1	1	FUSE HOLDER + 4/A/T Fuse	T-4A		Through Hole	Various	-	Yes	Yes
IC3	1	LLC Controller	NCP13992		NCP1399	ON Semiconductor	NCP13992AIOGEVB	No	Yes
IC4, IC5	2	Synchronous Rectifier Controller	NCP4306		SOIC8	ON Semiconductor	NCP4306AAAZZA	No	Yes
IC6, IC7	2	Shunt Regulator	NCP431		SOT23	ON Semiconductor	NCP431AVSNT1G	No	Yes
L1	1	Power Resonant Inductor	50uH		RM8	Würth Elektronik	750370249	Yes	Yes
L15	1	Common Mode Inductor	2.9mH		Through Hole	ICE Components	LF-28030-0029-H	No	Yes
L2	1	PFC Inductor	260uH		PQ3225	Würth Elektronik	750315036	Yes	Yes
L4	1	High Current Inductor	300nH/ 30A		Through Hole	Würth Elektronik	WW006	Yes	Yes
L5, L6	2	EMI Inductor	90uH		Through Hole	Würth Elektronik	7447013	Yes	Yes
NTC1	1	NTC Thermistor	330k		Through Hole	Vishay	NTCLE100E3334JB0	Yes	Yes
OK1, OK3	2	Optocoupler	FOD817B		Through Hole	ON Semiconductor	FOD817B	No	Yes
Q2, Q9, Q20, Q21	4	N-channel MOSFET	NTMFS5C442		SO-8FL/DFN-5	ON Semiconductor	NTMFS5C442NLTT1G	No	Yes
Q3, Q5	2	N-channel MOSFET	FCPF13N60		TO220	ON Semiconductor	FCPF13N60NT	No	Yes
Q4	1	N-channel MOSFET	FCPF22N60		TO220	ON Semiconductor	FCPF22N60NT	No	Yes
Q6, Q8	2	N-channel MOSFET	BSS138		SOT23	ON Semiconductor	BSS138LT1G	Yes	Yes
Q7	1	PNP Transistor	BC807-16		SOT23	ON Semiconductor	BC807-16LT1G	Yes	Yes
R1, R99	2	Resistor	150k		R 0805	Various	-	Yes	Yes
R10, R32	2	Resistor	4R7/ 5%		R 0805	Various	-	Yes	Yes
R100, R101, R105	3	Resistor	27k		R 0805	Various	-	Yes	Yes
R102	1	Resistor	330k		R 0805	Various	-	Yes	Yes
R107	1	Resistor	4M7/ 5%		Through Hole	Vishay	VR37000004704JA100	Yes	Yes
R11, R39, R104	3	Resistor	5k6		R 0805	Various	-	Yes	Yes
R126	1	Resistor	5k1		R 0805	Various	-	Yes	Yes
R137	1	Resistor	75k		R 0805	Various	-	Yes	Yes
R148	1	Resistor	1k5		R 0805	Various	-	Yes	Yes
R150	1	Resistor	2R/ 5%		R 0805	Various	-	Yes	Yes
R18, R27	2	Resistor	1M8		R 0805	Various	-	Yes	Yes
R2, R158	2	Resistor	86k		R 0805	Various	-	Yes	Yes
R24, R84	2	Resistor	1k		R 0805	Various	-	Yes	Yes
R25	1	Resistor	47R/ 5%		R 0805	Various	-	Yes	Yes
R26, R54, R55	3	Resistor	22R/ 5%		R 0805	Various	-	Yes	Yes
R28	1	Resistor	33k		R 0805	Various	-	Yes	Yes

R3, R5, R13, R16, R30, R34, R43, R50, R56, R57, R61, R69, R72, R78, R94, R140, R142, R147	18	Resistor	0R		R 0805	Various	-	Yes	Yes
R31	1	Resistor	1M		R 0805	Various	-	Yes	Yes
R35, R47	2	Resistor	1M6		R 0805	Various	-	Yes	Yes
R38	1	Resistor	0.05R / 3W		Through Hole	Vishay/ Dale	LVR03R0500FR50	Yes	Yes
R4, R12, R20, R33, R36, R51	6	Resistor	22k		R 0805	Various	-	Yes	Yes
R42, R52, R68	3	Resistor	0R		R 1206	Various	-	Yes	Yes
R48	1	VARISTOR	275 VAC		Through Hole	Würth Elektronik	820512711	Yes	Yes
R49	1	Resistor	680k		R 0805	Various	-	Yes	Yes
R58, R62	2	Resistor	1R/ 5%		R 0805	Various	-	Yes	Yes
R6, R15, R87, R92	4	Resistor	2k7		R 1206	Various	-	Yes	Yes
R63	1	Resistor	2k		R 0805	Various	-	Yes	Yes
R64	1	Resistor	100		R 0805	Various	-	Yes	Yes
R66	1	Resistor	4k7		R 0805	Various	-	Yes	Yes
R67	1	Resistor	13k		R 0805	Various	-	Yes	Yes
R7, R37	2	Resistor	36k		R 0805	Various	-	Yes	Yes
R70, R133	2	Resistor	20k		R 0805	Various	-	Yes	Yes
R74, R76, R95	3	Resistor	47k		R 0805	Various	-	Yes	Yes
R75	1	Resistor	30k		R 0805	Various	-	Yes	Yes
R77	1	Resistor	12k		R 0805	Various	-	Yes	Yes
R79	1	Resistor	82k		R 0805	Various	-	Yes	Yes
R8, R9, R40, R41	4	Resistor	56R/ 5%		R 1206	Various	-	Yes	Yes
R80	1	Resistor	200k		R 0805	Various	-	Yes	Yes
R82, R88	2	Resistor	68k		R 0805	Various	-	Yes	Yes
R85	1	Resistor	820R		R 0805	Various	-	Yes	Yes
R89	1	Resistor	39k		R 0805	Various	-	Yes	Yes
R91	1	NTC Thermistor	strap		-	-	-	Yes	Yes
R96	1	Resistor	5R6/ 5%		R 0805	Various	-	Yes	Yes
R98	1	Resistor	11k		R 0805	Various	-	Yes	Yes
TR1	1	LLC Transformer	Lpri = 600uH		PQ3225	Würth Elektronik	750314580	Yes	Yes
U1	1	Power Factor Controller	NCP1616A1		SO9	ON Semiconductor	NCP1616A1	No	Yes
X1	1	Wire to board terminal	Pitch 5 mm		Through Hole	IMO	20.700M/2	Yes	Yes
X2	1	Wire to board terminal	Pitch 5 mm		Through Hole	Lumberg	KRE 02	Yes	Yes
									Yes