

Bill of Materials for the NCP1615AIOGEVB Evaluation Board

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free	Comments
B1	1	Bridge Rectifier	KBU8M	-	KBU8M	Vishay Semiconductor	KBU8M-E451	Yes	Yes	
C1, C28, C31, C32, C33, C34	17	Ceramic Capacitor	NU	-	0805	-	-	Yes	Yes	
C12	1	Electrolytic capacitor	220 µF / 25 V	20%	Through Hole	Panasonic	EEU-FC1E221	Yes	Yes	
C14	1	Electrolytic capacitor	NU	-	Through Hole	-	-	Yes	Yes	
C15, C33, C47	3	MKP Capacitor	1 µF / 275 Vac	10%	Through Hole	Würth Elektronik	MXXP225105K310ASP46000	Yes	Yes	
C16, C38, C55	3	Electrolytic capacitor	100 µF / 450 V	20%	Through Hole	Rubycon	450BXW100MEFC18X30	Yes	Yes	
C17, C29	2	Ceramic Capacitor	220 pF / 1 kV	20%	Through Hole	Vishay	S221M39S10N63K7R	Yes	Yes	
C18, C27	5	Ceramic Capacitor	10 nF	10%	0805	Kemet	C0805C103K5RACTU	Yes	Yes	
C3, C56	2	Electrolytic capacitor	220 µF / 35 V	20%	Through Hole	Panasonic	EEU-FM1V221L	Yes	Yes	
C36	1	Ceramic Capacitor	2.2 µF	-	0805	Kemet	C0805C225K3RAC7800	Yes	Yes	
C37	1	Ceramic Capacitor	22 µF / 35 V	20%	Through Hole	Panasonic	P15814CT-ND	Yes	Yes	
C4, C25	2	Ceramic Capacitor	3.9 nF	10%	0805	Kemet	C0805C392K5RACTU	Yes	Yes	
C40, C66	2	Ceramic Capacitor	220 nF	10%	0805	Kemet	C0805C224K5RACTU	Yes	Yes	
C42	1	Electrolytic capacitor	NU	-	Through Hole	-	-	Yes	Yes	
C44	1	Ceramic Capacitor	100 pF	10%	0805	Kemet	C0805C101K5RACTU	Yes	Yes	
C5, C19, C41, C43, C46, C53, C54	7	Ceramic Capacitor	100 nF	10%	0805	Kemet	C0805C104K5RACTU	Yes	Yes	
C50	1	Ceramic Capacitor	470 pF	10%	0805	Kemet	C0805C471K5RACTU	Yes	Yes	
C51	1	Ceramic Capacitor	2.7 nF	10%	0805	Kemet	C0805C272K5RACTU	Yes	Yes	
C59	1	Ceramic Capacitor	22 nF	10%	0805	Kemet	C0805C223K5RACTU	Yes	Yes	
C6, C20	2	Ceramic Capacitor	1.0 µF	10%	1206	Kemet	C1206C105K5RACTU	Yes	Yes	
C60, C61	2	Ceramic Capacitor	NU	-	1206	-	-	Yes	Yes	
C62	1	Ceramic Capacitor	1.0 nF	10%	0805	Kemet	C0805C102K5RACTU	Yes	Yes	
C67	1	Ceramic Capacitor	NU	-	0805	-	-	Yes	Yes	
C7, C18	2	Ceramic Capacitor	15 nF / 2 kVdc	5%	Through Hole	Vishay	BFC238560153	No	Yes	
C8, C9, C10, C11, C21, C22, C23, C24	8	Electrolytic capacitor	1000 µF / 16 V	20%	Through Hole	Panasonic	P15332CT-ND	Yes	Yes	
CY1, CY2, CY3	3	Ceramic Capacitor	2.2 nF / Y1/X1	20%	Through Hole	Murata	DE1E3KX222M58A01	Yes	Yes	
D1, D7, D8, D14, D24, D25	6	Switching Diode	MMSD4148	-	SOD-123	ON Semiconductor	MMSD4148T3G	No	Yes	
D10, D105	2	Diode	NU	-	SOD123	-	-	Yes	Yes	
D11, D12, D13	3	Diode	NU	-	SOD123	-	-	Yes	Yes	
D112	1	Switching Diode	NU (MMSD4148)	-	SOD123	ON Semiconductor	MMSD4148T3G	No	Yes	
D19, D26	2	Schottky Diode	BAT54T1	-	SOD-123	ON Semiconductor	BAT54T1G	No	Yes	
D2	1	Zener Diode	18 V	5%	SOD123	ON Semiconductor	MMSZ18T1G	No	Yes	
D20, D27	2	Zener Diode	NU	-	SOD123	-	-	Yes	Yes	
D21	1	Zener Diode	4.3 V	5%	SOD-123	ON Semiconductor	MMSZ4V7T1G	No	Yes	
D22, D28	2	Power rectifier Diode	MRA4007T3G	-	SMA	ON Semiconductor	MRA4007T3G	No	Yes	
D23	1	Ultrafast Power Rectifier Diode	MURA160	-	SMA	ON Semiconductor	MURA160T3G	No	Yes	
D3, D18	2	Schottky Power Rectifier Diode	MBR2H100SFT3G	-	SOD-123	ON Semiconductor	MBR2H100SFT3G	No	Yes	
D4	1	Standard Recovery Rectifier Diode	1N5408	-	Axial Lead	ON Semiconductor	1N5408RLG	No	Yes	
D5	1	Soft Recovery Rectifier Diode	MSR860	-	TO220 (2 LEAD)	ON Semiconductor	MSRF860G	No	Yes	
D6, D9	2	Diode	NU	-	SMA	-	-	Yes	Yes	
F1	1	Fuse, Medium Delay	T-4A	-	-	Bussmann	TDC 210-4A	Yes	Yes	
F1 - Holder	1	Fuse Holder	-	-	SH22.5A	Multicomp	MCHTC-15M	Yes	Yes	
F1 - Cover	1	Fuse Cover	-	-	-	Multicomp	MCHTC-150M	Yes	Yes	
HEATSINK 1	1	Heat Sink	SK 454 150 SA	-	SK 454 150 SA	Fischer Elektronik	SK 454 150 SA	Yes	Yes	
IC101	1	Secondary Side Sleep mode Controller	NU	-	SOIC-8	-	-	No	Yes	
IC102	1	Secondary Side Sleep mode Controller	NU	-	SOIC-8	-	-	No	Yes	
IC3	1	Resonant Mode Controller	NCP1399	-	SOIC-16	ON Semiconductor	NCP1399AXDR2G	No	Yes	
IC4, IC5	2	Synchronous Rectifier Controller	NCP43080	-	SOIC-8	ON Semiconductor	NCP43080DDR2G	No	Yes	
IC6, IC7	2	Programmable Precision Reference	NCP431	-	SOT-23	ON Semiconductor	NCP431AVSNT1G	No	Yes	
L12, L13	2	Inductor	100 µH	20%	DO5040H	Colcraft	DO5040H-104MLB	Yes	Yes	
L15	1	EMI Filter	2.9 mH	15%	TLBI	ICE Components	LF-28030-0029-H	Yes	Yes	
L2	1	PFC Inductor	260 µH	10%	PQ3225	Würth Elektronik	750315036	Yes	Yes	
L3	1	Resonant Inductor	52 µH	10%	RMB	Würth Elektronik	750370249	Yes	Yes	
L4	1	Ferrite Bead	-	-	-	Würth Elektronik	74270021	Yes	Yes	
L5, L6	2	Inductor	NU	-	-	-	-	Yes	Yes	
L8	1	Inductor	NU	-	-	-	-	Yes	Yes	
LED1	1	LED 3 mm	NU	-	LED3MM	-	-	Yes	Yes	
NTC1, NTC2	2	Thermistor	330k	-	Through Hole	Vishay	NTCLE100E3334JB0	Yes	Yes	
OK1, OK3	2	Opto Coupler	817B	-	DIP-4	Fairchild	FOD817B	Yes	Yes	
OK2	1	Opto Coupler	NU	-	DIP-4	-	-	Yes	Yes	
Q10, Q100	2	PNP Transistor	NU	-	SOT-23	-	-	Yes	Yes	
Q2, Q9, Q20, Q21	4	N-Channel Power MOSFET	NVMFS5830NL	-	SO-8FL / DFN-8	ON Semiconductor	NVMFS5830NL1G	No	Yes	
Q3, Q5	2	N-Channel Power MOSFET	STP12NM50FP	-	TO-220	ST Microelectronics	STP12NM50FP	Yes	Yes	
Q4	1	N-Channel Power MOSFET	STP20NM60FP	-	TO-220	ST Microelectronics	STP20NM60FP	Yes	Yes	
Q6	1	Small Signal MOSFET N-Channel	BSS138	-	SOT-23-3	ON Semiconductor	BSS138L1G	No	Yes	

Q7	1	PNP General Purpose Transistor	BC807	-	SOT-23-3	ON Semiconductor	BC807-16LT1G		No	Yes
R1, R99	2	Resistor SMD	150 kΩ	1%	0805	Rohm Semiconductor	MCR10EZHF1503		Yes	Yes
R10, R32	2	Resistor SMD	22 Ω	1%	0805	Rohm Semiconductor	MCR10EZPF22R0		Yes	Yes
R104	1	Resistor SMD	130 kΩ	1%	0805	Rohm Semiconductor	MCR10EZH1303		Yes	Yes
R107	1	Resistor through hole, high voltage	4.7 MΩ	5%	0414	Vishay	VR3700004704JA100		Yes	Yes
R109	1	Resistor SMD	430 Ω	1%	0805	Rohm Semiconductor	MCR10EZHF4300		Yes	Yes
R11, R39	2	Resistor SMD	3.6 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF3601		Yes	Yes
R12, R20, R33, R36, R51	5	Resistor SMD	10 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF1002		Yes	Yes
R126	1	Resistor SMD	5.1 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF5101		Yes	Yes
R133	1	Resistor SMD	360 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF3603		Yes	Yes
R137	1	Resistor SMD	75 kΩ	1%	0805	Rohm Semiconductor	MCR10EZHF7502		Yes	Yes
R14, R150	2	Resistor SMD	2.0 Ω	5%	0805	Rohm Semiconductor	MCR10EZHU2R0		Yes	Yes
R148	1	Resistor SMD	1.5 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF1501		Yes	Yes
R18, R27	2	Resistor SMD	1.8 MΩ	5%	0805	Rohm Semiconductor	MCR25JZH185		Yes	Yes
R19, R21, R22, R23, R45, R58, R62, R65, R71, R83, R86, R90, R93, R97, R114, R115, R116, R117, R118, R119, R120, R121, R122, R123, R124, R125, R127, R128, R131, R138, R141, R143, R144, R146	34	Resistor SMD	NU	-	0805				Yes	Yes
R2, R3, R5, R16, R17, R24, R29, R30, R34, R56, R72, R78, R111, R140, R142, R147	16	Resistor SMD	0.0 Ω	-	0805	Rohm Semiconductor	MCR10EZPJ000		Yes	Yes
R25	1	Resistor SMD	47 Ω	1%	0805	Rohm Semiconductor	MCR10EZHF47R0		Yes	Yes
R26	1	Resistor SMD	2.2 Ω	1%	0805	Rohm Semiconductor	MCR10ERTFL2R20		Yes	Yes
R28	1	Resistor SMD	6.2 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF6201		Yes	Yes
R31	1	Resistor SMD	43 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF4302		Yes	Yes
R35, R47	2	Resistor SMD	1.6 MΩ	1%	0805	Yageo	RC0805FR-071M6L		Yes	Yes
R38	1	Power Resistor	0.05 Ω / 3 W	1%	Through Hole	Vishay / Dale	LVRO3R0500FR350		Yes	Yes
R4, R82, R88	3	Resistor SMD	68 kΩ	1%	0805	Rohm Semiconductor	MCR10EZH6802		Yes	Yes
R42, R52, R68	3	Resistor SMD	0.0 Ω	-	1206	Rohm Semiconductor	MCR18EZHJ000		Yes	Yes
R44	1	Resistor SMD	NU	-	R2010	-	-		Yes	Yes
R48	1	Varistor	275 Vac	1%	Through Hole	Würth Elektronik	820512711		Yes	Yes
R54, R55	2	Resistor SMD	10 Ω	1%	0805	Rohm Semiconductor	MCR10EZH10R0		Yes	Yes
R6, R15, R87, R92	4	Resistor SMD	2.7 kΩ	1%	1206	Rohm Semiconductor	MCR10EZPF2701		Yes	Yes
R63	1	Resistor SMD	2.0 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF2001		Yes	Yes
R64	1	Resistor SMD	100 Ω	1%	0805	Rohm Semiconductor	MCR10EZPF1000		Yes	Yes
R66	1	Resistor SMD	3.9 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF3901		Yes	Yes
R67	1	Resistor SMD	13 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF1302		Yes	Yes
R7, R37	2	Resistor SMD	22 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF2202		Yes	Yes
R70	1	Resistor SMD	59 kΩ	1%	0805	Rohm Semiconductor	MCR10EZH5902		Yes	Yes
R75, R132	2	Resistor SMD	30 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF3002		Yes	Yes
R76, R95, R110	3	Resistor SMD	47 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF4702		Yes	Yes
R77	1	Resistor SMD	12 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF1202		Yes	Yes
R79	1	Resistor SMD	82 kΩ	1%	0805	Rohm Semiconductor	MCR10EZPF8202		Yes	Yes
R8, R9, R40, R41	4	Resistor SMD	27 Ω	1%	1206	Rohm Semiconductor	MCR10EZPF27R0		Yes	Yes
R80	1	Resistor SMD	200 kΩ	1%	0805	Rohm Semiconductor	MCR10EZH2003		Yes	Yes
R84, R105	2	Resistor SMD	1.0 kΩ	1%	0805	Rohm Semiconductor	MCR10EZH1001		Yes	Yes
R85	1	Resistor SMD	820 Ω	1%	0805	Rohm Semiconductor	MCR10EZH8200		Yes	Yes
R89	1	Resistor SMD	39 kΩ	1%	0805	Rohm Semiconductor	MCR10EZH3902		Yes	Yes
R91	1	Wire Strap	WIRE STRAP	-	-	-	-		Yes	Yes
R96	1	Resistor SMD	5.6 Ω	1%	0805	Rohm Semiconductor	MCR10EZH5601		Yes	Yes
R98, R103	2	Resistor SMD	11 kΩ	1%	0805	Rohm Semiconductor	MCR10EZH1102		Yes	Yes
TR2	1	Transformer	750314580	10%	PQ3225	Würth Elektronik	750314580		Yes	Yes
U1	1	Power Factor Controller	NCP1615C	-	SOIC-15	ON Semiconductor	NCP1615C5DR2G		No	Yes
X1	1	Output Terminal Block	Pitch 5 mm	-	20.700M/2	IMO	20.700M/2		Yes	Yes
X2	1	Input Terminal Block	Pitch 5 mm	-	KRE 02	LUMBERG	KRE 02		Yes	Yes