



## Bill of Materials for the NCP1618MM500WGEVB Evaluation Board

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
Power Section									
J10	1	AC Connector	GSF1.1xxx.xx			SCHURTER	GSF1.1201.31	NO	Yes
	1	Fuse	8 A / 250 V			SCHURTER	34562611	NO	Yes
J1b	1	VBULK connector				Multicomp	24.243.1	NO	Yes
J1a	1	GND connector				Multicomp	24.243.2	NO	Yes
HS1	1	Diodes Bridge (U1) Heatsink	4.5°C/W			Fischer Elektronik	SK481-50	NO	Yes
HS2	1	Q1a, Q1b and D1 Heatsink	2.8°C/W			Fischer Elektronik	SK481-100	NO	Yes
	4	HS1 and HS2 Heatsink clip				Fischer Elektronik	THFU1	NO	Yes
C1, C2	2	X2 capacitor	470 nF	277V	through-hole	Wurth Elektronik	890334025039CS	NO	Yes
C3a, C3b	2	Filtering capacitor	680 nF	450V	through-hole	Wurth Elektronik	890283425008CS	NO	Yes
C4	1	Electrolytic capacitor	330 µF	450 V	through-hole	Wurth Elektronik	8.61141E+11	NO	Yes
C5, C6	2	Y2 capacitors (note)	1 nF	275 V	through-hole	EPCOS	B32021A3102	NO	Yes
C7	1	Ceramic capacitor	220 nF	25V, 10%	SMD, 1206	various	various	YES	Yes
C9	1	High-voltage capacitor	100 pF	500 V	through-hole	Vishay	D101K20Y5PL6.J5.	NO	Yes
C10, C11	2	Capacitor	10 nF	25V, 10%	SMD, 1206	various	various	YES	Yes
C12	1	Capacitor	1 nF	25V, 10%	SMD, 1206	various	various	YES	Yes
C19	1	Electrolytic Capacitor	220 µF	35 V	through-hole	Wurth Elektronik	8.6002E+11	YES	Yes
U1	1	Diodes Bridge	GSIB1580	15A, 800V	through-hole	VISHAY	GSIB1580	NO	Yes
CM1	1	Common-Mode Filter	2 mH	6 mW	through-hole	Wurth Elektronik	7448031002	NO	Yes
D1	1	Boost diode	FFSPF0865A	8A, 650V	TO220F	ON Semiconductor	FFSPF0865A	NO	Yes
D2, D3	2	Bypass diode	1N5406	3A, 600 V	Axial	ON Semiconductor	1N5406G	NO	Yes
D4, D5, D6, D7, D8, D9	6	Switching diode	D1N4148	100 V	SOD123	Vishay	1N4148W-V	NO	Yes
DZ1	1	24-V zener diode	MMSZ24T1	24V, 0.5W	SOD-123	ON Semiconductor	MMSZ24T1G	NO	Yes
L1	1	Boost Inductor	175 µH, 14 A		PQ3230	Wurth Elektronik	750 317557	NO	Yes
L2	1	DM Choke	56 µH	17 mW	through-hole	BOURNS	2310-V-RC	NO	Yes
Q1a, Q1b	2	Power MOSFET	FCFP165N65	650V	TO220F	ON Semiconductor	FCPF165N65S3L1	NO	Yes
Q2	1	Power MOSFET	FCA76N60	600 V, 76 A	TO-3PN	ON Semiconductor	FCA76N60N	NO	Yes
Q3	1	NPN transistor	MMBT489LT1G	40 V / 1 A	SOT-23	ON Semiconductor	MMBT489LT1G	NO	Yes
Q4	1	PNP transistor	MMBT589LT1G	30V / 2A	SOT-23	ON Semiconductor	MMBT589LT1G	NO	Yes
NTC1	1	Inrush Current Limiter	10 W @ 25°C		through-hole	EPCOS	B57237S0100M0	NO	Yes
R1, R2, R16	3	SMD resistor, 1206, 1/4W	10 W	10%, 1/4W	SMD, 1206	various	various	YES	Yes
R3	1	Through hole resistor	0 W	1 W	through-hole	Vishay	AC01		Yes

R4, R5	2	SMD resistor, 1206, 1/4W	100 kW	10%, 1/4W	SMD, 1206	various	various	YES	Yes
R8, R9, R15	3	SMD resistor, 1206, 1/4W	2.2 W	10%, 1/4W	SMD, 1206	various	various	YES	Yes
R10, R11, R12, R13	4	SMD resistor, 1206, 1/4W	27 kW	10%, 1/4W	SMD, 1206	various	various	YES	Yes
R14	1	Current sense resistor	30 mW	1%, 3W	through-hole	Vishay	LVR03R0300FE12	NO	Yes
V1	1	TVS Varistor		275 V rms		Würth Elektronik	820513011	NO	Yes
Control Section and circuitry for soft-SKIP testing									
R18, R20	1	SMD resistor, 1206, 1/4W	0 kW	1%	SMD, 1206	various	various	YES	Yes
R19	1	SMD resistor, 1206, 1/4W	5.6 kW	1%	SMD, 1206	various	various	YES	Yes
R21	1	SMD resistor, 1206, 1/4W	560 kW	1%	SMD, 1206	various	various	YES	Yes
R22, R23	2	SMD resistor, 1206, 1/4W	1800 kW	1%	SMD, 1206	various	various	YES	Yes
R24	1	SMD resistor, 1206, 1/4W	27 kW	1%	SMD, 1206	various	various	YES	Yes
R25	1	SMD resistor, 1206, 1/4W	56 kW	1%	SMD, 1206	Vishay	various	YES	Yes
R26, R27, R28	3	SMD resistor, 1206, 1/4W	1 kW	1%	SMD, 1206	Vishay	various	YES	Yes
R29	1	SMD resistor, 1206, 1/4W	6.8 kW	1%	SMD, 1206	Vishay	various	YES	Yes
R30, R34, R35	3	SMD resistor, 1206, 1/4W	10 kW	1%	SMD, 1206	Vishay	various	YES	Yes
R31, R33	2	SMD resistor, 1206, 1/4W	22 W	1%	SMD, 1206	Vishay	various	YES	Yes
R32	1	SMD resistor, 1206, 1/4W	470 W	1%	SMD, 1206	Vishay	various	YES	Yes
D10, D11	2	Standard Recovery Diodes	1N4007	1000 V	through-hole	ON Semiconductor	1N4007G	NO	Yes
D12, D13, D14	3	Switching diode	D1N4148	100 V	SOD123	Vishay	1N4148W-V	NO	Yes
DZ3	1	10-V zener diode	MMSZ10T1	10 V, 0.5 W	SOD-123	ON Semiconductor	MMSZ10T1G	NO	Yes
DZ4	1	27-V zener diode	MMSZ27T1	27 V, 0.5 W	SOD-123	ON Semiconductor	MMSZ27T1G	NO	Yes
C14	1	Capacitor	2.2 nF	25 V, 10%	SMD, 1206	various	various	YES	Yes
C15, C18	1	Capacitor	10 nF	25 V, 10%	SMD, 1206	various	various	YES	Yes
C16	1	Capacitor	220 pF	25 V, 10%	SMD, 1206	various	various	YES	Yes
C20	1	Capacitor	22 nF	25 V, 10%	SMD, 1206	various	various	YES	Yes
C22	1	Capacitor	220 nF	25 V, 10%	SMD, 1206	various	various	YES	Yes
C23	1	Capacitor	22 pF	25 V, 10%	SMD, 1206	various	various	YES	Yes
Q6	1	NPN transistor	MMBT489LT1G	40 V / 1 A	SOT-23	ON Semiconductor	MMBT489LT1G	NO	Yes
S1	1	Manual Switch	1K2serie		SW_sip3	EOZ secme	09-03290.01	NO	Yes
U2	1	controller	NCP1618		SOIC9	ON Semiconductor	NCP1618	NO	Yes
J11	1	Vcc socket				WEIDMULLER	PM5.08/2/90	YES	Yes
Test Points									
VM	13	TP	1mm		TP-T1	KEYstone	5001	YES	Yes
PFCok		TP	1mm		TP-T1	KEYstone	5001	YES	Yes
Vaux		TP	1mm		TP-T1	KEYstone	5001	YES	Yes
VCC		TP	1mm		TP-T1	KEYstone	5001	YES	Yes
VDS		TP	1mm		TP-T1	KEYstone	5001	YES	Yes
VHV		TP	1mm		TP-T1	KEYstone	5001	YES	Yes
VIN		TP	1mm		TP-T1	KEYstone	5001	YES	Yes
VOUT		TP	1mm		TP-T1	KEYstone	5001	YES	Yes
VZCDin		TP	1mm		TP-T1	KEYstone	5001	YES	Yes
ZCD		TP	1mm		TP-T1	KEYstone	5001	YES	Yes
DRV		TP	1mm		TP-T1	KEYstone	5001	YES	Yes
GND		TP	1mm		TP-T1	KEYstone	5001	YES	Yes
Isense		TP	1mm		TP-T1	KEYstone	5001	YES	Yes
SKIP_ctrl2	1	TP	1,6mm		TP_T2	KEYstone	5009	YES	Yes