



Bill of Materials for the NCL30001LEDGEVB Evaluation Board

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
D5, D10	2	Diode		-	SMA	ON Semiconductor	MRA4007T	No	YES
D1, D2, D3, D4	4	Diode		-	axial lead	ON Semiconductor	1N5406	No	YES
D6, D7	2	Ultrafast diode		-	SMB	ON Semiconductor	MURS160	No	YES
D9, 11, 12, 13	4	Signal diode		-	SOD123	ON Semiconductor	MMSD4148A	No	YES
D8	1	UFR diode		-	TO-220ABCT	ON Semiconductor	MURH860CTG	No	YES
Z1	1	TVS	Input transient option	-	axial lead			Yes	YES
Z3, 4, 5	3	Zener diode	15V	-	SOD123	ON Semiconductor	MMSZ5245B	No	YES
Z2	-	Zener diode	Not Used	-	SOD123	ON Semiconductor	-	No	YES
Q5	1	Mosfet	40V, 100 mA	-	SOT23	ON Semiconductor	2N7002KT1G	No	YES
Q7	1	Mosfet	100V, A	-	DPak4	ON Semiconductor	NTD12N10T4G	No	YES
Q1	1	Mosfet	11A, 800V	-	TO-220	Infineon	SPP11N80C3	No	YES
Q2, Q3, Q6	3	BJT	60V, 500 mA	-	SOT23	ON Semiconductor	MMBT406LT1G	No	YES
Q4	1	BJT	100V, 4A	-	DPak4	ON Semiconductor	MJD243G	No	YES
U1	1	PFC controller		-	SOIC16	ON Semiconductor	NCL30001	No	YES
U2	1	Optocoupler		-	4 pin SMD	Vishay	H11A817 or SFH6156A-4	Yes	YES
U3	1	Dual amp + zener		-	SOIC-8	ON Semiconductor	NCS1002	No	YES
C1, C2	2	X caps	0.47 uF, 277 Vac	±20%	LS = 15mm	Evox Rifa/Kemet or EPCOS	PHE840MB6470MB16R17	Yes	YES
C27	1	Y2 cap	2.2 nF, 1kV	±20%	LS = 10 mm	Evox Rifa/Kemet	PME271Y422M	Yes	YES
C3	1	Polyprop. Film	0.22uF (630V)	±5%	LS =24 mm	Vishay	2222 383 20224	Yes (must be polyprop)	YES
C7	1	Disc cap	68 to 100 nF, 400V	±10%	LS = 10 mm	TDK	FK22X7R2J104K	high quality ceramic	YES
C8, C15, C16, C25, C26, C29, C33, C34, C35	9	ceramic cap	0.1 uF, 50V	±10%	1206	TDK	C3216X7R2A104K	Yes	YES
C23, C24	2	ceramic cap	0.1 uF, 100V		1206/1210	TDK	C3216X7R2A104K	Yes	YES
C28, C30	2	ceramic cap	1.0 uF, 25V	±10%	1206	TDK	C3216X7R1H105K	Yes	YES
C19	1	ceramic disc cap	1 nF, 1 kV	±10%	LS = 8 mm	TDK	CK45-B3AD102KYNN	Yes	YES
C12	1	ceramic cap	470 pF, 50V	5%	1206	Vishay	VJ1206A471JXACW1BC	Yes	YES
C9	1	ceramic cap	680 pF, 50V	5%	1206	Kemet	C1206C681K5GACTU	Yes	YES
C10, C18, C31	3	ceramic cap	1 nF, 100V	±10%	1206	Kemet	C1206C102K1RACTU	Yes	YES
C14, C17, C32	3	ceramic cap	10 nF, 50V	±5%	1206	TDK	C3216COG2A103J	Yes	YES
C13	1	ceramic cap	33 nF, 50V	±5%	1206	TDK	C3216COG1H333J	Yes	YES
C5	1	electrolytic cap	100 uF, 35V	±20%	LS = 2.5 mm	UCC	ESMG350ELL101MF11D	Yes	YES
C11	1	electrolytic cap	4.7 uF, 25V	±20%	LS = 2.5 mm	UCC	ESMG250ELL4R7ME11D	Yes	YES
C6	1	electrolytic cap	220 uF, 50V	±20%	LS = 5mm	UCC	ESMG500ELL221MJC5S	Yes	YES
C20, 21, 22	3	electrolytic cap	1000 uF, 63V	±20%	LS = 8 mm	Nichicon	647-UVR1J102MHD	Recommended value	YES
C4	1	electrolytic cap	22 uF, 450V	±20%	LS = 5 mm	Nichicon	647-UVY2W220MHD	Yes	YES
R4	1	0.5W resistor	2.2K	±5%	axial lead	Vishay	NFR25H0002201JR500	Yes	YES
R1	1	0.5W resistor	1M, 0.5W	± 1%	axial lead	Vishay	CMF601M0000FHEK	Yes	YES
R8	1	0.5W resistor	2K, 0.5W	±1%	axial lead	Vishay	CMF552K0000FHEB	Yes	YES
R2	1	0.5W resistor	560K	±5%	axial lead	Vishay	HVR3700005603JR500	Yes	YES
R27	1	0.5W resistor	4.7K - 5.0K	±5%	1210	Vishay	CRCW12104K70JNEA	Yes	YES
R24	1	0.5W resistor	100 ohms	±1%	axial lead	Vishay	CMF50100R00FHEB	Yes	YES
R20, R26	2	0.5W resistor	0.1 ohms	±1%	LS = 18 mm	Ohmite	WNCR10FET	Yes	YES
R3	1	3 or 5W resistor	36K to 39K	±5%	LS = 30 mm	Ohmite	PR03000203602JAC00	Yes	YES

R23	1	0.25W resistor	4.7 ohms	1%	1206	Vishay/Dale	CRCW12064R75F	Yes	YES
R5	1	0.25W resistor	220 ohms	1%	1206	Vishay/Dale	CRCW1206220RF	Yes	YES
R38	1	0.25W resistor	100 ohms	1%	1206	Vishay/Dale	CRCW1206100RF	Yes	YES
R21, 41, 42, 43	4	0.25W resistor	10 ohms	1%	1206	Vishay/Dale	CRCW120610R0F	Yes	YES
R15, R28	2	0.25W resistor	2.2K	1%	1206	Vishay/Dale	CRCW12062211F	Yes	YES
R31, R36	2	0.25W resistor	2.7K	1%	1206	Vishay/Dale	CRCW12062741F	Yes	YES
R29,R30	2	0.25W resistor	43.2K	1%	1206	Vishay/Dale	CRCW12064322F	Yes	YES
R25	1	0.25W resistor	20K	1%	1206	Vishay/Dale	CRCW12062002F	Yes	YES
R32	1	0.25W resistor	68K	1%	1206	Vishay/Dale	CRCW12066812F	Yes	YES
R33	1	0.25W resistor	6.2K	1%	1206	Vishay/Dale	CRCW12066191F	Yes	YES
R37	1	0.25W resistor	5.1K	1%	1206	Vishay/Dale	CRCW12065111F	Yes	YES
R34	1	0.25W resistor	82K	1%	1206	Vishay/Dale	CRCW12068252F	Yes	YES
R35	1	0.25W resistor	3.9K	1%	1206	Vishay/Dale	CRCW12063921F	Yes	YES
R14, 22, 39, 40,44	5	0.25W resistor	10K	1%	1206	Vishay/Dale	CRCW12061002F	Yes	YES
R13	1	0.25W resistor	7.32K	1%	1206	Vishay/Dale	CRCW12064322F	Yes	YES
R9, R12	2	0.25W resistor	30.1K	1%	1206	Vishay/Dale	CRCW12063012F	Yes	YES
R17	1	0.25W resistor	56K	1%	1206	Vishay/Dale	CRCW12065622F	Yes	YES
R18	1	0.25W resistor	49.9K	1%	1206	Vishay/Dale	CRCW12064992F	Yes	YES
R19	1	0.25W resistor	76.8K	1%	1206	Vishay/Dale	CRCW12067682F	Yes	YES
R16	1	0.25W resistor	100K	1%	1206	Vishay/Dale	CRCW12061003F	Yes	YES
R10	1	0.25W resistor	332K	1%	1206	Vishay/Dale	CRCW12063323F	Yes	YES
R6, 7, 11	3	0.25W resistor	365K	1%	1206	Vishay/Dale	CRCW12063653F	Yes	YES
F1	1	Fuse	2.5A, 250Vac	-	TR-5	Littlefuse	37212500411	Yes	YES
L1	1	EMI inductor		-	E/E core	Coilcraft	BU10-1012R2B	Yes	YES
L2	1	EMI inductor		-	Toroid	Coilcraft	P3221-AL	Yes	YES
L3	1	3.3 uH choke	3.3 uH, 5A	20%	LS = 0.2"	Coilcraft	RFB0807-3R3L	Yes	YES
T1	1	Flyback xfmr	55V, 90W CCM	-	custom	WE-Midcom (Würth Electronics)	750311267, Rev 01	No	YES
J1, J2, J3	3	I/O connectors		-	LS = 5 mm	Weidmuller	1716020000	Yes	YES
(for Q1, D8)	2	Heatsink Q1, D8		-	LS = 25.4 mm	Aavid	531102B02500G (or similar)	Yes	YES
HD1	1	Header	CONN HEADER 2POS	-	0.100"	Molex	90120-0122	Yes	YES
JMP1	1	Shorting Jumper	0.1" Two Position Shorting Jumper	-	0.100"	Sullins Connector Solutions	SPC02SYAN	Yes	YES

Optional DIM Daughter Card BOM

Designator	Qty	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
D1, D2, D3	3	Signal diode		-	SOD123	ON Semiconductor	MMSD4148A	No	Yes
Q1	1	BJT	400mA, 40V	-	SOT23	ON Semiconductor	MMBT2222A	No	Yes
Q2	1	Mosfet	40V, 100 mA	-	SOT23	ON Semiconductor	2N7002KT1G	No	Yes
U1	1	Timer IC	—	-	SOIC8	ON Semiconductor	MC1455D	No	Yes
U2	1	Quad Opamp	—	-	SOIC14	ON Semiconductor	LM324DG	No	Yes
C4	1	ceramic cap	1.0 uF, 25V	10%	1206	TDK	C3216X7R1H105K	Yes	Yes
C1	1	ceramic cap	68 nF, 50V	10%	1206	Vishay	VJ1206Y683KXAA	Yes	Yes
C2, 3, 7, 9	4	ceramic cap	0.1 uF, 50V	10%	1206	TDK	C3216X7R2A104K	Yes	Yes
C6, C8	2	ceramic cap	10 nF, 50V	5%	1206	TDK	C3216COG2A103J	Yes	Yes
C5	1	ceramic cap	1 nF, 100V	10%	1206	Kemet	C1206C102K1RACTU	Yes	Yes
R1	1	potentiometer	20K, 15 Turn	10%	Thru hole	Vishay	T18203KT10	Yes	Yes
R9	1	potentiometer	100K, 15 turn	10%	Thru hole	Vishay	T18104KT10	Yes	Yes

R4, 11, 13, 16	4	0.25W resistor	10K	1%	1206	Vishay/Dale	CRCW12061002F	Yes	Yes
R2	1	0.25W resistor	150K	1%	1206	Vishay/Dale	CRCW12061503F	Yes	Yes
R3	1	0.25W resistor	20K	1%	1206	Vishay/Dale	CRCW12062002F	Yes	Yes
R5	1	0.25W resistor	4.3K	1%	1206	Vishay/Dale	CRCW12064321F	Yes	Yes
R6	1	0.25W resistor	5K	1%	1206	Vishay/Dale	CRCW12064991F	Yes	Yes
R7	1	0.25W resistor	1.0K	1%	1206	Vishay/Dale	CRCW12061001F	Yes	Yes
R8	1	0.25W resistor	15K	1%	1206	Vishay/Dale	CRCW12061502F	Yes	Yes
R10	1	0.25W resistor	11K	1%	1206	Vishay/Dale	CRCW12061102F	Yes	Yes
R12	1	0.25W resistor	30K	1%	1206	Vishay/Dale	CRCW12063012F	Yes	Yes
R15	1	0.25W resistor	10 ohms	1%	1206	Vishay/Dale	CRCW120610R0F	Yes	Yes
R14	1	0.25W resistor	Zero ohms	-	1206	Vishay/Dale	CRCW12060000Z	Yes	Yes
TH1	1	PTC Thermistor	Not Used	-	Thru hole	-	-	Yes	Yes
CON 1	1	right angle pins	0.1" 6 position	-	Thru hole	Molex or Tyco	Rt angle 6 pin connector, 0.1" pitch	Yes	Yes