

Bill of Materials for the NCP1081REF12VC4GEVB Evaluation Board



Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer PartNumber	Substitution Allowed	Lead Free
C1, C5, C9, C13	4	Ceramic Capacitor (C0G/NP0), 250V	4.7n	±5%	0805 (2012M)	KEMET	C0805C472JAGACTU	No	Yes
C2, C3, C4, C7, C10, C11, C12, C19, C23	9	Ceramic Capacitor (X7R), 100V	2.2n	±10%	0603 (1608M)	TDK	C1608X7R2A222K080AA	No	Yes
C6, C36	2	Ceramic Capacitor (X7R), 3kV	1n	±10%	1812 (4532M)	Kemet	C1812C102KHRACTU C1812C102KHRACAUTO	No	Yes
C8, C17, C18, C26, C40, C46	6	Ceramic Capacitor (X7R), 100V	33n	±10%	0603 (1608M)	Kemet	C0603C333K1RACTU	No	Yes
C14, C15	2	Ceramic Capacitor (X7R), 2kV	1n	±10%	1206 (3216M)	Kemet	C1206C102KGRACTU	No	Yes
C16	1	Aluminum Capacitor, 63V, 284mArms	47μ	±20%	TH_2.5 6.3x11.5	Panasonic	EEUFR1J470	No	Yes
C20, C21	2	Ceramic Capacitor (X7R), 100V	1μ	±10%	1210 (3225M)	Kemet	C1210C105K1RACTU	No	Yes
C22, C27	2	Ceramic Capacitor (C0G/NP0), 250V	10n	±5%	1206 (3216M)	Kemet	C1206C103JAGACTU	No	Yes
C24	1	Ceramic Capacitor (X7R), 50V	47n	±10%	0603 (1608M)	Samsung	CL10B473KB8NNNC	Yes	Yes
C25	1	Ceramic Capacitor (X7R), 100V	470p	±10%	0603 (1608M)	Walsin	0603B471K101CT	No	Yes
C29, C38	2	Ceramic Capacitor (X7R), 16V	470n	±10%	0603 (1608M)	Walsin	0603B474K160CT	Yes	Yes
C30	1	Aluminum Capacitor, 16V, 2.9Arms	100μ	±20%	TH_2.5 6.3x9.8	Kemet	A758EK107M1CAAE018	No	Yes
C31, C32, C33, C41	4	Ceramic Capacitor (X5R), 25V	1μ	±10%	0603 (1608M)	Kemet	C0603C105K3PACTU	Yes	Yes
C34	1	Ceramic Capacitor (X7R), 25V	10μ	±10%	1210 (3225M)	Kemet	C1210C106K3RACTU C1210C106K3RACAUTO	No	Yes
C37	1	Ceramic Capacitor (C0G/NP0), 500V	100p	±5%	1206 (3216M)	Yageo	CC1206JRNPOBBN101	No	Yes

C42	1	Ceramic Capacitor (X7R), 50V	12n	±10%	0603 (1608M)	Kemet	C0603C123K5RACTU	No	Yes	
C43	1	Ceramic Capacitor (X7R), 25V	39n	±10%	0805 (2012M)	Yageo	CC0805KRX7R8BB393	No	Yes	
D3	1	LED, Yellow			0603 (1608M)	Kingbright	KPT-1608YC	Yes	Yes	
D4, D5, D6, D7, D10, D11, D12, D13, D20	9	Schottky Rectifier, 100V, 4A			SMA	onsemi	NRV TSA4100ET3G	No	Yes	
D8	1	Transient Voltage Suppressor			SMC	Littelfuse	SMCJ58A	Yes	Yes	
						STMicroelectronics	SM15T68A			
D9	1	LED, Green			0603 (1608M)	Kingbright	KP-1608CGCK	Yes	Yes	
D14	1	Transient Voltage Suppressor			SMB	Littelfuse	SMBJ75A	Yes	Yes	
D15	1	Ultra-Fast Recovery Rectifier, 200V			SMA	Vishay	ES1D-E3/5AT	No	Yes	
						onsemi	ES1D			
D16	1	Transient Voltage Suppressor			SMA	STMicroelectronics	SMAJ58A-TR	Yes	Yes	
D17	1	Schottky Rectifier, 60 V, 12 A			DFN-5 (5060M)	onsemi	NRVTS1260EMFST1G	No	Yes	
							NTS1260MFST1G			
D18	1	Schottky Rectifier, 150V+			SOD123FL	onsemi	MBR2H200SF	No	Yes	
							SS10200FL			
							SS10150FL			
D19	1	Schottky Diode, 20V+			SOD523-2	onsemi	NSR05T30XV2	No	Yes	
							NSR0520V2T5G			
D21	1	Transient Voltage Suppressor			SOD323-2	Littelfuse	SP4023-01FTG-C	No	Yes	
							AQ4023-01FTG-C			
D22	1	Switching Diode, 100V			SOD323-2	onsemi	BAS16HT1G	No	Yes	
J1	1	8P8C Modular Jack, Vertical Entry			TH_1.27/-8	Würth Elektronik	615008138021	Yes	Yes	
J2	1	8P8C Modular Jack, Tab Down, Shielded			TH_1.27/-8 S	Würth Elektronik	61500814221	Yes	Yes	
L1	1	Coupled Inductors	10μ	±20%	(7.9x6.4)x3.5	Coilcraft	LPD8035V-103MRC	No	Yes	
L2	1	Power Inductor	0.24μ		0806 (2016M)		Murata	DFE201610E-R24M=P2	Yes	Yes
							TDK	TFM201208BLE-R24MTCF		
							Würth Elektronik	74479276124		
L3	1	Power Inductor	3.3μ	±20%	3.3x1.5		TDK	VLS3015CX-3R3M-H	Yes	Yes
							Murata	LQH3NPN3R3MMEL		
L4	1	Power Bead	15n		0603 (1608M)	Würth Elektronik	7427922808	No	Yes	
P3	1	Vertical Pin Header, Single Row, 2 pins			TH_2.54-2	Würth Elektronik	61300211121	Yes	Yes	

Q1	1	NPN Transistor			SOT23-3	onsemi	BC846BLT1G	No	Yes
Q2	1	N-Channel MOSFET, 200V/125mΩ			WDFN-8 (5060M)	Infineon	BSC12DN20NS3GATMA1	No	Yes
R1, R2, R3, R4, R7, R8, R32	7	Resistor	75E	±1%	0603 (1608M)	Panasonic	ERJ3EKF75R0V	Yes	Yes
R5, R30, R36	3	Resistor	150K	±1%	0603 (1608M)	Walsin	WR06X1503FTL	Yes	Yes
R6	1	Resistor, 250mW	360K	±1%	1206 (3216M)	TT Electronics	WCR1206-360KFI	Yes	Yes
R9	1	Resistor	2K49	±1%	0603 (1608M)	Walsin	WR06X2491FTL	No	Yes
R10, R16, R20, R39	4	Resistor	1E	±5%	0603 (1608M)	Bourns	CR0603-J/-1R0ELF	Yes	Yes
R11, R19	2	Resistor, 660mW+	7K5	±1%	1206 (3216M)	Panasonic	ERJP08F7501V	No	Yes
				±5%			ERJP08J75012V		
				±1%		Vishay	CRCW12067K50FKEAHP		
R12, R34, R41	3	Resistor	5K1	±1%	0603 (1608M)	Bourns	CR0603-FX-5101ELF	Yes	Yes
R13, R14, R17, R18	4	Resistor, 250mW	10E	±1%	0603 (1608M)	Panasonic	ERJPA3F10R0V	No	Yes
R15	1	Resistor, 500mW	470E	±1%	1206 (3216M)	Walsin	WF12P4700FTL	No	Yes
						TE Connectivity	CRGP1206F470R		
R21	1	Resistor, 250mW	2E	±5%	0805 (2012M)	KOA	RK73B2ATTD2R0J	No	Yes
R22	1	Resistor	2K4	±1%	0603 (1608M)	Walsin	WR06X2401FTL	Yes	Yes
R23	1	Resistor, 333mW	18E	±5%	0805 (2012M)	TE Connectivity	CRGH0805J18R	No	Yes
R24	1	Resistor, 330mW	5E6	±5%	1206 (3216M)	Panasonic	ERJT08J5R6V	No	Yes
R25	1	Resistor, 250mW	22K6	±1%	1206 (3216M)	KOA	RK73H2BTDD2262F	No	Yes
R26	1	Resistor	30E9	±1%	0603 (1608M)	Walsin	WR06X30R9FTL	Yes	Yes
R27	1	Resistor, 1.25W	120E	±1%	2010 (5025M)	TE Connectivity	CRGP2010F120R	No	Yes
R29	1	Resistor	845E	±1%	0603 (1608M)	Walsin	WR06X8450FTL	No	Yes
R31	1	Resistor	44K2	±1%	0603 (1608M)	Walsin	WR06X4422FTL	Yes	Yes
R55, R56	2	Resistor	10E	±1%	0603 (1608M)	KOA	RK73H1JTTD10R0F	No	Yes

R33	1	Resistor	100k	±1%	0805 (2012M)	Walsin	WF08P1003FTL	Yes	Yes
R35	1	Resistor, 500mW	100m	±1%	1206 (3216M)	Susumi	RL1632R-R100-F	No	Yes
R37	1	Resistor, 333mW	75E	±5%	0805 (2012M)	TE Connectivity	CRGH0805J75R	No	Yes
R38	1	Resistor	0E		0603 (1608M)	Panasonic	ERJ3GEY0R00V	Yes	Yes
R42, R45	2	Resistor	510E	±1%	0603 (1608M)	Walsin	WR06X5100FTL	Yes	Yes
R43	1	Resistor	15K	±1%	0603 (1608M)	Walsin	WR06X1502FTL	Yes	Yes
R49	1	Resistor	3K92	±1%	0603 (1608M)	WALSIN	WR06X3921FTL	Yes	Yes
T1	1	PoE 100BASE-TX Transformer				Pulse	HX2326NL HX2326FNL	Yes	Yes
T2	1	Coupled Inductors	1.5μ	±20%	4.8x3.0	Coilcraft	LPD5030-152MRC	No	Yes
T3	1	Flyback Transformer			EFD20	Coilcraft Würth Elektronik NuFlux India	POE300F-12LD 7491194912 SM-00112	No	Yes
TP1	1	Test Point, Red			TH -1	Keystone	5010	Yes	Yes
TP2	1	Test Point, Black			TH -1	Keystone	5011	Yes	Yes
TP5, TP6, TP7, TP11, TP14, TP15, TP16	7	Turret Terminal			TH -1	Keystone	1502-2	Yes	Yes
TP12, TP17	2	Test Point			SM -1	Keystone	5019	Yes	Yes
U1	1	Optocoupler			PDIP-4 GW	Vishay	VO615A-X007T VO615A-X017T VO615A-X009T VO615A-1X019T VO615A-2X007T	Yes	Yes
U2	1	PoE-PD & Flyback Controller			TSSOP-20 E	onsemi	NCP1081	No	Yes
U3	1	Optocoupler			MFP-4	onsemi	FODM8801A FODM8801AV	No	Yes
U4	1	Shunt Voltage Reference	2.5	±0.5%	SOT23-3	onsemi	NCP431BISNT1G NCP431BVSNT1G	No	Yes
Shunt on P3	1	Jumper, grid 2.54mm, Black	0E			Fisher Elektronik Würth Elektronik	CAB 4 G S 60900213421	Yes	Yes

	4	Self-retaining spacer, length 4mm				Würth Elektronik	702915000	No	Yes
Tape on T3	45.3mm	Copper Tape, width 8mm				Würth Elektronik	3003308A	Yes	Yes