



Bill of Materials for the NCP1395 220W LCD TV Evaluation Board

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
B1	1	Bridge Rectifier	8 A, 1000 V	-	KBU	Vishay	KBU8M	Yes	Yes
C1, C6	2	MKP series X2 Capacitor	1 uF, 275 Vac	20%	pitch 22.5 mm	Arcotronics	R46 KN 4100--N2 M	Yes	Yes
C10	1	X7R Ceramic Capacitor	39 nF, 50 V	20%	1206	Vishay	VJ1206393MXA	Yes	Yes
C13	1	X7R Ceramic Capacitor	4.7 nF, 50 V	20%	1206	Vishay	VJ1206Y472MXA	Yes	Yes
C14	1	KP series Capacitor	0.033 uF, 630 Vdc	10%	pitch 15 mm	Arcotronics	R73PI 2330--0-K	Yes	Yes
C2	1	Electrolytic Capacitor	4.7 uF, 100 V	20%	5x11 mm	Nippon Chemi-Con	EKMG101ELL4R7ME11D	Yes	Yes
C20, C48, C49, C32, C41	5	Electrolytic Capacitor	220 uF, 63 V	20%	10x16 mm	Nippon Chemi-Con	ESMG630ELL221MJ16S	Yes	Yes
C21	1	X7R Ceramic Capacitor	22 nF, 50 V	20%	1206	Vishay	VJ1206Y223MXA	Yes	Yes
C22, C24, C7	0	Not Used	-	-	1206	-	-	-	-
C25, C43	2	X7R Ceramic Capacitor	1 uF, 50 V	20%	1206	Vishay	VJ1206Y105MXA	Yes	Yes
C26, C37	2	X7R Ceramic Capacitor	100 pF, 50 V	20%	1206	Vishay	VJ1206Y101MXA	Yes	Yes
C29, C44	2	X7R Ceramic Capacitor	220 pF, 50 V	20%	1206	Vishay	VJ1206Y221MXA	Yes	Yes
C3	1	MKP series Capacitor	470 nF, 275 Vac	20%	pitch 22.5 mm	Arcotronics	R46 KN 3470--N0 M	Yes	Yes
C33, C36, C50	3	X7R Ceramic Capacitor	10 nF, 50 V	20%	1206	Vishay	VJ1206Y103MXA	Yes	Yes
C34	1	Electrolytic Capacitor	10 uF, 100 V	20%	6.3x11 mm	Nippon Chemi-Con	ESMG101ELL100MF11D	Yes	Yes
C35	1	Electrolytic Capacitor	100 uF, 35 V	20%	6.3x11 mm	Nippon Chemi-Con	ESMG350ELL101MF11D	Yes	Yes
C38	1	MMKP series Capacitor	0.010 uF, 400 Vdc	10%	pitch 7.5 mm	Arcotronics	R76MD 2100--3 K	Yes	Yes
C4, C51	2	Electrolytic Capacitor	100 uF, 450 V	20%	22x30 mm	Nippon Chemi-Con	EKMQ451VSN101MP30S	Yes	Yes
C5, C15-19, C27, C39, C40, C47	10	Electrolytic Capacitor	470 uF, 35 V	20%	10x16 mm	Nippon Chemi-Con	ESMG350ELL471MJ16S	Yes	Yes
C8, C12, C28, C30, C42, C45, C46	7	X7R Ceramic Capacitor	100 nF, 50 V	20%	1206	Vishay	VJ1206Y104MXA	Yes	Yes
C9, C11, C23, C31	4	X7R Ceramic Capacitor	1 nF, 50 V	20%	1206	Vishay	VJ1206Y102MXA	Yes	Yes
CY1, CY2, CY3	3	Capacitor	2.2 nF, 300 Vac, Y1	20%	Disc	Arcotronics	R413F 1220--00M	Yes	Yes
D1	1	Soft Recovery Power Rectifier	15 A, 600 V	-	TO-220	ON Semiconductor	MSR1560G	No	Yes
D10, D11, D17	3	Ultrafast Power Rectifier	-	-	SMA	ON Semiconductor	MURA160T3G	No	Yes
D12	1	Schottky Rectifier	3 A, 40 V	-	SMC	ON Semiconductor	MBSR340T3G	No	Yes
D13	1	Zener diode 0.5W	16 V	-	SOD-123	ON Semiconductor	MMSZ16T1G	No	Yes
D14	1	Surface Mount Si-Rectifiers	3 A, 1000 V	-	SMD	Diodec	SM5408	Yes	Yes
D15, D16	2	Switching diode	100 V	-	SOD-123	ON Semiconductor	MMSD914T1G	No	Yes
D2	1	Dual Schottky Rectifier	20 A, 100 V	-	TO-220	ON Semiconductor	MBRF20100CTG	No	Yes
D3, D4, D5, D6, D7, D18	6	Schottky Rectifier	4 A, 200 V	-	SMC	ON Semiconductor	MBSR4201T3G	No	Yes
D8	1	Zener Diode	7.5 V, 0.5 W	-	SOD-123	ON Semiconductor	MMSZ7V5T1G	No	Yes
D9	1	Not Used	-	-	-	-	-	-	-
F1	1	Fuse	T-4A	-	5x20 mm	Schurter	0034.3123	Yes	Yes
	1	Fuse Holder	-	-	pitch 22.5 mm	Schurter	0031.8201	Yes	Yes
IC1	1	Compact Fixed-Frequency Current-Mode Power Factor Correction Controller	-	-	SOIC-8	ON Semiconductor	NCP1653DR2G	No	Yes
IC2, IC5	2	Voltage regulator	-	-	SOIC-8	ON Semiconductor	TL431AIDR2G	No	Yes
IC3	1	High Performance Resonant Mode Controller	-	-	SOIC-16	ON Semiconductor	NCP1395ADR2G	No	Yes
IC4	1	High-Voltage Switcher for Medium Power Offline SMPS	-	-	PDIP	ON Semiconductor	NCP1027P065G	No	Yes
IC6, IC7, IC8	3	Optocoupler	-	-	DIP-4	Sharp	PC817	No	Yes
IC9	1	High and low side Power MOSFET Driver	-	-	SOIC-8	ON Semiconductor	NCP5181DR2G	No	Yes
J1	1	2 Position Terminal Block	-	-	pitch 6.35 mm	Phoenix Contact	1714955	Yes	Yes
J2	1	10 Pin Connector	-	-	pitch 2.54 mm	Molex	22-23-2101	Yes	Yes
J3	1	5 Pin Connector	-	-	pitch 2.54 mm	Molex	22-23-2051	Yes	Yes
J4, J5	2	7 Pin Connector	-	-	pitch 2.54 mm	Molex	22-03-2071	Yes	Yes
L1, L2	2	Mains Filter	7 mH	-	Through Hole	Pulse	6001.0069 A*	No	Yes



L3	1	PFC Coil	650 uH	-	Through Hole	Pulse	2702.0010 A*	No	Yes
L4, L6, L7, L8	4	Choke	2.2 uH, 10 A	-	Through Hole	P&V ELEKTRONIC	IND-FLT-2u2-10A	No	Yes
Q1, Q2, Q3	3	NPN Transistor	-	-	SOT-23	ON Semiconductor	BC817-16LT1G	No	Yes
R1	1	Varistor	0.4 W, 10 nF	-	Disc	Stackpole/KEKO	CV 275 K 10 B 1	Yes	Yes
R10	1	Chip Resistor	4.7 kΩ, 1/4 W	5%	1206	Vishay	CRCW12064K70JNEA	Yes	Yes
R11, R12	2	Resistor	2.2 MΩ, 1/4 W	1%	Axial	BC Components	5063JD2M200F12AF5	Yes	Yes
R13,R5, R30	3	Chip Resistor	470 kΩ, 1/4 W	5%	1206	Vishay	CRCW1206470KJKEA	Yes	Yes
R14	1	Chip Resistor	56 kΩ, 1/4 W	5%	1206	Vishay	CRCW120656K0JKEA	Yes	Yes
R15, R16, R70, R72	4	Chip Resistor	10 kΩ, 1/4 W	1%	1206	Vishay	CRCW120610K0FKEA	Yes	Yes
R17, R19, R59	3	Chip Resistor	1 kΩ, 1/4 W	1%	1206	Vishay	CRCW12061K00FKEA	Yes	Yes
R36	1	Chip Resistor	1.6 kΩ, 1/4 W	1%	1206	Vishay	CRCW12061K60FKEA	Yes	Yes
R18	1	Chip Resistor	20 kΩ, 1/4 W	1%	1206	Vishay	CRCW120620K0FKEA	Yes	Yes
R2	0	Thermistor (optional)	-	-	pitch 7.5 mm	-	-	-	-
R20	1	Chip Resistor	2.7 kΩ, 1/4 W	5%	1206	Vishay	CRCW12062K70JNEA	Yes	Yes
R21	1	Chip Resistor	4.3 kΩ, 1/4 W	1%	1206	Vishay	CRCW12064K30JNEA	Yes	Yes
R22	1	Chip Resistor	4.7 kΩ, 1/4 W	1%	1206	Vishay	CRCW12064K70JNEA	Yes	Yes
R23-24, R41, R33-34	0	Not Used	-	-	1206	-	-	-	-
R25	1	Chip Resistor	100 kΩ, 1/4 W	5%	1206	Vishay	CRCW1206100KJNEA	Yes	Yes
R26	1	Chip Resistor	680 kΩ, 1/4 W	5%	1206	Vishay	CRCW1206680KJNEA	Yes	Yes
R27, R39	2	Chip Resistor	330 kΩ, 1/4 W	5%	1206	Vishay	CRCW1206330KJNEA	Yes	Yes
R28	1	Chip Resistor	150 kΩ, 1/4 W	5%	1206	Vishay	CRCW1206150KJNEA	Yes	Yes
R29	1	Chip Resistor	6.2 kΩ, 1/4 W	5%	1206	Vishay	CRCW12066K20JKEA	Yes	Yes
R3	1	Sense Resistor	0.1Ω, 3 W	1%	Axial	Ohmite	13FR100E	Yes	Yes
R31-32, R52	3	Chip Resistor	1 MΩ, 1/4 W	5%	1206	Vishay	CRCW12061M00JKEA	Yes	Yes
R35	1	Chip Resistor	820 Ω, 1/4 W	5%	1206	Vishay	CRCW1206820RJKEA	Yes	Yes
R37	1	Chip Resistor	200 kΩ, 1/4 W	5%	1206	Vishay	CRCW1206200KJKEA	Yes	Yes
R38, R65, R67	3	Chip Resistor	0 Ω, 1/4 W	5%	1206	Panasonic	ERJ-8GEY0R00V	Yes	Yes
R4, R48	2	Chip Resistor	10 kΩ, 1/4 W	5%	1206	Vishay	CRCW120610K0JNEA	Yes	Yes
R40, R53, R54	3	Chip Resistor	1.2 MΩ, 1/4 W	5%	1206	Vishay	CRCW12061M20JNEA	Yes	Yes
R42	1	Chip Resistor	33 kΩ, 1/4 W	5%	1206	Vishay	CRCW120633K0JKEA	Yes	Yes
R43	1	Chip Resistor	5.6 kΩ, 1/4 W	5%	1206	Vishay	CRCW12065K60JKEA	Yes	Yes
R44	1	Chip Resistor	2.7 kΩ, 1/4 W	5%	1206	Vishay	CRCW12062K70JNEA	Yes	Yes
R45, R58	2	Chip Resistor	100 Ω, 1/4 W	5%	1206	Vishay	CRCW1206100RJNEA	Yes	Yes
R46	1	Chip Resistor	2.2 kΩ, 1/4 W	5%	1206	Vishay	CRCW12062K20JNEA	Yes	Yes
R47	1	Resistor	4.7 MΩ, 0.5 W	5%	Axial	Phoenix Passive	2306 242 23475	Yes	Yes
R49	1	Chip Resistor	18 kΩ, 1/4 W	1%	1206	Vishay	CRCW120618K0FKEA	Yes	Yes
R50	1	Chip Resistor	3.9 kΩ, 1/4 W	5%	1206	Vishay	CRCW12063K90JKEA	Yes	Yes
R51	1	Chip Resistor	75 kΩ, 1/4 W	5%	1206	Vishay	CRCW120675K0JNEA	Yes	Yes
R55	1	Chip Resistor	330 kΩ, 1/4 W	5%	1206	Vishay	CRCW1206330KJNEA	Yes	Yes
R56	1	Resistor	47 Ω, 1/4 W	5%	Axial	Yageo	CFR-25JB-47R	Yes	Yes
R57	1	Resistor	150 kΩ, 0.5 W	5%	Axial	Yageo	CFR-50JB-150K	Yes	Yes
R6, R7	2	Chip Resistor	750 kΩ, 1/4 W	5%	1206	Vishay	CRCW1206750KJNEA	Yes	Yes
R60, R61	2	Chip Resistor	10 kΩ, 1/4 W	1%	1206	Vishay	CRCW120610K0FKEA	Yes	Yes
R62	1	Chip Resistor	470 Ω, 1/4 W	5%	1206	Vishay	CRCW1206470RJNEA	Yes	Yes
R63	1	Chip Resistor	2 kΩ, 1/4 W	5%	1206	Vishay	CRCW12062K00JNEA	Yes	Yes
R64	1	Chip Resistor	47 kΩ, 1/4 W	5%	1206	Vishay	CRCW120647K0JNEA	Yes	Yes
R66	1	Chip Resistor	18 Ω, 1/4 W	5%	1206	Vishay	CRCW120618R0JKEA	Yes	Yes
R68	1	Chip Resistor	4.7 kΩ, 1/4 W	5%	1206	Vishay	CRCW12064K70JNEA	Yes	Yes
R69, R71	2	Chip Resistor	10 Ω, 1/4 W	5%	1206	Vishay	CRCW120610R0JNEA	Yes	Yes
R8	1	Chip Resistor	4.7 Ω, 1/4 W	5%	1206	Vishay	CRCW12064R70JNEA	Yes	Yes
R9	1	Chip Resistor	11 kΩ, 1/4 W	5%	1206	Vishay	CRCW120611K0JNEA	Yes	Yes
T1	1	MDmesh™ MOSFET	650 V, 20 A	-	TO-220FP	ST Microelectronics	STP20NM60FP	Yes	Yes
T2, T3	2	Zener-Protected SuperMESH™ MOSFET	500 V, 12 A	-	TO-220FP	ST Microelectronics	STP12NM50FP	Yes	Yes
TR1	1	Main Switchmode Transformer	2652.0017A	-	Through Hole	Pulse	2652.0017 A*	No	Yes
TR3	1	Switch Mode Transformer	2362.0031A	-	Through Hole	Pulse	2362.0031 A*	No	Yes
	1	AL cooler	150 mm	-	-	Fischer Elektronik	SK454 - 150mm	Yes	Yes
	1	AL cooler	100 mm	-	-	Fischer Elektronik	SK454 - 100mm	Yes	Yes

*Contact manufacturer for ordering information