



## Bill of Materials for the NCP81239REFGEVB Evaluation Board

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free	
U1	1	USB POWER DELIVERY 4-SWITCH BUCK/BOOST			32QFN	ON Semiconductor	NCP81239	No	Yes	
Q1,2,4	3	MOSFET N-CH 30V 38A U8FL	14	mΩ	u8-FL	ON Semiconductor	NTTFS4C13N	No	Yes	
Q3	1	MOSFET N-CH 30V 65A U8FL	6.1	mΩ	u8-FL	ON Semiconductor	NTTFS4C06N	No	Yes	
L1	1	4.2UH SHIELDED WIREWOUND INDUCTOR 11A 7.1 mOhm	4.2	μH	20%	10x10x5mm	Würth Elektronik	744 325 420	No	Yes
C23,24,25,37,42	5	CAP CER 10UF 35V X5R 0805	10	μF	10%	0805	muRata	GRM21BR6YA106KE43L	Yes	Yes
C35	1	CAP ALUM POLY 100UF 20% 35V T/H	100	μF	20%	RTH 8mm	Nichicon	RL81V101MDN1KX	Yes	Yes
C21,22,41	3	CAP CER 10UF 35V X5R 0805	10	μF	10%	0805	muRata	GRM21BR6YA106KE43L	Yes	Yes
C34	1	CAP ALUM POLY 100UF 20% 35V T/H	100	μF	20%	RTH 8mm	Nichicon	RL81V101MDN1KX	Yes	Yes
FB1	1	FERRITE BEAD 60 OHM 1806 1LN	60	Ω		1806	Würth Elektronik	742 792 410	Yes	Yes
R6,7	2	RES SMD 0.0OHM JUMPER 1/16W 0402	0	Ω	Jumper	0402	Vishay Dale	CRCW04020000Z0ED	Yes	Yes
C12,13	2	CAP CER 0.1UF 50V X5R 0402	0.1	μF	10%	0402	muRata	GRM155R61H104KE19D	Yes	Yes
C15,16	2	CAP CER 4.7UF 6.3V X5R 0402	4.7	μF	20%	0402	Würth Elektronik	885 012 105 008	Yes	Yes
R9	1	RES SMD 1 OHM 1% 1/16W 0402	1	Ω	1%	0402	Vishay Dale	CRCW04021R00FKED	Yes	Yes
D1,2	2	DIODE SCHOTTKY 40V 250MA SOD323			SOD-323	ON Semiconductor	NSR0240H	No	Yes	
R3,18	2	RES SMD 4.02 OHM 1% 1/16W 0402	4.02	Ω	1%	0402	Vishay Dale	CRCW04024R02FKED	Yes	Yes
R4,19	2	RES SMD 0.0OHM JUMPER 1/16W 0402	0	Ω	Jumper	0402	Vishay Dale	CRCW04020000Z0ED	Yes	Yes
C10	1	CAP CER 10PF 50V NP0 0402	10	pF	5%	0402	Würth Elektronik	885 012 005 055	Yes	Yes
C11	1	CAP CER 1500PF 50V X7R 0402	1500	pF	10%	0402	Würth Elektronik	885 012 205 062	Yes	Yes
R5	1	RES SMD 20.5K OHM 1% 1/16W 0402	20.5	kΩ	1%	0402	Vishay Dale	CRCW040220K5FKED	Yes	Yes
R10,11	2	RES SMD 0.005 OHM 1% 1/2W 1206	5	mΩ	1%	1206	Vishay Dale	WSL12065L000FEA18	Yes	Yes
C43,44	2	CAP CER 10000PF 50V X7R 0402	10	nF	10%	0402	Würth Elektronik	885 012 205 067	Yes	Yes
R20,21,22,23	4	RES SMD 10 OHM 1% 1/16W 0402	10	Ω	1%	0402	Vishay Dale	CRCW040210R0FKED	Yes	Yes
FB2	1	FERRITE BEAD 56 OHM 1612 1LN	56	Ω		1612	Würth Elektronik	742 792 235 60	Yes	Yes
C36,51,52	3	CAP CER 4.7UF 50V X5R 0805	4.7	μF	10%	0805	muRata	GRM21BR61H475KE51L	Yes	Yes
D3	1	TVS DIODE 26VWM 42.1VC SMA			SMA	LittleFuse	1SMA26AT3G	No	Yes	
Q5	1	DUAL MOSFET 2N-CH 20V 0.22A SOT-963			SOT-963	ON Semiconductor	NTUD3170NZ	No	Yes	
U3	1	IC MCU 32BIT 32KB FLASH 24QFN			24QFN	Cypress Semiconductor	CYPD2134-24LQXI	No	Yes	
C28,29	2	CAP CER 1UF 6.3V X5R 0402	1	μF	20%	0402	Würth Elektronik	885 012 105 006	Yes	Yes
R15	1	RES SMD 4.75K OHM 1% 1/16W 0402	4.75	kΩ	1%	0402	Vishay Dale	CRCW04024K75FKED	Yes	Yes
C32,33	2	CAP CER 330PF 25V X7R 0402	330	pF	10%	0402	Würth Elektronik	885 012 205 041	Yes	Yes
C31	1	CAP CER 0.1UF 16V X7R 0402	0.1	μF	10%	0402	Würth Elektronik	885 012 205 037	Yes	Yes
R24,25	0			DNP		0402				
C45,46	0			DNP		0402	DNP			
R12,13,14	3	RES SMD 2.2K OHM 1% 1/16W 0402	2.2	kΩ	1%	0402	Vishay Dale	CRCW04022K20FKED	Yes	Yes
J12	1	CONN HEADER 3 POS 2.54			-		Würth Elektronik	613 003 111 21	Yes	Yes
J3	1	CONN HEADER 4 POS 2.54			-		Würth Elektronik	613 004 111 21	Yes	Yes
J4	1	CONN HEADER 3 POS 2.54			-		Würth Elektronik	613 002 111 21	Yes	Yes
J5	1	USB TYPE-C RECEPTACLE			-		Würth Elektronik	632 723 300 011	Yes	Yes
R28	1	RES SMD 499K OHM 1% 1/16W 0402	499	kΩ	1%	0402	Vishay Dale	CRCW0402499KFKED	Yes	Yes
R26,27	2	RES SMD 10 OHM 1% 1/16W 0402	10	Ω	1%	0402	Vishay Dale	CRCW040210R0FKED	Yes	Yes
R29	1	RES SMD 19.1K OHM 1% 1/16W 0402	19.1	kΩ	1%	0402	Vishay Dale	CRCW040219K1FKED	Yes	Yes
D4,5	2	TVS DIODE 5.3VWM SOD-323			SOD-323	ON Semiconductor	ESD7371HT1G	No	Yes	
R34	1	RES SMD 90.9K OHM 1% 1/16W 0402	90.9	kΩ	1%	0402	Vishay Dale	CRCW040290K9FKED	Yes	Yes
R40	1	RES SMD 20K OHM 1% 1/16W 0402	20	kΩ	1%	0402	Vishay Dale	CRCW040220K0FKED	Yes	Yes
R35	1	RES SMD 20.5K OHM 1% 1/16W 0402	20.5	kΩ	1%	0402	Vishay Dale	CRCW040220K5FKED	Yes	Yes
R37	1	RES SMD 0.0OHM JUMPER 1/16W 0402	0	Ω	Jumper	0402	Vishay Dale	CRCW04020000Z0ED	Yes	Yes
R38	1	RES SMD 24.3K OHM 1% 1/16W 0402	24.3	kΩ	1%	0402	Vishay Dale	CRCW040224K3FKED	Yes	Yes
C49	0			DNP		0402				

C50	1	CAP CER 1000PF 50V X7R 0402	1	nF	10%	0402	Wurth Elektronik	885 012 205 061	Yes	Yes
C47,48	2	CAP CER 4700PF 10V X7R 0402	4700	pF	10%	0402	Wurth Elektronik	885 012 205 010	Yes	Yes