



Bill of Materials for the NCP1397GANGEVB Evaluation Board

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
C1, C53	2	Cap	2.2nF 16V	10%	0603	AVX	0603YC222KAT2A	Yes	Yes
C2, C9, C28, C32, C34, C52	6	Cap	1µF, 16V	10%	0603	Taiyo Yuden	EMK107B7105KA-T	Yes	Yes
C3	1	Cap	1.5nF, 16V	10%	0603	Kemet	C0603C152K4RACTU	Yes	Yes
C4	1	Cap	2.2µF, 16V	10%	0603	TDK	C1608X5R1C225K080AB	Yes	Yes
C5	1	Cap	100pF, 50V	5%	0603	AVX	C1608C0G1H101J080AA	Yes	Yes
C6, C7, C8	3	Cap	4.7nF, 630V	5%	1206	TDK	C3216C0G2J472J085AA	Yes	Yes
C10	2	Cap	0.22µF, 630V	20%	7x15x17.5(mm)	Vishay	BFC233820224	Yes	Yes
CY1, CY2, CY4	3	Cap	4.7nF, 250VAC	20%	Rad	Kemet	C947U472MYVDBA7317	Yes	Yes
C13, C71	2	Cap	120µF, 450V	20%	Rad	Rubycon	450QXW120MEFC18X31.5	Yes	Yes
C14, C18	2	Cap	3.3µF, 400V	20%	E3.5-8	Rubycon	400LLE3R3MEFC8X11R5	Yes	Yes
C15, C16, C23, C24, C25	5	Cap	0.1µF, 630V	10%	1812	TDK	C4532X7R2J104K230KA	Yes	Yes
C17, C19, C27, C30, C33, C35, C37	7	Cap	0.1µF, 25V	10%	0603	Kemet	C0603C104K3RACTU	Yes	Yes
C20	1	Cap	0.1µF, 25V	10%	1206	Kemet	C1206F104K3RACTU	Yes	Yes
C21, C29	2	Cap	10µF, 16V	20%	0805	Kemet	C0805C106M4PACTU	Yes	Yes
C22, C61	2	Cap	100µF, 16V	20%	Rad. 5x2(mm)	Rubycon	16PX100MEFCTA5X11	Yes	Yes
C26	1	Cap	470µF, 16V	20%	E3.5-8	Nichicon	PLG1C471MDO1	Yes	Yes
C31, C50, C59	3	Cap	4.7µF, 16V	10%	0805	Kemet	C0805C475K4PACTU	Yes	Yes
C36	1	Cap	68nF, 16V	10%	0603	Yageo	CC0603KRX7R7BB683	Yes	Yes
C38, C47, C70	3	Cap	820µF, 16V	20%	E5-10.5	Panasonic	EEU-FC1C821	Yes	Yes
C39	1	Cap	680µF, 16V	20%	E3.5-8	Panasonic	EEU-FC1C681L	Yes	Yes
C40, C41, C42, C43, C55, C56, C62, C63	8	Cap	100µF, 16V	20%	1210	Taiyo Yuden	EMK325ABJ107MM-T	Yes	Yes
C44	1	Cap	22nF, 1kV	5%	26x6.5(mm)	Kemet	PHE450PD5220JR06L2	Yes	Yes
C45, C46	2	Cap	330pF, 50V	5%	0805	Kemet	C0805C331J5GACTU	Yes	Yes
C51	1	Cap	10nF, 16V	10%	0603	TDK	CGJ3E2X7R1C103K080AA	Yes	Yes
C54	1	Cap	1nF, 16V	5%	0603	Kemet	C0603C102J4RACTU	Yes	Yes
C57, C58	2	Cap	10nF, 630V	5%	1206	TDK	C3216C0G2J103J160AA	Yes	Yes
CX1, CX2	2	Cap	0.47 µF, 630VDC	20%	10x16.5x17.5(mm)	Vishay	BFC233920474	Yes	Yes
C60	1	Cap	820µF, 16V	20%	E5-10.5	Nichicon	PLG1C821MDO1	Yes	Yes
C68	1	Cap	2.2µF, 450V	5%	18.8x12.8(mm)	Panasonic	ECW-F2W225JA	Yes	Yes
R1	1	Resistor	110k, 0.1W	1%	0603	Vishay	CRCW0603110KFKEA	Yes	Yes
R2	1	Resistor	75k, 0.1W	5%	0603	Vishay	CRCW060375K0JNEA	Yes	Yes
R3, R4, R5	3	Resistor	2.37M, 1/8W	1%	0805	Yageo	RC0805FR-072M37L	Yes	Yes
R6	1	Resistor	3.3k, 0.1W	1%	0603	Stackpole	RMCF0603FT3K30	Yes	Yes
R7	1	Resistor	60mΩ, 1W	1%	2512	Vishay	WSL2512R0600FEA	Yes	Yes
R8, R34	2	Resistor	11k, 0.1W	1%	0603	Panasonic	ERJ-3EKF1102V	Yes	Yes
R9, R38	2	Resistor	23.2k, 0.1W	1%	0603	Panasonic	ERA-3AEB2322V	Yes	Yes
R10, R13	2	Resistor	220k, 1/4W	1%	1206	Yageo	RC1206FR-07220KL	Yes	Yes
R11	1	Resistor	1.8M, 1/8W	1%	0805	Rohm	KTR10E2PF1804	Yes	Yes
R12	1	Resistor	1.78M, 1/8W	1%	0805	Vishay	CRCW08051M78FKEA	Yes	Yes
R14	1	Resistor	10Ω, 1W	1%	2010	Stackpole	RMCP2010FT10R0	Yes	Yes
R15	1	Resistor	2.05k, 0.1W	1%	0603	Yageo	RC0603FR-072K05L	Yes	Yes
R16	1	Resistor	13k, 0.1W	1%	0603	Yageo	RC0603FR-0713KL	Yes	Yes

R17	1	Resistor	13k, 1/4W	5%	1206	Panasonic	ERJ-8GEYJ133V	Yes	Yes
R19	1	Resistor	4.32k 0.1W	1%	0603	Yageo	RC0603FR-074K32L	Yes	Yes
R18	1	Resistor	4.7Ω, 1/8W	1%	0805	Rohm	KTR10EZPF4R70	Yes	Yes
R20	1	Resistor	4.7k, 0.1W	1%	0603	Rohm	MCR03ERTF4701	Yes	Yes
R21, R22, R23	3	Resistor	953k, 1/8W	1%	0603	Panasonic	ERJ-6ENF9533V	Yes	Yes
R24	1	Resistor	10k, 1/8W	1%	0805	Panasonic	ERJ-6ENF1002V	Yes	Yes
R25, R27	2	Resistor	20k, 0.1W	1%	0603	Rohm	MCR03ERTF2002	Yes	Yes
R26, R30	2	Resistor	5.9k, 0.1W	1%	0603	Yageo	RC0603FR-075K9L	Yes	Yes
R28, R29	2	Resistor	0.56Ω, 1/8W	1%	0805	Yageo	RL0805FR-070R56L	Yes	Yes
R31	1	Resistor	2.2k, 0.1w	1%	0603	Yageo	RC0603FR-072K2L	Yes	Yes
R32, R40	2	Resistor	1k, 0.1W	1%	0603	Yageo	RC0603FR-071KL	Yes	Yes
R33	1	Resistor	14.7k, 0.1W	1%	0603	Panasonic	ERJ-3EKF1472V	Yes	Yes
R35	1	Resistor	13.7k, 0.1W	1%	0603	Panasonic	ERJ-3EKF1372V	Yes	Yes
R36	1	Resistor	750Ω, 0.1W	1%	0603	Yageo	RC0603FR-07750RL	Yes	Yes
R37	1	Resistor	332Ω, 0.1W	1%	0603	Vishay	CRCW0603332RFKEA	Yes	Yes
R39	1	Resistor	100Ω, 0.1W	1%	0603	Yageo	RC0603FR-07100RL	Yes	Yes
R41	1	Resistor	7.5k, 0.1W	1%	0603	Yageo	MCR03ERTF7501	Yes	Yes
R42	1	Resistor	2k, 0.1W	1%	0603	Panasonic	ERJ-3EKF2001V	Yes	Yes
R43	1	Resistor	150k, 0.1W	1%	0603	Yageo	RC0603FR-07150KL	Yes	Yes
R44	1	Resistor	12.4k, 0.1W	1%	0603	Yageo	RC0603FR-0712K4L	Yes	Yes
R46	1	Resistor	4.22k 0.1W	1%	603	Yageo	RC0603FR-074K22L	Yes	Yes
R47, R48, R57, R58, R59, R60	6	Resistor	N/A	-	0603	-	-	Yes	Yes
R45	1	Resistor	6.8k, 0.1W	1%	0603	Yageo	RC0603FR-076K8L	Yes	Yes
R53, R56, R52	3	Resistor	0Ω, 0.1W	-	0603	Yageo	RC0603JR-070RL	Yes	Yes
R49, R50	2	Resistor	24k, 1/8W	5%	0805	Yageo	RC0805JR-0724KL	Yes	Yes
R54, R55	2	Resistor	4.7Ω, 0.1W	1%	0603	Panasonic	P4.7AJCT-ND	Yes	Yes
R61, R62	2	Resistor	2.2M, 1/4W	5%	1206	Yageo	RC1206JR-072M2L	Yes	Yes
R63, R64	2	Resistor	10Ω, 1/4W	5%	0805	Stackpole	RPC0805JT10R0	Yes	Yes
D1	1	Diode	1000V, 1A	-	DO-214AC	Diode Inc	S1M-13-F	Yes	Yes
D2	1	Diode	600V, 3A	-	DO-214AB	Fairchild	S3J	Yes	Yes
D3	1	Diode	600V, 2A	-	TO220-2	Cree	C3D02060A	Yes	Yes
D5	1	Diode	600V, 1A	-	DO-214AC	Diode Inc	S1J-13-F	Yes	Yes
D6	1	Diode	600V, 1A	-	DO-214AC	Diode Inc	US1J-13-F	Yes	Yes
D7	1	Diode	600V, 1A	-	DO-214AC	Micro Commercial Inc.	ES1J-LTP	Yes	Yes
D8	1	Diode	11V, 0.5W	-	SOD123	ON Semiconductor	MMSZ5241BT1G	No	Yes
D9, D10	2	Diode	75V, 0.15A	-	SOD323F	Fairchild	1N4148WS	Yes	Yes
Q1, Q2, Q3	3	Power GaN Cascode Transistor	600V, 9A, 290 mΩ	-	TO220	ON Semiconductor	NTP8G202NG	No	Yes
Ld1, Ld2	2	Inductor	90μH, DCR<40mΩ	-	-	Würth Elek	7447013	Yes	Yes
L3	1	Inductor	10mH, 1.9A	-	22x15(mm)	Würth Elek	744 824 310	Yes	Yes
L4	1	Inductor	1mH, 100mA	-	1210	Taiyo Yuden	CBC3225T102KR	Yes	Yes
Ld3, Ld4	2	Shorted	-	-	-	-	-	-	-
L5	1	Inductor	1mH, 0.235A	-	7.6x7.6(mm)	Cooper Buss	DRA73-102-R	Yes	Yes
LF	1	Inductor	480μH, 200kHz	-	CC30/19	Precision	019-8202-00R	Yes	Yes
J1	1	CONN.	300V, 10A	-	3Pin, 3.5mm	Würth Elek	691214110003	Yes	Yes
J2, J3	2	BUSH	54A	-	-	Würth Elek	7461093	Yes	Yes
HS2, HS3	2	HEATSINK	-	-	10x10(mm)	Assmann WSW Comp	V2017B	Yes	Yes
PS1	1	PowerChip	12V, 1.44W	-	SO-8C	Power Integ	LNK304DG-TL	Yes	Yes
MOV1	1	MOV	504V, 3.5kA	-	Disc 10.5mm	Panasonic	ERZ-E08A561	Yes	Yes
U2	1	LLC Controller, 16-SOIC	-	-	-	ON Semiconductor	NCP1397BDR2G	No	Yes
U1	1	PFC Controller, CCM, 200kHz, SO-08	-	-	-	ON Semiconductor	NCP1654BD200R2G	No	Yes
U3,U4	2	Synchronous Rectifier Driver, SO-08	-	-	-	ON Semiconductor	NCP4304BDR2G	No	Yes
U5	1	Voltage Reference, SOT23	-	-	-	ON Semiconductor	NCP432BCSNT1G	No	Yes
U6	1	Optoisolator	5kV	-	4-SMD	Avargo	HCPL-817-50AE	Yes	Yes
U7	1	X2 CAP. DIS., SOIC-8	-	-	-	ON Semiconductor	NCP4810DR2G	No	Yes

F1	1	FUSE, SLOW	250V, 6.3A	-	-	Littlefuse Inc	3921630000	Yes	Yes
Q4, Q5	2	MOSFET	40V, 100A	-	-	Infineon	BSC017N04NS G	Yes	Yes
Transformer	1	Transformer	240W, 170kHz – 200kHz	-	-	Precision	019-7896-00R	Yes	Yes
FB1, FB2, FB3	3	Ferrite Bead	60Ω@100MHz, 500mA	-	0603	TDK	MMZ1608Y600B	Yes	Yes
REC	1	Rectifier Bridge	600V, 8A	-	D-72	Vishay	VS-KBPC806PBF	Yes	Yes
N/A	1	Thermal Pad	0.9W/m-K	-	18.42x13.21(mm)	Aavid Thermalloy	53-77-9G	Yes	Yes
N/A	1	Ferrite Core	47Ω@100MHz	-	4.2mm OD	Würth Elek	74270012	Yes	Yes

Note: Q2 and Q3 MUST be wrapped in ESD tape.