



Bill of Materials for the NCP1655MM500WGEVB 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
	3	HS1 and HS2 Heatsink clip				Fischer Elektronik	THFU1	NO	YES
C1, C2	2	X2 capacitor	470 nF	277V	through-hole	Würth Elektronik	890334025039CS	NO	YES
C3a, C3b	2	Filtering capacitor	680 nF	450V	through-hole	Würth Elektronik	890283425008CS	NO	YES
C4	1	Electrolytic capacitor	330 µF	450 V	through-hole	Würth Elektronik	8.61141E+11	NO	YES
C5, C6	2	Y2 capacitors (note)	1 nF	275 V	through-hole	EPCOS	B32021A3102	NO	YES
C9	1	High-voltage capacitor	100 pF	500 V	through-hole	Vishay	D101K20Y5PL6.J5.	NO	YES
C7, C12	2	Capacitor	2.2 nF	25V, 10%	SMD, 1206	various	various	YES	YES
C8	1	Capacitor	470 nF	25V, 10%	SMD, 1206	various	various	YES	YES
CM1	1	Common-Mode Filter	2 mH	6 mW	through-hole	Würth 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, D8	2	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	Würth Elektronik	750 317557	NO	YES
L2	1	DM Choke	56 µH	17 mW	through-hole	BOURNS	2310-V-RC	NO	YES
Q1a	1	Power MOSFET	FCFP067N65	650V	TO220F	ON Semiconductor	FCFP067N65S3L1	NO	YES
Q2	1	Power MOSFET	FCA76N60	600 V, 76 A	TO-3PN	ON Semiconductor	FCA76N60N	NO	YES
NTC1	1	Inrush Current Limiter	10 W @ 25°C		through-hole	EPCOS	B57237S0100M0	NO	YES
R2, R8, R16	3	SMD resistor, 1206, 1/4W	4,7 W	10%, 1/4W	SMD, 1206	various	various	YES	YES
R3	1	Through hole resistor	0 W	1 W	through-hole	Vishay	AC01		
R5, R15	2	SMD resistor, 1206, 1/4W	47 W	10%, 1/4W	SMD, 1206	various	various	YES	YES
R3	1	Through hole resistor	0 W	1 W	through-hole	Vishay	AC01		
R4, D7	2	SMD resistor, 1206, 1/4W	0 W	10%, 1/4W	SMD, 1205	various	various	YES	YES
R11, R13	2	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
U1	1	Diodes Bridge	GSIB1580	15A, 800V	through-hole	VISHAY	GSIB1580	NO	YES
U3	1	High-speed, low-side driver	FAN3100T	2 A	SOT23-5	ON Semiconductor	FAN3100TSX	NO	YES
V1	1	TVS Varistor		275 V rms		Würth Elektronik	820513011	NO	YES
Control Section									
R10, R17, R24	3	SMD resistor, 1206, 1/4W	27 kΩ	1%	SMD, 1206	various	various	YES	YES
R21	1	SMD resistor, 1206, 1/4W	560 kΩ	1%	SMD, 1206	various	various	YES	YES
R22, R23	2	SMD resistor, 1206, 1/4W	1800 kΩ	1%	SMD, 1206	various	various	YES	YES
R25	1	SMD resistor, 1206, 1/4W	56 kΩ	1%	SMD, 1206	Vishay	various	YES	YES
R26, R27, R28	3	SMD resistor, 1206, 1/4W	1 kΩ	1%	SMD, 1206	Vishay	various	YES	YES
R29	1	SMD resistor, 1206, 1/4W	10 kΩ	1%	SMD, 1206	Vishay	various	YES	YES
R31	1	SMD resistor, 1206, 1/4W	47 Ω	1%	SMD, 1206	Vishay	various	YES	YES
D10	1	Standard Recovery Diodes	1N4007	1000 V	through-hole	ON Semiconductor	1N4007G	NO	YES
D13	1	Switching diode	D1N4148	100 V	SOD123	Vishay	1N4148W-V	NO	YES
DZ4	1	18-V zener diode	MMSZ27T1	18 V, 0.5 W	SOD-123	ON Semiconductor	MMSZ18T1G	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
C22	1	Capacitor	220 nF	25 V, 10%	SMD, 1206	various	various	YES	YES
C19	1	Electrolytic Capacitor	47 µF	35 V	through-hole	Würth Elektronik	860020472006	YES	YES
U2	1	controller	NCP1655		SOIC9	ON Semiconductor	NCP1655ADR2G	NO	YES
J11	1	Vcc socket				Würth Elektronik	691,253,510,002	YES	YES
Test Points (see below)									
VM	12	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

Isense		TP	1mm		TP-T1	KEYstone	5001	YES	YES
Jumpers (see below)									
JGND	1	10-mm jumper							
JP1	1	isolated single stranded wire AWG15 0.5' pitch							
JP2 to JP12	11	isolated single stranded wire AWG26							

