



## Bill of Materials for the NCP1337ADAPGEVB Evaluation Board

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
C1	1	Ceramic Disc Capacitor	2.2 nF, Y1	20%	Disc	Panasonic	ECK-ANA222ME	Yes	Yes
C2,C3	2	Electrolytic Capacitor	2200 $\mu$ F, 16 V	20%	Radial	United Chemi-Con	ESMG160ELL222MK20S	Yes	Yes
C4	1	Electrolytic Capacitor	470 $\mu$ F, 16 V	20%	Radial	United Chemi-Con	ESMG160ELL471MHB5D	Yes	Yes
C5	1	Ceramic Disc Capacitor	4.7 nF, 1 kV	10%	Disc	Panasonic	ECK-A3A472KBP	Yes	Yes
C6	1	Leaded Film Capacitor	0.22 $\mu$ F, X2	20%	17.5 x 8.0 mm	Panasonic	ECQU2A224ML	Yes	Yes
C7	1	Electrolytic Capacitor	150 $\mu$ F, 400 V	20%	Radial	United Chemi-Con	EKXG401ELL151MM40S	Yes	Yes
C8	1	Ceramic Disc Capacitor	10 nF, 1 kV	10%	Disc	Vishay	562R10TSS10	Yes	Yes
C9	1	Ceramic Disc Capacitor	2.2 nF, 100 V	10%	Disc	Vishay	D222K25Y5PH63L6R	Yes	Yes
C10	1	SMT Capacitor	1 nF, 50 V	10%	0805	Vishay	VJ0805Y102KXAMT	Yes	Yes
C11,C13, C14,C16	4	SMT Capacitor	0.1 $\mu$ F, 50 V	10%	805	Vishay	VJ0805Y104KXAAT	Yes	Yes
C12	1	Electrolytic Capacitor	47 $\mu$ F, 25 V	20%	Radial	Panasonic	EEUFM1E470	Yes	Yes
C15	1	SMT Capacitor	100 pF, 50 V	10%	0805	Vishay	VJ0805A101KXAAT	Yes	Yes
D1	1	Bridge Rectifier	6 A, 800 V	-	22 x 3.5 mm	Diodes Incorporated	GBU608	Yes	Yes
D2	1	Schottky Rectifier	1 A, 60 V	-	Axial	ON Semiconductor	MBR160G	No	Yes
D3	1	Fast-Recovery Rectifier	1 A, 600 V	-	Axial	ON Semiconductor	1N4937	No	Yes
D4,D7,D8	3	Switching Diode	100 V	-	SOD-123	ON Semiconductor	MMSD4148	No	Yes
D5	1	Zener Diode	500 mW, 13 V	-	SOD-123	ON Semiconductor	MMSZ13T1G	No	Yes
D6	1	Zener Diode	500 mW, 15 V	-	SOD-123	ON Semiconductor	MMSZ15T1G	No	Yes
F1	1	Fuse	3 A, 250 VAC	-	Axial	Littlefuse	0675003	Yes	Yes
L1	1	High Current Inductor	1.8 $\mu$ H, 5 A 2.5A	-	Radial	Click	LC6-494	Yes	Yes
L2	1	EMI Inductor	75 $\mu$ H 5A	-	Torroidal	Click	LC10-341	Yes	Yes
L3	1	EMI Inductor	150 $\mu$ H 1A 1.6A	-	Torroidal	Click	LC10-342	Yes	Yes
L4	1	EMI Inductor	20 mH 1A	-	Torroidal	Click	LC20-220	Yes	Yes
Q1	1	Power MOSFET	75 A, 60 V	-	TO-220	ON Semiconductor	NTP75N06G	No	Yes
Q2,Q5,Q6, Q8	3	General Purpose NPN Transistor	NA	-	SOT-23	ON Semiconductor	MMBT3904LT1G	No	Yes
Q3	1	SMPS MOSFET, see note 2	8.5 A, 650 V	-	TO-220AB	International Rectifier	IRFB9N65APBF	Yes	Yes
Q4,Q7	2	General Purpose PNP Transistor	NA	-	SOT-23	ON Semiconductor	MMBT3906LT1G	No	Yes
R1	1	Current Limitor	5 $\Omega$	15%	Disc	EPCOS	B57236S509L2	Yes	Yes
R2,R6,R10,R19	4	Resistor	1 M $\Omega$	5%	0805	Vishay	CRCW08051M00FNEA	Yes	Yes
R3	1	Varistor	470V1mA	10%	Disc	Littlefuse	V22CH8T	Yes	Yes
R4	1	Resistor	47 k $\Omega$ , 1 W	1%	Radial	Vishay	CPF247K000JKE14	Yes	Yes
R5	1	Resistor	4.7 $\Omega$	5%	0805	Vishay	CRCW08054R70JNEA	Yes	Yes
R7,R15,R18	3	Resistor	2 k $\Omega$	5%	0805	Vishay	CRCW08052K00JNEA	Yes	Yes
R8,R22,R26,R31	4	Resistor	5.1 k $\Omega$	5%	0805	Vishay	CRCW08055K10JNEA	Yes	Yes
R9,R20,R29,R32	4	Resistor	10 k $\Omega$	5%	0805	Vishay	CRCW080510K0JNEA	Yes	Yes
R23,R11	2	Resistor	10 $\Omega$	5%	0805	Vishay	CRCW080510K0JNEA	Yes	Yes
R12,R14, R16,R24-25	5	Resistor	1 k $\Omega$	5%	0805	Vishay	CRCW080510R0JNEA	Yes	Yes
R13	1	Resistor	15 k $\Omega$	5%	0805	Vishay	CRCW08051K00JNEA	Yes	Yes
R17	1	Resistor	20 k $\Omega$	5%	0805	Vishay	CRCW080520K0JNEA	Yes	Yes
R21	1	Resistor	27 $\Omega$	5%	0805	Vishay	CRCW080520K0JNEA	Yes	Yes
R27	1	Resistor	2.4 k $\Omega$	5%	0805	Vishay	CRCW080527R0JNEA	Yes	Yes
R28	1	Resistor	9.1 k $\Omega$	5%	0805	Vishay	CRCW08059K10JNEA	Yes	Yes
R30	1	Resistor, see note	0.18 $\Omega$ , 1 W	5%	Axial	Vishay	WK202070C1807JD5	Yes	Yes

T1	1	Custom Power Switchmode Transformer	Lp(W1+W4)=600uH +/- 7% @ 10KHz 1V	-	32.2 x 41.9mm	Precision Inc.	019-6671-00R	Yes	Yes
T2	1	Current Sensing Transformer	1:100, 5A	-	-	Click	LC10-338	Yes	Yes
U1,U2	2	High Density Photocoupler	NA	-	DIP4	Sharp	PC817X0J000F	Yes	Yes
U3	1	PWM Contoller	NA	-	SOIC (8 - pin # 7)	ON Semiconductor	NCP1337DR2G	No	Yes
U4	1	Adjustable Shunt Regulator	1-100 mA, 2.5-36 V	1%	TO-92	ON Semiconductor	TL431ACLPG	No	Yes
Various	9	Jumper Wires	-	-	Through Hole	-	-	No	Yes
Various	4	Insulator Pads	-	-	-	Berquest	SP980AC-34	No	Yes
Various	2	Connector Post for Output	-	-	Through Hole	Vector	K24C/M	Yes	Yes
-	1	Heatsink for D1	-	-	-	Machine Shop	-	No	Yes
-	1	Heatsink for Q1	-	-	-	Machine Shop	-	No	Yes
Heatsink	2	Nylon Screws	4-40	-	-	-	-	No	Yes
Heatsink	2	Washers	4-40	-	-	-	-	No	Yes
Heatsink	2	Nuts	4-40	-	-	-	-	No	Yes
+12V, RTN	2	Output pins	-	-	Through Hole	Various	Various	Yes	Yes

**Note:** Current Sence Resistor R30 cannot be of type wire-wound.

**Note2:** Q3 MUST be fully insulated from heatsink. Use FULLPAK package if available.