

Bill of Materials for the NCV12700WIDEVINGEV B Evaluation Board

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
C1, C2, C3, C4, C35, C36	6	Capacitor, Ceramic, X7T	1 uF, 250 V	20%	SMD, 1812_TDK	TDK	C4532X7T2E105M250KA	Yes	Yes
C5	1	Capacitor, Ceramic, X7R	2.2 uF, 50 V	10%	SMD, 1206_AM	Samsung	CL31B225KBHNNNE	Yes	Yes
C6, C7	2	Capacitor, Ceramic, X7R	10 nF, 50 V	10%	SMD, 0603_AM	Yageo	CC0603KRX7R9BB103	Yes	Yes
C8	1	Capacitor, Ceramic, X7R	22 nF, 50 V	10%	SMD, 0603_AM	Yageo	CC0603KRX7R9BB223	Yes	Yes
C9	1	Capacitor, Ceramic, X7R	1 nF, 50 V	10%	SMD, 0603_AM	Yageo	CC0603KRX7R9BB102	Yes	Yes
C10	1	Capacitor, Ceramic, C0G	100 pF, 50 V	5%	SMD, 0603_AM	Yageo	CC0603JRNPO9BN101	Yes	Yes
C11	1	Capacitor, Ceramic, X7R	4.7 uF, 50 V	10%	SMD, 1206_AM	Murata	GRM31CR171H475KA12L	Yes	Yes
C12	1	Capacitor, Ceramic, X7R	6800 pF, 630 V	10%	SMD, 0805_AM	Kemet	C0805C682KBRACU	Yes	Yes
C13	1	Capacitor, Ceramic, X7R	6.8 nF, 50 V	10%	SMD, 0603_AM	Yageo	CC0603KRX7R9BB682	Yes	Yes
C14, C15	2	Capacitor, Ceramic, X7R	47 uF, 16 V	10%	TBD	Panasonic	EEF-CX1C470R	Yes	Yes
C16	1	Capacitor, Ceramic, X7R	22 uF, 25 V	10%	SMD, 1210_AM	Murata	GRM32ER71E226KE15L	Yes	Yes
C17 - C23	7	REF DES NOT USED	NOT USED						Yes
C24	1	Capacitor, Ceramic, X7R	680p, 250 V	5%	SMD_0603_AM	Kemet	C0603C681JAGACAU0	Yes	Yes
C25, C26, C27, C28	4	DNP	DNP						Yes
C29, C33	2	Capacitor, Ceramic, X7R	2.2 uF, 50 V	10%	SMD, 0603_AM	Murata	GRM188R61H225KE11D	Yes	Yes
C30	1	Capacitor, Ceramic, X7T	0.1 uF, 250 V	10%	SMD, 0805_AM	TDK	C2012X7T2E104K125AA	Yes	Yes
C31, C32, C34	3	REF DES NOT USED	NOT USED						Yes
CY1	1	Capacitor, Ceramic, X7R	1 nF, 250 Vac	10%	SMD, 1808_JD	Johanson Dielectric	502R29W102KV3E-X1Y2-SC	Yes	Yes
D1, D4, D5	3	Diode, Switching	200 V, 0.2 A		SMD, SOD-323_rev3	ON Semiconductor	BAS20HT1G	No	Yes
D2, D10	2	DNP	DNP					No	Yes
D3	1	Diode, Fast recovery	600 V, 1 A		SMD, SMA_2	ON Semiconductor	MURA160T3G	No	Yes
D6	1	Diode, Zener	11 V, 300 mW		SMD, SOD-323_rev4	ON Semiconductor	MM3Z11VT1G	No	Yes
D7, D9	2	REF DES NOT USED	NOT USED						Yes
D8	1	Diode, Zener	15 V, 300 mW		SMD, SOD-323_rev3	ON Semiconductor	MM3Z15VT1G	No	Yes
D11	1	Diode, Switching	250 V, 0.2 A, Dual		SMD, SC-88A_2	ON Semiconductor	BAS21DW5T1G	No	Yes
D12	1	Diode, Zener	4.3 V, 300 mW		SMD, SOD-323_rev3	ON Semiconductor	MM3Z4V3T1G	No	Yes
J1, J2	2	Terminal Block, 2 pos, in-line	300 V, 10 A		PC_2POS_3.5MM	Phoenix Contact	1984617	Yes	Yes
L1	1	Power Inductor, Shielded	10 uH, 2.25 A	20%	IHLP_2020	Vishay	IHLP2020CZER100M1	Yes	Yes

M1	1	Transistor, MOSFET, Power	600 V, 12 A		4VSON / Power88	Infineon	IPL60R199CP	No	Yes
M2	1	Transistor, MOSFET, Power	120 V, 32 A		SMD, DFN5_5x6	Fairchild	FDMS86202	No	Yes
P1 - P5	5	Printed Circuit Pin	8 A		TH, MM_D1.02mm	Mill-Max	1179-0-00-15-00-00-33-0	Yes	Yes
Q1	1	Transistor, NPN, General Purpose	40 V, 0.6 A		SOT-23	ON Semiconductor	MMBT2222ALT1G	No	Yes
R1, R1A	2	Resistor, 1/4 W	374 kΩ	1%	SMD, 1206_AM	Stackpole	RMCF1206FT374K	Yes	Yes
R2, R7, R13, R14, R17, R25, R32	7	Resistor 1/10 W	10 kΩ	1%	SMD, 0603_AM	Stackpole	RMCF0603FT10K0	Yes	Yes

R3	1	Resistor, 1/8 W	4.99 $\Omega$	1%	SMD, 0805_AM	Stackpole	RMCF0805FT4R99	Yes	Yes
R4	1	Resistor, 1/10 W	100 k $\Omega$	1%	SMD, 0603_AM	Stackpole	RMCF0603FT100K	Yes	Yes
R5, R11, R15	3	Resistor, 1/10 W	10 $\Omega$	1%	SMD, 0603_AM	Stackpole	RMCF0603FT10R0	Yes	Yes
R6, R33	2	Resistor, 1/10 W	2.2 $\Omega$	1%	SMD, 0603_AM	Stackpole	RMCF0603FT2R20	Yes	Yes
R8, R8A	2	Resistor, 1/2 W	240 m $\Omega$	1%	SMD, 0805 Wide	Rohm	LTR10EVHFLR240	No	Yes
R9	1	Resistor, 1/10 W	475	1%	SMD, 0603_AM	Stackpole	RMCF0603FT475R	Yes	Yes
R10	1	Resistor, 1/4 W	348 k $\Omega$	1%	SMD, 1206_AM	Stackpole	RMCF1206FT348K	Yes	Yes
R12	1	Resistor, 1/10 W	38.3 k $\Omega$	1%	SMD, 0603_AM	Stackpole	RMCF0603FT38K3	Yes	Yes
R16	1	Resistor, 1/10 W	1.4 k $\Omega$	1%	SMD, 0603_AM	Stackpole	RMCF0603FT1K40	Yes	Yes
R18, R18A	2	Resistor, 1/4 W	20 $\Omega$	1%	SMD, 1206_AM	Stackpole	RMCF1206FT20R0	Yes	Yes
R19, R20	2	NOT USED	NOT USED					No	Yes
R21, R23, R24, R27, R29	5	DNP	DNP					No	Yes
R22, R26, R28	3	Resistor, 1/10 W	0 $\Omega$	1%	SMD, 0603_AM	Stackpole	RMCF0603ZTOR00	Yes	Yes
R30	1	Resistor, 1/10 W	4.99 k $\Omega$	1%	SMD, 1206_AM	Stackpole	RMCF1206FT4K99	Yes	Yes
R31	1	Resistor, 1/4 W	0 $\Omega$	1%	SMD, 1206_AM	Stackpole	RMCF1206ZTOR00	Yes	Yes
R34	1	Resistor, 1/10 W	20 k $\Omega$	1%	SMD, 0603_AM	Stackpole	RMCF0603FT20K0	Yes	Yes
R35	1	Resistor, 1/10 W	2.87 k $\Omega$	1%	SMD, 0603_AM	Stackpole	RMCF0603FT2K87	Yes	Yes
RT1	1	NTC Thermistor	100 k $\Omega$	5%	SMD, 0805_AM	Murata	NCP21WF104J03RA	Yes	Yes
TP1 - 5, 8 - 11	9	Testpoint, Red, 40 mil			MM_D1.02 MM	Keystone Electronics	5000	Yes	Yes
TX	1	Flyback Transformer	32 $\mu$ H, 4.75 A, Np:Ns = 3:1		SMD, RM6-8P	Würth Electronics	750316764	No	Yes
U1	1	PWM Controller			SMD, WQFN-10, 3X4 mm	ON Semiconductor	NCP12700BMTTXG	No	Yes
U2	1	Optocoupler	50 mA, 80-160%		SMD, SSOP-4	Fairchild	HMHA2801A	No	Yes
U3	1	Shunt Regulator	36 V, 100 mA		SOT-23	ON Semiconductor	NCP431AVSNT1G	No	Yes
U4	1	SR Gate Driver			SMD, SOIC8	ON Semiconductor	NCP4308DDR2G	No	Yes