

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free	Comments
C1, C3, C5	3	Ceramic Capacitor	2.2 nF / X1 / Y1	20%	Disc - Radial	Murata	DE1E3KX222MA5B	Yes	Yes	
C100	1	Ceramic Capacitor	220 pF	5%	805	Kemet	C0805C221J5GACTU	Yes	Yes	
C101, C103	2	Ceramic Capacitor	330 pF	5%	805	Kemet	C0805C331J5GACTU	Yes	Yes	
C102, C105, C113	3	Ceramic Capacitor	33 nF	10%	805	Kemet	C0805C333K5RACTU	Yes	Yes	
C104	1	Ceramic Capacitor	2.2 nF	10%	805	Kemet	C0805C222K5RACTU	Yes	Yes	
C110	1	Ceramic Capacitor	10 nF	10%	805	Kemet	C0805C103K5RACTU	Yes	Yes	
C106	1	Ceramic Capacitor	150 pF	5%	805	Kemet	C0805C151J5GACTU	Yes	Yes	
C107	1	Ceramic Capacitor	22 pF	5%	805	Kemet	C0805C220J5GACTU	Yes	Yes	
C108, C111	2	Ceramic Capacitor	100 nF	10%	805	Kemet	C0805C104K5RAC	Yes	Yes	
C109, C116	2	Ceramic Capacitor	1.0 µF	10%	805	Kemet	C0805X105K3RACAUTO	Yes	Yes	
C112	1	Ceramic Capacitor	NU	-	805	-	-	Yes	Yes	100 pF (C0805C101J5GACTU)
C114, C117	2	Ceramic Capacitor	NU	-	805	-	-	Yes	Yes	
C115	1	Ceramic Capacitor	3.9 nF	10%	805	Kemet	C0805C392K5RACTU	Yes	Yes	
C118	1	Ceramic Capacitor	150 nF	10%	805	Kemet	C0805C154K5RACTU	Yes	Yes	
C119	1	Ceramic Capacitor	1.2 nF	10%	805	Kemet	C0805C122K5RACTU	Yes	Yes	
C13	1	Electrolytic Capacitor	47 µF / 50 V	20%	Radial	Koshin	KLH-050V470ME110	Yes	Yes	
C14	1	Ceramic Capacitor	220 pF / 500 V	10%	Disk - Radial	Vishay	K221K15X7RL5UH5	Yes	Yes	
C2	0	Electrolytic Capacitor	NU	-	Radial	-	-	Yes	Yes	47 µF / 50 V (KLH-050V470ME110)
C4, C12	2	Suppression Film Capacitors	100 nF	10%	Through Hole	Epcos	B32922C3104K	Yes	Yes	
C6	1	Ceramic Capacitor	5.6 nF / 500 V	10%	Disk - Radial	Panasonic	ECK-D2H562KBE	Yes	Yes	
C7, C10, C11	3	Electrolytic Capacitor	1000 µF / 16 V	20%	Through Hole	United Chemi-Con	ELX2160ELL102MJ20S	Yes	Yes	
C8	1	Bulk Capacitor	100 µF / 400 V	20%	Through Hole	United Chemi-Con	EKXG401ELL101MNM3S	Yes	Yes	
C9	1	Ceramic Capacitor	1.2 nF / 630 V	5%	Radial	TDK Corporation	FK26C0G2J122J	Yes	Yes	
D1	1	Diode	1N4007	-	DO41-10B	ON Semiconductor	1N4007G	No	Yes	
D100, D101, D102, D106, D117	5	Diode SMD	MMSD4148	-	SOD123	ON Semiconductor	MMSD4148T3G	No	Yes	
D103	1	Zener diode	MMSZ15	5%	SOD123	ON Semiconductor	MMSZ15T3G	No	Yes	
D104, D116, D118	3	Diode SMD	BAS20H	-	SOD323	ON Semiconductor	BAS20H1T1G	No	Yes	
D105, D107, D108, D109, D110, D111, D113, D115	8	Diode SMA	MRA4007	-	SMA	ON Semiconductor	MRA4007T3G	No	Yes	
D112	0	Diode SMD	NU	-	SMA	-	-	No	Yes	
D114, D119, D120	0	Diode SMD	NU	-	SOD123	-	-	No	Yes	MMSD4148T3G
F1	1	Fuse (MST ser.)	1.6 A	-	Through Hole	Schurter Inc	34 6617	Yes	Yes	
IC100	1	Secondary Side Synchronous Rectification Driver	NCP4305	-	SOIC-08	ON Semiconductor	NCP4305	No	Yes	
IC101	1	Current-Mode PWM Controller	NCP1249D	-	SOIC-16	ON Semiconductor	NCP1249DD6SR2G	No	Yes	
IC102	1	Secondary Side SMPS OFF Mode Controller	NCP4354A	-	SOIC-08	ON Semiconductor	NCP4354ADR2G	No	Yes	
L1	1	WE-FI Leaded Toroidal Line Choke	NCP4354A	20%	744 701 8	Würth Elektronik	744 701 8	Yes	Yes	
L2	1	Power Line Choke	2 x 20 mH	-	B82734W	Epcos	B82734W2202B030	Yes	Yes	
L3	1	WE-TI Radial Leaded Wire Wound Inductor	1.0 µH	20%	Radial	Würth Elektronik	744 772 010	Yes	Yes	
L4	1	Inductor	SHORT	-	1812	-	-	Yes	Yes	
LED1	1	LED 3 mm Green	LED-3MM-GR	-	Through Hole	Vishay	TLHG4400	Yes	Yes	
NTC	1	Sensing NTC Thermistor	470 kΩ	2%	Through Hole	Vishay	NTCLE100E3474GB0	Yes	Yes	
OK1	1	Optocoupler	PC817	-	4-DIP	Sharp	PC817XJ000F	Yes	Yes	
Q1	1	N-Channel MOSFET	SPP11N60C3	-	TO220	Infineon	SPP11N60C3	Yes	Yes	
Q100	0	NPN PNP Bipolar Transistor	NU	-	SOT-363-6	-	-	No	Yes	BC846BPDW1T1G
Q101	1	PNP Bipolar Transistor	BC807	-	SOT-23	ON Semiconductor	BC807-40LT1G	No	Yes	
Q102	0	PNP Bipolar Transistor	NU	-	SOT-23	-	-	No	Yes	BC807-40LT1G
Q2	1	N-Channel MOSFET	IRFB4115	-	TO220	International Rectifier	IRFB4115PBF	Yes	Yes	
R1	4	Resistor Through Hole, High Voltage	4.7 MΩ	5%	Axial Lead	Welwyn	VRW37-4M7J1	Yes	Yes	
R100, R101	2	Resistor SMD	2.7 kΩ	1%	1206	Rohm	MCR10EZPF2701	Yes	Yes	
R111, R114, R129	3	Resistor SMD	10 MΩ	1%	805	Rohm	MCR10EZPF1002	Yes	Yes	
R134, R140	0	Resistor SMD	NU	-	805	-	-	Yes	Yes	10 kΩ (MCR10EZPF1002)
R102	1	Resistor SMD	1 kΩ	1%	805	Rohm	MCR10EZPF1001	Yes	Yes	
R103	1	Resistor SMD	390 kΩ	1%	805	Rohm	MCR10EZPF3903	Yes	Yes	
R104, R142	2	Resistor SMD	220 Ω	1%	805	Rohm	MCR10EZPF2200	Yes	Yes	
R138	0	Resistor SMD	NU	-	805	-	-	Yes	Yes	220 Ω (MCR10EZPF2200)
R105, R106	2	Resistor SMD	4.7 MΩ	1%	1206	Vishay Dale	CRCW12064M70FKEA	Yes	Yes	
R107	1	Resistor SMD	5.6 MΩ	1%	1206	Vishay Dale	CRCW12065M60FKEA	Yes	Yes	
R108	1	Resistor SMD	51 kΩ	1%	805	Rohm	MCR10EZPF5102	Yes	Yes	
R109	1	Resistor SMD	1.0 Ω	1%	805	Rohm	MCR10ERTFL1R00	Yes	Yes	
R110	1	Resistor SMD	10 MΩ	1%	805	Rohm	KTR10EZPF1005	Yes	Yes	
R113	1	Resistor SMD	1.8 kΩ	1%	805	Rohm	MCR10EZPF1801	Yes	Yes	
R135	2	Resistor SMD	100 kΩ	1%	805	Rohm	MCR10EZPF1003	Yes	Yes	
R112, R152	2	Resistor SMD	15 kΩ	1%	805	Rohm	MCR10EZPF1502	Yes	Yes	
R139	1	Resistor SMD	2.7 kΩ	1%	805	Rohm	MCR10EZPF2701	Yes	Yes	
R115, R116	2	Resistor SMD	22 kΩ	1%	805	Rohm	MCR10EZPF2202	Yes	Yes	
R117, R118, R126, R149	4	Resistor SMD	0 Ω	-	805	Stackpole	RMCF0805ZTOR00	Yes	Yes	
R119, R120, R121, R122	4	Resistor SMD	1.2 Ω	1%	1206	Rohm	MCR18ERTFL1R20	Yes	Yes	
R123	1	Resistor SMD	680 Ω	1%	805	Rohm	MCR10EZPF6800	Yes	Yes	
R124	1	Resistor SMD	2.2 Ω	1%	805	Rohm	MCR10ERTFL2R20	Yes	Yes	
R128	1	Resistor SMD	6.8 kΩ	1%	805	Rohm	MCR10EZPF6801	Yes	Yes	
R130	1	Resistor SMD	22 Ω	1%	805	Rohm	MCR10EZPF22R0	Yes	Yes	
R143	1	Resistor SMD	4.7 kΩ	1%	805	Rohm	MCR10EZPF4701	Yes	Yes	
R131	0	Resistor SMD	NU	-	805	-	-	Yes	Yes	4.7 kΩ (MCR10EZPF4701)
R132	1	Resistor SMD	3.9 kΩ	1%	805	Rohm	MCR10EZPF3901	Yes	Yes	
R133	1	Resistor SMD	16 kΩ	1%	805	Rohm	MCR10EZPF1602	Yes	Yes	
R136	1	Resistor SMD	56 kΩ	1%	805	Rohm	MCR10EZPF5602	Yes	Yes	
R137	1	Resistor SMD	110 kΩ	1%	805	Rohm	MCR10EZPF1103	Yes	Yes	
R141	1	Resistor SMD	2.2 kΩ	1%	805	Rohm	MCR10EZPF2201	Yes	Yes	
R144	0	Resistor SMD	NU	-	805	-	-	Yes	Yes	100 kΩ (MCR10EZPF1003)
R145	1	Resistor SMD	270 Ω	1%	805	Rohm	MCR10EZPF2700	Yes	Yes	
R146	1	Resistor SMD	11 mΩ	1%	1206	Rohm	UCR18EVHFSR011	Yes	Yes	
R147	1	Resistor SMD	3.0 kΩ	1%	805	Rohm	MCR10EZPF3001	Yes	Yes	
R148	1	Resistor SMD	300 kΩ	1%	805	Rohm	MCR10EZPF3003	Yes	Yes	
R150	0	Resistor SMD	NU	-	805	-	-	Yes	Yes	220 kΩ (MCR10EZPF2203)
R125, R127, R151	3	Resistor SMD	39 kΩ	1%	805	Rohm	MCR10EZPF3902	Yes	Yes	
R153	1	Resistor SMD	82 kΩ	1%	805	Rohm	MCR10EZPF8200	Yes	Yes	
R2, R3	2	Resistor Through Hole	220 kΩ	1%	0207/10	Vishay	HVR2500002203FR500	Yes	Yes	
R4	1	Resistor Through Hole	2.2 Ω	1%	0207/10	Vishay	CMF552R2000FKR6	Yes	Yes	
R5	1	Resistor Through Hole	15 Ω	1%	0207/10	Vishay	CMF5515R000FKR6	Yes	Yes	
R6	1	NTC Thermistor	Wire Strap	-	Disc - Radial	-	-	Yes	Yes	
R7	1	Surge Protecting Varistor	S10K300E2K1	10%	Disc - Radial	Epcos	B72210P2301K101	Yes	Yes	
SJ100	1	SMD Solder Jumper	Shorted	-	Solder jmp	-	-	Yes	Yes	Figure 2
SJ101	1	SMD Solder Jumper	OFF	-	Solder jmp	-	-	Yes	Yes	Figure 1
SJ102	1	SMD Solder Jumper	Open	-	Solder jmp	-	-	Yes	Yes	Figure 3
TR1	1	FlyBack Transformer	KA5038-BL	-	KA5038-BL	CoilCraft	KA5038-BL	TBD	Yes	
TR2	1	Transformer	PA6598-AL	-	PA6598-AL	CoilCraft	PA6598-AL	TBD	Yes	
X1	1	Terminal Block, 3 Way	CTB5000/3	-	W237-113	Cadem El	CTB5000/3	Yes	Yes	
X2	1	Terminal Block, 2 Way	CTB5000/2	-	W237-102	Cadem El	CTB5000/2	Yes	Yes	
J01, J02, J12, J15, J17	1	Wire Strap (insulated)	7.5 mm	-	Through Hole	various	-	Yes	Yes	
J03	1	Wire Strap (insulated)	28.0 mm	-	Through Hole	various	-	Yes	Yes	
J04	1	Wire Strap (insulated)	12.0 mm	-	Through Hole	various	-	Yes	Yes	
J05	1	Wire Strap (insulated)	17.8 mm	-	Through Hole	various	-	Yes	Yes	
J06	1	Wire Strap (insulated)	13.0 mm	-	Through Hole	various	-	Yes	Yes	
J07	1	Wire Strap (insulated)	8.0 mm	-	Through Hole	various	-	Yes	Yes	
J08	1	Wire Strap (insulated)	9.5 mm	-	Through Hole	various	-	Yes	Yes	
J09	1	Wire Strap (insulated)	22.4 mm	-	Through Hole	various	-	Yes	Yes	
J10	1	Wire Strap (insulated)	14.0 mm	-	Through Hole	various	-	Yes	Yes	
J11	1	Wire Strap (insulated)	4.5 mm	-	Through Hole	various	-	Yes	Yes	
J13, J14	1	Wire Strap (insulated)	13.4 mm	-	Through Hole	various	-	Yes	Yes	
J16	1	Wire Strap (insulated)	10.0 mm	-	Through Hole	various	-	Yes	Yes	
J18, J19	1	Wire Strap (insulated)	12.5 mm	-	Through Hole	various	-	Yes	Yes	
J20	1	Wire Strap (insulated)	6.5 mm	-	Through Hole	various	-	Yes	Yes	
Q1, D1	2	EMI Suppression Ferrite Bead	742 700 73	-	742 700 73	Würth Elektronik	742 700 73	Yes	Yes	
Q1, Q2	2	TO220 Transistor Insul Pad 1.13 x 0.63" & Bushings & Screw & Nut - M3	-	-	-	-	TO-220-68	Yes	Yes	
BOARD STANDOFF	3	Hex Standoff M3 Nylon 8 mm	8.0 mm	-	-	Harwin	R30-1610800	Yes	Yes	
BOARD STANDOFF	1	Hex Standoff M3 Brass 8 mm	8.0 mm	-	-	Harwin	R30-1000802	Yes	Yes	
HS TYPE 1	1	Heat Sink Type 1	-	-	-	various	-	Yes	Yes	
HS TYPE 2	1	Heat Sink Type 2	-	-	-	various	-	Yes	Yes	

NCP1249C & NCP4354A rev02 Heat Sinks Drawing

Material: Al 2.0 mm
Surfacing: BLACK ELOX

