

TIDA-010949 REV E1 Bill of Materials



| Item # | Designator | Quantity | Value | PartNumber | Manufacturer | Description | Package/Reference |
|--------|--|----------|--------|------------------------------------|----------------------------------|--|-------------------------------|
| 1 | PJ3 | 1 | 0.2uF | TIDA-010949 | Any | Printed Circuit Board | |
| 2 | C1, C2, C3, C4, C21, C22, C23, C24, C26, C27, C28, C29 | 12 | 0.1uF | SR051D22KAT2A SRM15SR82104KE14D | AVX Murata | CAP. CERM. 2.2 uF, 16 V, +/- 10%, XSR, 0805 CAP. CERM, 0.1 uF, 100 V, +/- 10%, XSR, 0402 | 0805 0402 |
| 4 | C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C16, C16, C17, C18, C19, C20, C47, C52, C53, C55, C61 | 21 | | GRM32CE72A106KE05L | Murata | 10uF +/-10% 100V Ceramic Capacitor X7S 1210 (3225 Metric) | 1210 |
| 5 | C30, C31, C65, C67 | 4 | 0.1uF | SRM15SR71E104KE14D | MuRata | CAP. CERM. 0.1 uF, 25 V, +/- 10%, X7R, 0402 | 0402 |
| 6 | C32, C33, C34, C36 | 4 | 10pF | 4402U100FAT2A | KYOCERA AVX | 10 pF +/-1% 50V Ceramic Capacitor C0G, NPO 0402 (1005 Metric) | 0402 |
| 7 | C38, C37, C40, C41 | 4 | 2.2uF | SRM15BC71C22RKT1D | Murata | 2.2uF +/-10% 16V Ceramic Capacitor X7S 0603 (1608 Metric) | 0603 |
| 8 | C35, C42 | 2 | 100pF | GR1155SC1E101JAG5D | Murata | Multi-Layer Ceramic Capacitor 100pF 25V C0G +/-5% 0402 Paper T/R | 0402 |
| 9 | C43, C43 | 2 | 1uF | GR1102SR1E100KAT1D | Murata | Multi-Layer Ceramic Capacitor 1uF 25V X7R +/-10% 1206 Paper T/R | 1206 |
| 10 | C44, C45, C50, C51, C57, C58, C59 | 7 | 10uF | SR051D100KAT2A | AVX | CAP. CERM, 10 uF, 16 V, +/- 10%, XSR, 0805 | 0805 |
| 11 | C46 | 1 | 0.1uF | 4402V104KAT2A | AVX | CAP. CERM. 0.1 uF, 16 V, +/- 10%, X7R, 0402 | 0402 |
| 12 | C48, C55, C56, C57, C104 | 5 | 100nF | SR031C100KAT2A | KYOCERA AVX | Cap. Ceramic 100nF 100V X7R 10% SMD 0603 125°C Paper T/R | 0603 |
| 13 | C54 | 1 | 2200pF | SRM15SR71H222KA01D | MuRata | CAP. CERM. 2200 pF, 50 V, +/- 10%, X7R, 0402 | 0402 |
| 14 | C54, C77 | 2 | 0.1uF | SR03SC104AT2A | AVX | CAP. CERM. 0.1 uF, 25 V, +/- 6%, X7R, 0603 | 0603 |
| 15 | C56 | 1 | 0.1uF | SRM15SR71C104JAB8D | MuRata | CAP. CERM. 0.1 uF, 16 V, +/- 6%, X7R, 0402 | 0402 |
| 16 | C52, C54 | 1 | 100pF | GR03SC030V15R08105 | Yageo | CAP. CER. 1uF 16V X7R 0603 | 0603 |
| 17 | C63 | 1 | 10uF | SRM15SR71E100KAT1D | MuRata | CAP. CERM. 10 uF, 25 V, +/- 10%, X7R, 1206 | 1206 |
| 18 | C68, C68 | 2 | 1uF | SRM15SR71E100KAT1D | MuRata | CAP. CERM. 1 uF, 25 V, +/- 10%, X7R, 0603 | 0603 |
| 19 | C69, C71 | 2 | 0.01uF | GRM15SR71E103KA01D | MuRata | CAP. CERM. 0.01 uF, 25 V, +/- 10%, X7R, 0402 | 0402 |
| 20 | C70, C72 | 2 | 100pF | SRM15SR71E103KA01D | MuRata | CAP. CERM. 470 pF, 25 V, +/- 5%, C0G/NPO, 0402 | 0402 |
| 21 | C73, C75 | 1 | 100pF | GR03SC030V15R08105 | Yageo | CAP. CERM. 100pF, 25 V, +/- 5%, C0G/NPO, 0603 | 0603 |
| 22 | C74, C76 | 2 | 300pF | SRM15SR71E104J01D | MuRata | CAP. CERM. 300 pF, 50 V, +/- 5%, C0G/NPO, 0402 | 0402 |
| 23 | C78, C79 | 2 | 1uF | SRM15SR71E100KAT1D | MuRata | CAP. CERM. 1 uF, 25 V, +/- 10%, X7R, 0603 | 0603 |
| 24 | C80, C83, C83, C | 4 | 1nF | C0603X100K5RAC7867 | KEMET | 1000 pF +/-10% 50V Ceramic Capacitor X7R 0603 (1608 Metric) | 0603 |
| 25 | C81, C101, C108 | 3 | 10uF | GR1155SC1E101JAG5D | MuRata | CAP. CERM. 10 uF, 50 V, +/- 10%, XSR, AEC-Q200 Grade 1, 1206 | 1206 |
| 26 | C82 | 1 | 1uF | SR031C100KAT2A | AVX Corporation | 3300pF +/-5% 100V Ceramic Capacitor X7R 0603 (1608 Metric) | 0603 |
| 27 | C84 | 1 | 1uF | GR03SC030V15R08105 | TDK | CAP. CERM. 1 uF, 100 V, +/- 10%, X7R, AEC-Q200 Grade 1, 1206 | 1206 |
| 28 | C85 | 1 | 0.01uF | SRM15SR71H103KA01D | MuRata | CAP. CERM. 0.01 uF, 50 V, +/- 10%, X7R, 0603 | 0603 |
| 29 | C86, C89, C100, C102, C103, C105 | 6 | 0.01uF | SR031C100KAT2A | Wurth Elektronik | CAP. CERM. 0.01 pF, 50 V, +/- 10%, X7R, 0603 | 0603 |
| 30 | C87 | 1 | 1800pF | SRM15SR71H182JA01D | MuRata | CAP. CERM. 1800 pF, 50 V, +/- 5%, C0G/NPO, 0603 | 0603 |
| 31 | C88 | 1 | 1000pF | SR03SC104AT2A | AVX | CAP. CERM. 1000 pF, 50 V, +/- 10%, C0G/NPO, 0603 | 0603 |
| 32 | C89 | 1 | 100pF | SRM15SR71E100KAT1D | MuRata | CAP. CERM. 100 pF, 25 V, +/- 10%, X7R, 0603 | 0603 |
| 33 | C90 | 1 | 270pF | SRM15SR71E100KAT1D | MuRata | CAP. CERM. 270 pF, 50 V, +/- 5%, C0G/NPO, 0603 | 0603 |
| 34 | C91 | 1 | 2200pF | SR031C100KAT2A | AVX | CAP. CERM. 2200 pF, 100 V, +/- 5%, X7R, 0603 | 0603 |
| 35 | C92, C94 | 2 | 1uF | SRM15SR71E100KAT1D | MuRata | Cap. Ceramic 1uF 25V X7R 10% Pad SMD 0603 (1608 Metric) | 0603 |
| 36 | C98 | 1 | 47uF | CGA8X07R1E476M20XB | TDK | Cap. Ceramic 47uF 25V X7R 20% Pad SMD 2220 +/-125°C Automotive T/R | 2220 |
| 37 | C107 | 1 | 100nF | SR15SR71C104KA01D | Murata Electronics North America | Cap. Ceramic 100nF 100V X7R 10% SMD 0603 (1608 Metric) | 0603 |
| 38 | C108 | 1 | 0.01uF | SRM15SR71E103KA01D | MuRata | CAP. CERM. 0.01 uF, 10 V, +/- 10%, XSR, 0402 | 0402 |
| 39 | C109, C110 | 2 | 100pF | GR03SC030V15R08105 | KEMET | 100 pF +/-5% 16V Ceramic Capacitor C0G, NPS 0402 (1005 Metric) | 0402 |
| 40 | D1, D4, D5 | 3 | 80V | SD103AWV-7 | Strobel Inc. | Diode, Schottky, 40 V, 0.35 A, SOD-323 | SOD-323 |
| 41 | D1, D3, D8 | 3 | 10V | MM4468P-63-08 | Infineon Technologies | Diode, Zener, 6.3 V, 500 mW, SOD-323 | SOD-323 |
| 42 | D7, D15 | 2 | Blue | 1500008575000 | Wurth Elektronik | LED, Blue, SMD | LED, 0603 |
| 43 | D8 | 1 | 3.6V | MM4468P-63-08 | On Semiconductor | Diode, Zener, 3.6 V, 500 mW, SOD-323 | SOD-323 |
| 44 | D9, D11, D13, D14 | 4 | 80V | SD103A-134 | Strobel Inc. | Diode, Schottky, 80 V, 3 A, SMD | SMA |
| 45 | D10 | 1 | 02V | SRMA122CA | Infineon | Diode, TVS, Bi, 22 V, 35.5 Vc, 400 W, 11 x 3 A, SMA (non-polarized) | SMA (non-polarized) |
| 46 | D12, D16 | 2 | Red | 1500008575000 | Wurth Elektronik | LED, Red, SMD | LED, 0603 |
| 47 | F81, F82, F83 | 3 | | MR1608-601Y | Bourns | 800 Ohms @ 140 Mhz 1 Power, Signal Line Ferrite Bead 0603 (1608 Metric) 14.20mmCm | 0603 |
| 48 | H1, H2, H3, H4 | 4 | | PH PMS 440 0025 PH | BSF Fastener Supply | Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead | Screw |
| 49 | H5, H6, H7, H8 | 4 | | PHCS | Raychem | Heatshrink, Heat, 0.14, 0.44 Nylon | Shrink |
| 50 | J1, J3 | 2 | | OST17020150 | On-Shore Technology | Terminal Block, 6.35mm, 2x1, TH | On |
| 51 | J2 | 1 | | HSEC8-160-01-L-DV-A-BL | Samtec | C2000 controlCARD-120HSEC connector, SMT | On |
| 52 | J4, J5 | 2 | | 800-10-008-10-01000 | Mil-Max | Header, 10mm, 8x1, TH | C2000 pin headers |
| 53 | L1 | 1 | 10uH | 7443841009 | Wurth Elektronik | Inductor, Shielded, Ferrite, 10 uH, 30 A, 0.0024 ohm, SMD | 28.5x19.5mm |
| 54 | L2 | 1 | 1uH | 7443841009 | Wurth Elektronik | Inductor, Shielded, Ferrite, 1 uH, 30 A, 0.0024 ohm, SMD | 28.5x19.5mm |
| 55 | L4 | 1 | 1uH | 7443558120 | Wurth Electronics | 12uH Shielded Wirewound Inductor 19A 4.3mOhm Nonstandard | SMT, 22MM, 22 |
| 56 | L5 | 1 | 1mH | CO1607B-150ALB | Coolcraft | Inductor, Drum Core, Ferrite, 1 mH, 0.1 A, 19 ohm, SMD | 6.6x2.49x4.49mm |
| 57 | LL1 | 1 | 1.5mH | CO1607B-150ALB | Coolcraft | Inductor, Drum Core, Ferrite, 1.5 mH, 0.08 A, 21 ohm, SMD | 6.6x2.49x4.49mm |
| 58 | L6, L7 | 2 | 10uH | PH1-14-42-10 | Infineon | Thermal Transfer Patches Labels, 0.600" W x 0.200" H, 10,000 per roll | PCL Labels 0.199 x 0.200 inch |
| 60 | Q1 | 1 | 100V | 2SD1055C2058 | Texas Instruments | MOSEFET, N-CH, 100 V, 17 A, DFN0008A (VSON-CLP-8) | DFN0008A |
| 61 | Q2 | 1 | 100V | RS1168W83271SA1 | Infineon Technologies | MOSEFET, N-CH, Depletion Mode, 100 V, 0.17 A, AEC-Q101, SOT-23 | SOT-23 |
| 62 | R1 | 1 | 5uG | CR0402-100W-000 | Vishay | 0 Ohms Jumper 0.1W, 1/10W Chip Resistor 0402 (1005 Metric) - Thick Film | 0402 |
| 63 | R2, R6, R35 | 3 | 1m | LLRG03212R001FLP35 | TT Electronics | Res Metal Strip 2512 0.001 Ohm 1% 3W +/-50ppm/C Pad SMD Automotive T/R | 2512 |
| 64 | R3, R4 | 2 | 0 | RC04020402000000ED | Vishay Dale | Res Thick Film 0402 0 Ohm 1/16W Modest SMD | 0402 |
| 65 | R7, R7 | 2 | 0.01uF | RC04020402000000ED | Vishay Dale | RES, 2.00 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402 | 0402 |
| 66 | R8, R9, R14, R15 | 4 | 10.5k | RC04020402000000ED | Vishay Dale | RES, 10.5 k, 1%, 0.063 W, 0402 | 0402 |
| 67 | R10, R11, R12, R13 | 4 | 20 | RC04020402000000ED | Vishay Dale | RES, 20.0 k, 1%, 0.1 W, 0603 | 0603 |
| 68 | R16, R17, R58 | 3 | 0.00k | RC04020402000000ED | Vishay Dale | RES, 1.20 k, 1%, 0.1 W, 0603 | 0603 |
| 69 | R18, R24, R26, R27, R28, R73, R75 | 7 | 47 | RC04020402000000ED | Vishay Dale | RES, 47.5 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402 | 0402 |
| 70 | R19 | 1 | 115k | RC04020402000000ED | Vishay Dale | RES, 115 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402 | 0402 |
| 71 | R20 | 1 | 27.6k | RC04020402000000ED | Vishay Dale | RES, 27.6 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402 | 0402 |
| 72 | R21, R23 | 2 | 0k | RC04020402000000ED | Vishay Dale | RES, 10.5 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402 | 0402 |
| 73 | R22 | 1 | 75.0k | RC04020402000000ED | Vishay Dale | RES, 75.0 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402 | 0402 |
| 74 | R25 | 1 | 10.0k | RC04020402000000ED | Vishay Dale | RES, 10.0 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402 | 0402 |
| 75 | R23, R61, R62, R76 | 4 | 0k | RC04020402000000ED | Vishay | RES, 680.5 k, 0.1 W, 0603 | 0603 |
| 76 | R28, R38 | 2 | 83k | RC04020402000000ED | Vishay | RES, 43 k, 5%, 0.1 W, 0603 | 0603 |
| 77 | R31, R32, R63 | 3 | 87 | RC04020402000000ED | Vishay | RES, 47.0 k, 1%, 0.063 W, 0402 | 0402 |
| 78 | R33, R34, R36, R37 | 4 | 10 | RC04020402000000ED | Vishay | RES, 10.0 k, 1%, 0.063 W, 0402 | 0402 |
| 79 | R35, R51 | 2 | 510 | RC04020402000000ED | Vishay | RES, 510.5 k, 0.1 W, 0603 | 0603 |
| 80 | R40, R41 | 2 | 330 | RC04020402000000ED | Vishay | RES, 330.5 k, 0.05 W, 0.1 W, 0603 | 0603 |
| 81 | R42, R44 | 2 | 86.2 | RC04020402000000ED | Vishay | RES, 86.2 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402 | 0402 |
| 82 | R43, R45 | 2 | 1k | RC04020402000000ED | Vishay | High Precision-High Stability Chip Resistor Thick Film 0603 140m 0.1% Paper T/R | 0603 |
| 83 | R46, R47, R48, R49, R50, R54, R55 | 7 | 10k | RC04020402000000ED | Vishay | 10 kOhms +/-5% 0.1W, 1/10W Chip Resistor 0603 (1608 Metric) Thick Film | 0603 |
| 84 | R56, R52 | 2 | 100k | RC04020402000000ED | Vishay | RES, 100 k, 1%, 0.1 W, 0603 | 0603 |
| 85 | R57 | 1 | 10k | RC04020402000000ED | Vishay | RES, 33 k, 5%, 0.1 W, 0603 | 0603 |
| 86 | R58 | 1 | 8.7 | RC04020402000000ED | Vishay | RES, 4.7 k, 5%, 0.125 W, AEC-Q200 Grade 0, 0805 | 0805 |
| 87 | R59 | 1 | 130 | RC04020402000000ED | Vishay | RES, 330.5 k, 0.1 W, 0603 | 0603 |
| 88 | R59 | 1 | 2.20k | RC04020402000000ED | Vishay | RES, 2.20 k, 1%, 0.1 W, 0603 | 0603 |
| 89 | R64, R65, R66, R67, R68, R69, R70, R71 | 8 | 0 | J11PC403CJAMP-110 | Thin Film Technology | 0 Ohms Jumper Chip Resistor 0402 (1005 Metric) Anti-Sulfur, Current Sense, Flame Retardant Coating, Moisture Resistant, Safety Metal Pad | 0402 |
| 90 | R72, R74 | 2 | 4.7k | RC04020402000000ED | Vishay | 4.7 kOhms +/-5% 0.1W, 1/10W Chip Resistor 0402 (1005 Metric) | 0402 |
| 91 | T1 | 1 | | | Wurth Elektronik Midcom | Automotive AEC-Q200 Thick Film | |
| 92 | T2 | 1 | 870uH | 750510476 | Wurth Elektronik | Inductor, 870uH, TH | 18.77x15.16x13.72mm |
| 93 | TP16, TP17 | 2 | 0001 | | Keystone Electronics | Test Point, Miniature, Black, TH | Black Miniature Testpoint |
| 94 | U1 | 1 | | LM748100GQKQ1 | Texas Instruments | Zero Iq Reverse Polarity Protection Smart Diode Controller, DSN0008A (VSSOP-8) | DSN0008A |
| 95 | U2, U3 | 2 | | LM521000000 | Texas Instruments | 100V, 85 A GaN Half-Bridge Power Stage | QFN, PCLF, 16 |
| 96 | U4 | 1 | | LM521000000 | Texas Instruments | SIMPLE SWITCHER Power Converter, 2-V to 42-V, 1-A Buck Converter, SOT-23 | SOT-23 |
| 97 | U5 | 1 | | LM514600000 | Texas Instruments | Buck Switching Regulator IC, Positive Adjustable 1.2V to 42V, 1-A Buck Converter, SOT-23 | SOT-23 |
| 98 | U6 | 1 | | TPS7A203000000 | Texas Instruments | PowerSOIC (S 194), 3.0mm Width | PowerSOIC |
| 99 | U7 | 1 | | TPS7A203000000 | Texas Instruments | 300mA, Ultra-Low-Noise, Low IQ, High PSRR LDO | SOT23-5 |
| 100 | U8 | 1 | | INA181A03000 | Texas Instruments | 4.1 to 110 V, Bidirectional, Ultra-Precision Current Sense Amplifier With Enhanced PWM Rejection | INA181A03000 |
| 101 | U9 | 1 | | INA181A03000 | Texas Instruments | Bidirectional, Low- and High-Side Measurement, Multichannel, Voltage Output, Current-Sense Amplifier, (DSN0008A (SOT-6) | DSN0008A |
| 102 | U10 | 1 | | TLV900200000 | Texas Instruments | TLV900200000, DFN0008A (SOT-23 114x14x1) | DFN0008A |
| 103 | U11 | 1 | | TLV900200000 | Texas Instruments | Automotive +/- 5°C, 3-AVRMS Isolated Temperature Sensor With Analog Output With +/- 2 Seconds Response Time and 500V/RMS Working Voltage | TLV900200000 |
| 104 | U11 | 1 | | AFEG01A00000 | Texas Instruments | Powerline Communications Analog Front End, 7 to 26 V, -40 to 125 deg.C, 48-pin QFN (R6G248), Green (RoHS & no Br) | R6G248 |