

All resistors are 1% tolerance unless otherwise indicated
All capacitors are X7R or COG dielectric unless otherwise indicated

Reference	Part Value	Description	Voltage	Package	Manufacturer	Part Number
C1, C3, C11, C17, C21, C23, C27, C34, C39, C40, C82, C83, C84, C86, C88	100 nF	SMD Multilayer Ceramic Cap. Automotive	50V	402	MURATA	GCM155R71H104KE02J
C46	100 nF	SMD Multilayer Ceramic Cap. Automotive	50V	402	MURATA	GCM155R71H104KE02J
C10, C28	2.2 uF	SMD Multilayer Ceramic Cap.	25V	603	MURATA	GRM188R61E225KA12D
C117, C121, C136, C139, C142, C145, C148	1 uF	SMD Multilayer Ceramic Cap.	16V	603	TDK	C1608X5R1C105K080AA
C12	DNM	Cap 0402 - DNM	-	402	-	-
C122	1 nF	SMD Multilayer Ceramic Cap.	100V	603	TDK	C1608X7R2A102K080AA
C123	10 nF	SMD Multilayer Ceramic Cap.	50V	603	MURATA	GRM188R71H103KA01
C124, C127	1 uF	SMD Multilayer Ceramic Cap.	16V	603	TDK	C1608X5R1C105K080AA
C125, C149, C152, C155, C158	1 nF	SMD Multilayer Ceramic Cap.	100V	603	TDK	C1608X7R2A102K080AA
C126, C128, C131, C134, C137, C140, C143, C146, C150, C153, C156, C159	10 nF	SMD Multilayer Ceramic Cap.	50V	603	MURATA	GRM188R71H103KA01
C13, C19, C41, C52	100 pF	SMD Multilayer Ceramic Cap. Automotive	50V	402	MURATA	GCM1555C1H101JA16D
C85, C130, C133, C161, C166, C174	470 nF	SMD Multilayer Ceramic Cap. Automotive	50V	603	TDK	CGA3E3X7R1H474K080A
C14	470 nF	SMD Multilayer Ceramic Cap.	25V	603	WALSIN	0603B474K250CT
C151, C154, C157, C160	47 nF	SMD Multilayer Ceramic Cap.	50V	603	TDK	C1608X7R1H473K080AA
C164, C165	47 pF	SMD Multilayer Ceramic Cap.	100V	603	YAGEO	CC0603JRNPO08N470
C167, C169	100 pF	SMD Multilayer Ceramic Cap.	50V	603	TDK	C1608NP01H101J080AA
C168	1 nF	SMD Multilayer Ceramic Cap.	100V	603	TDK	C1608X7R2A102K080AA
C18, C24, C25, C32, C33, C89	10 uF	SMD Multilayer Ceramic Cap. Automotive	50V	1206	TDK	CGA5L1X7R1H106K160AC
C2, C4, C15, C16	10 uF	SMD Multilayer Ceramic Cap. Low ESL, Automotive	25V	805	TDK	CGA4J1X7S1E106K125AC
C20	2.2 uF	SMD Multilayer Ceramic Cap. Automotive	25V	603	MURATA	GRT188C71E225KE13D
C22	4.7 uF	SMD Multilayer Ceramic Cap.	25V	603	MURATA	GRM188R61E475KE11D
C26, C162, C163	100 nF	SMD Multilayer Ceramic Cap. Automotive	50V	603	MURATA	GCM188R71H104KA57D
C29	680 nF	SMD Multilayer Ceramic Cap. Automotive	50V	603	TDK	CGA3E3X5R1H684K080A
C30, C31	33 nF	SMD Multilayer Ceramic Cap. Automotive	50V	402	TDK	CGA2B3X7R1H333K050B
C35, C36, C37, C38	4.7 uF	SMD Multilayer Ceramic Cap. Automotive	50V	805	TDK	CGA4J1X7R1H475K125AC
C42, C43	10 uF	SMD Multilayer Ceramic Cap. Automotive	50V	1206	TDK	CGA5L1X7R1H106K160AC
C44, C45	1 uF	SMD Multilayer Ceramic Cap. Automotive	50V	603	TDK	CGA3E3X5R1H105K080A
C47	1.2 nF	SMD Multilayer Ceramic Cap. Automotive	50V	402	MURATA	GCM155R71H122KA37D
C48, C49, C50, C53, C55, C54, C56, C57, C59, C60, C62, C63, C65, C66, C68, C90	47 nF	SMD Multilayer Ceramic Cap. Automotive	100V	603	TDK	CGA3E3X7S2A473K080A
C5	82 pF	SMD Multilayer Ceramic Cap. Automotive	50V	402	TDK	CGA2B2C0G1H820J050B
C51	1 nF	SMD Multilayer Ceramic Cap.	50V	402	MURATA	GRM1555C1H102JA01D
C58, C61, C64, C67	68 nF	SMD Multilayer Ceramic Cap.	50V	603	KEMET	C0603C683K5RAC
C6	15 pF	SMD Multilayer Ceramic Cap.	50V	402	SAMSUNG	CL05C150JB5NNNC
C69, C70, C72, C73, C75	10 nF	SMD Multilayer Ceramic Cap. Automotive	50V	402	MURATA	GCM155R71H103KA55
C7, C8, C9	22 uF	SMD Multilayer Ceramic Cap.	16V	805	MURATA	GRM21BC81C226ME44L
C71, C74, C116	6.8 nF	SMD Multilayer Ceramic Cap. Automotive	50V	603	TDK	CGA3E2X7R1H682K080A
C76, C78, C79, C81	33 nF	SMD Multilayer Ceramic Cap.	16V	402	YAGEO	CC0402KRX7R7BB333
C77, C80	560 nF	SMD Multilayer Ceramic Cap.	25V	805	KEMET	C0805C564K3RAC
C87	22 pF	SMD Multilayer Ceramic Cap.	50V	402	-	CC0402JRNPO98N220
C91, C93, C95, C96, C97, C100, C101, C103, C104, C105, C107, C108, C109, C110, C111, C112, C114, C118, C119, C129, C132, C135, C138, C141, C144, C147	100 nF	SMD Multilayer Ceramic Cap.	50V	603	WURTH	8.85012E+11
C92, C94, C98, C99, C106, C113, C115, C120	4.7 uF	SMD Multilayer Ceramic Cap.	50V	805	TDK	C2012X7R1H475K125AC
C171, C172, C173	DNM	Resistor_0805	-	805	-	-
D1	SBR2A40P1Q-7	SMD Super Barrier Rectifier	40V	PowerDI123	DIODES	SBR2A40P1Q-7
D11	MBR2045MFST1G	SMD Power Schottky Rectifier	45V	POWERFLATS X6	ON SEMICONDUCTOR	MBR2045MFST1G
D12, D14	4V7	SMD Zener Diode	4.7V	SOT-23	MULTICOMP	BZX84C4V7
D15, D16	BAS321,115	SMD Rectifier	200V	SOD-323	NEXPERIA	BAS321,115
D2, D3, D4, D13	STPS2L40UF	SMD 40V, 2A low drop power Schottky rectifier	40V	SMBFLAT	ST Microelectronics	STPS2L40UF
D5, D9	LDP01-28AY	SMD Automotive TVS for load dump protection	24V	D2PAK	ST Microelectronics	LDP01-28AY
D6, D10	SM6F13AY	SMD Automotive 600 W TVS in SOD128 Flat	13V	SOD128 Flat	ST Microelectronics	SM6F13AY
D7, D8	SMBJ16CA	SMD Transient Bidirectional Voltage Rectifier	16V	SMB	LITTELFUSE	SMBJ16CA
FB1	1K5	SMD Multilayer Ferrite Automotive	0.5A	603	MURATA	BLM18HE152SH1D
IC1, IC2	LM74502HDDFR	SMD Low IQ High Side Switch Controller	3.2V to 65V	SOT23-8	Texas Instruments	LM74502HDDFR
IC3	ISOUSB111DWXR	SMD Full/Low Speed Isolated USB Repeater	3.0V to 5.5V	SSOP16	Texas Instruments	ISOUSB111DWXR
IC4	99VR01JT	SMD Automotive low dropout linear voltage regulator with configurable output voltage	99VR01	-	ST Microelectronics	99VR01JT
J11	DIP Switch 4 positions	SW 4VIAS Dip Switch SMD Pitch 2.54mm	-	-	CTS	219-4MST
L1	2.2 uH	SMD Inductor	1.7A	SRN3015	BOURNS	SRN3015TA-2R2M
L10	100 uH x2	SMD Common Mode Inductor	0.15A	-	TDK	B82789C0104N002
L2, L3	22 uH	SMD Power Inductor - Automotive	4.5A	AMRM00101 040220MA1	Pulse Electronics	AMRM00101040220MA1
L4	4.7 uH	SMD Shielded Power Inductors - Automotive	9A	AMRM00101 0404R7MA1	Pulse Electronics	AMRM001010404R7MA1
L6, L7, L8, L9	60R	SMD Multilayer Ferrite	0.5A	603	WURTH	74279267
FB2	1K	SMD Multilayer Ferrite	1.5A	-	MURATA	BLM41PG1025H1L
L9988	L9988 Device	Device L9988 - TQFP80EP(RE) - Supplied by ST	-	TQFP80EP	ST Microelectronics	L9988
LD1, LED6	Green	SMD Led Diode Green - Standard Bright	2.2V	805	Kingbright	APT20125GCK

LED_FLT, LED_FSO1, LED_LATCH	Red	SMD Led Diode Red Clear 633nm TOP-LED	2V	2-PLCC	OSRAM	LS T676-Q1R2-1-Z
LED4, LED5	Red	SMD Led Diode Red - Standard Bright	1.85V	805	Kingbright	APT2012SURCK
LED_TEST, LED_TEST1	Green	SMD Led Diode Green Clear 570nm 100mcd	2-PLCC	-	Kingbright	AA3528CGSK
M1, M2, M3, M4, M5, M6, M7, M8, M9, M10, M11, M12	STL059N4S8AG	SMD N-ch Power Mosfet	-	PowerFLAT	ST Microelectronics	STL059N4S8AG
M13	SQ2361CEE	SMD P-ch Power Mosfet - Automotive	60V	SOT23	VISHAY	SQ2361CEE
M14	STL059N4S8AG	SMD N-ch Power Mosfet	-	PowerFLAT	ST Microelectronics	STL059N4S8AG
M15	PMV130ENEAR	SMD N-ch Trench Mosfet - Automotive	40V	SOT23	NEXPERIA	PMV130ENEAR
Q1	NVTF55C466NLTAG	SMD Power MOSFET, Single N-Channel - Automotive	40V	WDFN8	ON SEMICONDUCTOR	NVTF55C466NLTAG
R1, R108	330K	SMD Resistor	1/10W	603	YAGEO	RC0603FR-07330KL
R10, R11, R12, R15, R18, R21, R24	200R	SMD Resistor Automotive	1/10W	603	VISHAY	CRCW0603200RFKE
R13, R16, R19, R22, R25	22R	SMD Resistor	1/2W	1210	YAGEO	RC1210FR-0722RL
R14, R17, R20, R23, R26	22R	SMD Resistor	1/2W	1210	YAGEO	RC1210FR-0722RL
R2	51K	SMD Resistor Automotive	-	603	PANASONIC	ERJ-3EKF5102V
R27, R28, R32, R33, R37	100K	SMD Resistor Automotive	-	402	VISHAY	TNPW0402100KBEEED
R29, R30, R34, R35, R38	3K3	SMD Resistor	-	402	PANASONIC	ERJ-2RKF3301X
R3	68K	SMD Resistor Automotive	-	603	VISHAY	CRCW060368K0FKEA
R31, R36, R39	100K	SMD NTC Thermistor Automotive	-	402	TDK	B57254V5104F360
R4	10R	SMD Resistor Automotive	-	603	YAGEO	AT0603FRE0710RL
R40, R41, R42, R43	47R	SMD Resistor Automotive	-	402	VISHAY	CRCW040247R0FKED
R44	0R0001	SMD Resistor Automotive	-	5930	VPG Foil Resistors	Y14860R00010F9R
R45, R46, R47, R48	1M	SMD Resistor Automotive	-	402	PANASONIC	ERJ-2RKF1004X
R49	12K	SMD Resistor Automotive	-	603	VISHAY	CRCW060312K0FKEA
R5	220K	SMD Resistor	150V	603	PANASONIC	ERA-3AEB224V
R50, R51	10R	SMD Resistor Automotive	-	603	YAGEO	AT0603FRE0710RL
R52	5K6	SMD Resistor Automotive	-	603	YAGEO	RC0603FR-075K6L
R53	15K	SMD Resistor Automotive	-	603	YAGEO	AC0603FR-0715KL
R54, R56, R60, R61, R62, R86, R87	4K7	SMD Resistor Automotive	-	603	VISHAY	CRCW06034K70FKEA
R55, R58, R59	470R	SMD Resistor Automotive	-	603	VISHAY	CRCW0603470RFKEA
R57	2K2	SMD Resistor Automotive	-	603	VISHAY	CRCW06032K20FKEA
R6	0R1	SMD Current Sense Resistor	-	1210	YAGEO	RL1210FR-070R1L
R63, R81	0R	SMD Resistor Automotive	-	603	VISHAY	CRCW06030000Z0EA
R64, R68, R69	10K	SMD Resistor Automotive	-	603	VISHAY	CRCW060310K0FKEA
R65, R66, R107	10K	SMD Resistor Automotive	-	603	VISHAY	CRCW060310K0FKEA
R67	10K	SMD Resistor Automotive	-	402	PANASONIC	ERJ2RKF1002X
R7, R8, R9, R109	2K8	SMD Resistor Automotive	-	603	YAGEO	AC0603FR-072K8L
R70, R75, R76, R77, R78, R79, R80	1K	SMD Resistor Automotive	75V	603	YAGEO	AT0603FRE071KL
R71, R84	10K	SMD Resistor Automotive	-	402	PANASONIC	ERJ2RKF1002X
R72, R85	30K	SMD Resistor	-	402	PANASONIC	ERJ-2RKF3002X
R73, R74	100R	SMD Resistor	-	603	YAGEO	RC0603FR-07100RL
R82	47K	SMD Resistor	50V	603	YAGEO	RC0603FR-0747KL
R83	392R	SMD Resistor Automotive	-	603	PANASONIC	ERA-3AEB3920V
R88	-	Resistor_0805	-	805	-	DNM
R89	120R	SMD Resistor	-	402	VISHAY	CRCW0402120RFKEDC
R90	27R	SMD Resistor Automotive - High Power	50V	402	VISHAY	RCS040227R0FKED
R91, R92	100K	SMD Resistor	-	402	YAGEO	RC0402FR-07100KL
R93	1K	SMD Resistor Automotive	-	402	YAGEO	AT0402FRE071KL
R94	10K	SMD Resistor Automotive	-	402	PANASONIC	ERJ2RKF1002X
R95, R96, R97, R98, R99, R100, R101, R102, R103, R104, R105, R106	0R	SMD Resistor Automotive	-	402	VISHAY	CRCW04020000Z0ED
SW1, WAKE_BTN	ADTSM31NV	Pushbutton for pcb 2 pins_SMD, h=4.0mm	12VDC	ADTSM31NV	APEM	
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13	Test Point	Test Point SMD	-	-	-	TPOINTSMDSMD
U1	FT2232HL	IC FTDI SMD USB HS DUAL UART/FIFO LQFP64	3V to 3.6V	LQFP64	FTDI	FT2232HL-REEL
U10	TJA1057GT/3J	SMD High-speed CAN transceiver	4.75V to 5.25V	SO8	NXP	TJA1057GT/3J
U2	USBLC6-2P6	SMD ESD Protection	-	SOT-666	ST Microelectronics	USBLC6-2P6
U3, U5, U6	SN74LVC2T45DCTR	IC SMD Dual-Bit Dual-Supply Bus Transceiver SSOP-8	1.65V to 5.5V	SSOP8	Texas Instruments	SN74LVC2T45DCTR
U4	M93S46-WMNG6TP	SMD IC EEPROM 1K SPI 2MHZ	2.5V to 5.5V	SO8	ST Microelectronics	M93S46-WMNG6TP
U7, U8	SN74LVC1T45DCKT	IC SMD Single-Bit Dual-Supply Bus Transceiver SC-70-6	1.65V to 5.5V	SC-70-6	Texas Instruments	SN74LVC1T45DCKT
U9	SPC582Bx_Chorus_64	Chorus Microcontroller SPC582B TQFP64	-	TQFP64+EP	ST Microelectronics	Chorus SPC582B2
USB	67503-1020	MOLEX Connector SMT, right angle, USB MINI-B, 5pin	-	67503-1020	MOLEX	-
XTAL1	12MHz	SMD Piezoelectric Ceramic Resonator	-	CSTNE	MURATA	CSTNE12M0G52Z000R0
XTAL2	40MHz	SMD Quartz MURATA	-	XRCGB	MURATA	XRCGB40M000F1S1CR0
Y1	32.768KHz	SMD Quartz EPSON 12.5pF	+/-20ppm	FC-135 32.7680KA-A0	EPSON	FC-135 32.7680KA-A0
Z1, Z2, Z3, Z7	15V	SMD Zener Diode	15V	SOD-523	ON SEMICONDUCTOR	MM5215VT1G
Z9, Z10	15V	SMD Zener Diode	15V	SOD-523	ON SEMICONDUCTOR	MM5215VT1G
CN_BATTERY	282834-8	Screw Terminal Box 8 poles Pitch 2.54mm	2.54mm	-	TE Connectivity	282834-8
CN_CAN	M 9 POLI 90	Conn DB9 Male 90°	-	-	MULTICOMP	5504F1-09P-02A-03
CN_FLT	BNC-SMA-FEM-90	50-Ohm Female RF SMA Connector, Right Angle	-	-	Linx Technologies	CONSMA002
CN1	FLAT M 14p 180	Conn Flat Male 14 pins, straight, low profile	-	-	Amphenol	T821114A15100CEU
DRAIN_CHG, DRAIN_DCHG, EXT_3V3/5V, EXT_WAKE, FAULT, FCCU1, FCCU2, FSO1, FSO2, GND, HS_IN1, HS_IN2, IGN, INTC, LATCH, NCS, PRN, RST1, RST2, RTCWPST, SCK, SDI, SDO, VBP, VBS, VCC, VCC_CAN, VG1, VG1_MCU, VG2, VG2_MCU, VIO, VS1, VS1_MCU, VS2, VS2_MCU, VSTBY, VTREF, WAKE, WDTDIS	STRIP 1-M-V	Male Strip 1 pole	6.13mm	1 pole	WURTH	61300111121
GND0, GND1, GND2, GND3	TESTPOINT	PCB test point lug (oval drill)	-	-	Keystone	4952
IGN_SWITCH	SLW-121586-5A-DC	Slide Switch 2 positions ON-ON - SPDT	50VDC	-	UI Devices	SLW-121586-5A-DC
J1, J3, JP3	Jumper_SMD 3P SMALL	SMD Jumper 3p SMALL DROP	-	3p SMALL	-	-
J14, J15, J16	STRIP 5-M-V	Male Strip 1x5 pins pitch 2.54mm	6.13mm	-	WURTH	61300511121
J2, J4, J5, J6, J7, J8, J9, J10	Jumper_SMD 3P SMALL	SMD Jumper 3p SMALL DROP	-	3p SMALL	-	-
JP1	STRIP 3-M-V	Male Strip 1x3 pins pitch 2.54mm	750Vac/dc 3A	-	WURTH	61300311121
KL30, KL31, PACK-, PACK+	Single Screw Terminal	PCB Screw Terminal, 8 pin, 160A	2.54mm	-	WURTH	7461104
JP_TEST, JP_TEST1	STRIP 2-M-V	Male Strip 1x2 pins pitch 2.54mm	-	-	WURTH	61300211121
SB2, SB3, SB4, SB5, SB6, SB7, SB11, SB12, SB21, SB22, SB25, SB26, SB31, SB32, SB33, SB34, SB36, SB39, SB40, SB41, SB42, SB43, SB44, SB45, SB46, SB47, SB48, SB49, SB50, SB51, SB52	Jumper_SMD SMALL	SMD Jumper 2p SMALL DROP	-	2p SMALL	-	-
SB1, SB9, SB10, SB14, SB18, SB20, SB23, SB24, SB27, SB29, SB35, SB37, SB38	JP-OPEN	Jumper_SMD SMALL - Leave OPEN	-	JP2_SMD	-	-
Dist1,Dist2,Dist3,Dist4	M3x15 spacer	Fiducial 1mm	-	-	-	-