

XXX### REV E1 Bill of Materials

| Item # | Designator | Quantity | Value | PartNumber | Manufacturer | Description | PackageReference |
|--------|--|----------|---------|----------------------|---------------------------|--|--|
| 1 | C1 | 1 | 0.1uF | GCJ188L8EL104K0A07D | MuRata | CAP, CERM, 0.1 uF, 100 V, +/- 10%, X8L, AEC-Q200 Grade 0, 0603 | 0603 |
| 2 | C2, C3 | 2 | 56uF | EEHZC1J560P | Panasonic | CAP, Polymer Hybrid, 56 uF, 63 V, +/- 20%, 30 ohm, 10x10 SMD | 10x10 |
| 3 | C4, C6 | 2 | 0.1uF | C0605C104K18ACU | Kemet | CAP, CERM, 0.1 uF, 100 V, +/- 10%, X7R, 0805 | 0805 |
| 4 | C5, C7, C8, C20, C21, C22, C23, C26, C27, C28, C29 | 11 | 4.7uF | GCM32DC72A475KE02L | MuRata | CAP, CERM, 4.7 uF, 100 V, +/- 10%, X7S, AEC-Q200 Grade 1, 1210 | 1210 |
| 5 | C9, C36, C37 | 3 | 0.1uF | CGA3E2XR1E104K080AA | TDK | CAP, CERM, 0.1 uF, 25 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603 | 0603 |
| 6 | C10 | 1 | 2.2uF | ECM21BR71E225KA73L | MuRata | CAP, CERM, 2.2 uF, 25 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0805 | 0805 |
| 7 | C11 | 1 | 1uF | GCM31CR24105KA03D | MuRata | CAP, CERM, 1 uF, 100 V, +/- 10%, X7R, AEC-Q200 Grade 1, 1206 | 1206 |
| 8 | C12 | 1 | 3300pF | GRM188R71E332KA01D | MuRata | CAP, CERM, 3300 pF, 25 V, +/- 10%, X7R, 0603 | 0603 |
| 9 | C13 | 1 | 0.01uF | GCM188R71H103KA37D | MuRata | CAP, CERM, 0.01 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603 | 0603 |
| 10 | C14 | 1 | 0.022uF | C0603C223K3RACTU | Kemet | CAP, CERM, 0.022 uF, 25 V, +/- 10%, X7R, 0603 | 0603 |
| 11 | C15 | 1 | 0.01uF | CGA3E2XR2A103K080AA | TDK | CAP, CERM, 0.01 uF, 100 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603 | 0603 |
| 12 | C16 | 1 | 0.047uF | CGA3E3X7S2A473K080AB | TDK | CAP, CERM, 0.047 uF, 100 V, +/- 10%, X7S, AEC-Q200 Grade 1, 0603 | 0603 |
| 13 | C17 | 1 | 0.47uF | GRM21BR72A474KA73L | MuRata | CAP, CERM, 0.47 uF, 100 V, +/- 10%, X7R, 0805 | 0805 |
| 14 | C18 | 1 | 0.47uF | GCM188R71C474KA85D | MuRata | CAP, CERM, 0.47 uF, 16 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603 | 0603 |
| 15 | C19, C24, C25 | 3 | 2.2uF | GRM188R71A225KE15D | MuRata | CAP, CERM, 2.2 uF, 10 V, +/- 10%, X7R, 0603 | 0603 |
| 16 | C30, C31, C32, C33, C34, C35 | 6 | 0.01uF | CGA2B3X7S2A103K050BB | TDK | CAP, CERM, 0.01 uF, 100 V, +/- 10%, X7S, AEC-Q200 Grade 1, 0402 | 0402 |
| 17 | C38, C39, C40, C41, C42, C47, C48, C49, C50, C51, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65 | 20 | 10uF | UMJ325KB7106KMHT | Taiyo Yuden | CAP, CERM, 10 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 1210 | 1210 |
| 18 | C43, C46 | 2 | 0.1uF | CGA3E2XR1H104K080AA | TDK | CAP, CERM, 0.1 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603 | 0603 |
| 19 | C44, C45 | 2 | 220pF | 0603T221KA12A | AVX | CAP, CERM, 220 pF, 100 V, +/- 10%, X7R, 0603 | 0603 |
| 20 | C52, C53 | 2 | 0.22uF | CGA3E3XR1H224K080AB | TDK | CAP, CERM, 0.22 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603 | 0603 |
| 21 | C54, C55 | 2 | 33pF | 06031A330JA12A | AVX | CAP, CERM, 33 pF, 100 V, +/- 5%, COG/NP0, 0603 | 0603 |
| 22 | C66 | 1 | 1uF | CGA3E1XR1E105K080AC | TDK | CAP, CERM, 1 uF, 25 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603 | 0603 |
| 23 | C67, C68 | 2 | 0.22uF | CL10B224K08VNPIC | Samsung | CAP, CERM, 0.22 uF, 16 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603 | 0603 |
| 24 | C69 | 1 | 100pF | CGA3E2NP01H101J080AA | TDK | CAP, CERM, 100 pF, 50 V, +/- 5%, COG/NP0, AEC-Q200 Grade 0, 0603 | 0603 |
| 25 | C70 | 1 | 3300pF | GRM1885C1H332JA01D | MuRata | CAP, CERM, 3300 pF, 50 V, +/- 5%, COG/NP0, 0603 | 0603 |
| 26 | C71 | 1 | 0.01uF | GCM188R71H103KA37D | MuRata | CAP, CERM, 0.01 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603 (stack on top of R17 resistor) | 0603 |
| 27 | D1 | 1 | 150V | SMBJ150A-13-F | Diodes Inc. | Diode, TVS, Unid, 150 V, 243 Vc, SMB | SMB |
| 28 | D2, D5 | 2 | 75V | 1N4148WS-7-F | Diodes Inc. | Diode, Switching, 75 V, 0.15 A, AEC-Q101, SOD-323 | SOD-323 |
| 29 | D3 | 1 | 33V | SMBJ33CA-13-F | Diodes Inc. | Diode, TVS, Bi, 33 V, SMB | SMB |
| 30 | D4 | 1 | Green | LTST-C190GKT | Lite-On | LED, Green, SMD | 1.6x0.6x0.8mm |
| 31 | D6 | 1 | 4.7V | MM3Z4V7S1TG | ON Semiconductor | Diode, Zener, 4.7 V, 300 mW, SOD-323 | SOD-323 |
| 32 | D7 | 1 | 56V | MM3Z563B1TG | ON Semiconductor | Diode, Zener, 56 V, 500 mW, AEC-Q101, SOD-123 | SOD-123 |
| 33 | D8 | 1 | Red | TS1-C170RKT | Lite-On | LED, Red, SMD | Red SMD LED |
| 34 | D9, D10, D11 | 3 | 100V | BAT46WJ.115 | Nexperia | Diode, Schottky, 100 V, 0.25 A, SOD-323F | SOD-323F |
| 35 | J1 | 1 | | 1714971 | Phoenix Contact | Receptacle, 9.52mm, 2x1, TH | Receptacle, 9.52mm, 2x1, TH |
| 36 | J2 | 1 | | 1040 | Keystone | TEST POINT SLOTTED .118", TH | Test point, TH Slot |
| 37 | J3 | 1 | | EM292902-UL | Eaton | Terminal Block, 10.16mm, 2x1, Tin, R/A, TH | Terminal Block, 10.16mm, 2x1, TH |
| 38 | J4 | 1 | | TSW-114-07-G-S | Samtec | Header, 100mil, 14x1, Gold, TH | 14x1 Header |
| 39 | L1 | 1 | 1.2uH | XAL1060-122MEB | Coilcraft | Inductor, Shielded, Composite, 1.2 uH, 26.3 A, 0.0025 ohm, AEC-Q200 Grade 1, SMD | Inductor, 10x6x11_3mm |
| 40 | L2, L3 | 2 | 6.8uH | XGL1010-103MED | Coilcraft | 6.8 uH Shielded Molded Inductor 21.2 A 7.0mOhm Max Nonstandard | SMT_IND_10MM0_11 MM3 |
| 41 | Q1 | 1 | | NVMF5S0612N1TG1 | onsemi | Single N-Channel Power MOSFET 60V, 225A, 1.65ohm | DFNS |
| 42 | Q2 | 1 | 200V | IPB320N20N3 G | Infineon Technologies | MOSFET, N-CH, 200 V, 34 A, DDPAK | DDPAK |
| 43 | Q3 | 1 | 60V | ZN7002KW | Fairchild Semiconductor | MOSFET, N-CH, 60 V, 0.31 A, SOT-323 | SOT-323 |
| 44 | Q4 | 1 | 160 V | PMBS15S1_215 | Nexperia | Transistor, NPN, 160 V, 0.3 A, SOT-23 | SOT-23 |
| 45 | Q5, Q6, Q7, Q8 | 4 | 60V | NVMF5S0612N1WFAFT1G | ON Semiconductor | MOSFET, N-CH, 60 V, 17 A, AEC-Q101, SO-8FL | SO-8FL |
| 46 | R1 | 1 | 0.001 | WLSL20101L000FEA | Vishay-Dale | RES, 0.001, 1%, 0.5 W, 2010 | 2010 |
| 47 | R2 | 1 | 12k | CRCW060312K0JNEA | Vishay-Dale | RES, 12 k, 5%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 48 | R3, R5 | 2 | 0 | ERJ-3GEY0R00V | Panasonic | RES, 0, 5%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 49 | R4, R13, R25, R28, R36, R38, R44, R45, R46, R47 | 10 | 100k | CRCW0603100KFKEA | Vishay-Dale | RES, 100 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 50 | R6, R7 | 2 | | | KOA Speer | 120 mOhms +/- 2W Chip Resistor 2512 (6432 Metric) Automotive AEC-Q200, Current Sense Metal Element | 2512 |
| 51 | R8 | 1 | 20.0k | ERJ-6EFP2002V | Panasonic | RES, 20.0 k, 1%, 0.125 W, AEC-Q200 Grade 0, 0805 | 0805 |
| 52 | R9 | 1 | 4.75k | CRCW0603475KFKEA | Vishay-Dale | RES, 4.75 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 53 | R10, R16 | 2 | 10k | CRCW120610K0JNEA | Vishay-Dale | RES, 10 k, 5%, 0.25 W, AEC-Q200 Grade 0, 1206 | 1206 |
| 54 | R11 | 1 | 1.82k | CRCW06031K82KFKEA | Vishay-Dale | RES, 1.82 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 55 | R12 | 1 | 50 | CRCW060350R0FKEA | Vishay-Dale | RES, 50, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 56 | R14 | 1 | 1.74k | CRCW06031K74FKEA | Vishay-Dale | RES, 1.74 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 57 | R15, R19, R33, R34 | 4 | 10.0k | RMCF0603F10K0 | Stackpole Electronics Inc | RES, 10.0 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 58 | R17 | 1 | 1.07k | CRCW06031K07FKEA | Vishay-Dale | RES, 1.07 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 59 | R18 | 1 | 100 | CRCW0603100RJNEA | Vishay-Dale | RES, 100, 5%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 60 | R20 | 1 | 3.48k | CRCW06033K48FKEA | Vishay-Dale | RES, 3.48 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 61 | R21 | 1 | 15.4k | CRCW060315K4FKEA | Vishay-Dale | RES, 15.4 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 62 | R22 | 1 | 1 | RC0603FR-071RL | Yageo | RES, 1.00, 1%, 0.1 W, 0603 | 0603 |
| 63 | R23, R24, R26, R27 | 4 | 0 | ERJ-2GE0R00X | Panasonic | RES, 0, 5%, 0.1 W, AEC-Q200 Grade 0, 0402 | 0402 |
| 64 | R29, R30 | 2 | 10.5k | CRCW060310K5FKEA | Vishay-Dale | RES, 10.5 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 65 | R31, R32 | 2 | 2.2 | ERJ-6EY12R2V | Panasonic | RES, 2.2, 5%, 0.125 W, AEC-Q200 Grade 0, 0805 | 0805 |
| 66 | R37, R40 | 2 | 0 | CRCW0603000Z02EA | Vishay-Dale | RES, 0, 5%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 67 | R38, R39 | 2 | 100 | CRCW0603100RFKEA | Vishay-Dale | RES, 100, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 68 | R41 | 1 | 47.5k | CRCW060347K5FKEA | Vishay-Dale | RES, 47.5 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 69 | R42 | 1 | 1.05k | CRCW06031K05FKEA | Vishay-Dale | RES, 1.05 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 70 | R43 | 1 | 4.32k | CRCW06034K32FKEA | Vishay-Dale | RES, 4.32 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 71 | R49 | 1 | 54.9k | CRCW060354K9FKEA | Vishay-Dale | RES, 54.9 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 72 | R49 | 1 | 11.5k | CRCW060311K5FKEA | Vishay-Dale | RES, 11.5 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 73 | R50 | 1 | 976 | CRCW0603976RFKEA | Vishay-Dale | RES, 976, 1%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603 |
| 74 | R51 | 1 | 0 | CRCW0603000Z02EA | Vishay-Dale | RES, 0, 5%, 0.1 W, AEC-Q200 Grade 0, 0603 | 0603L |
| 75 | SH-J1 | 1 | | M7582-05 | Harwin | Single Operation 2.54mm Pitch Open Top Jumper Socket | Single Operation 2.54mm Pitch Open Top Jumper Socket |
| 76 | TP1, TP2, TP3, TP4, TP5 | 5 | | 5015 | Keystone Electronics | Test Point, Miniature, SMT | Testpoint_Keystone, Miniature |
| 77 | U1 | 1 | | LM7493QRGEQ1 | Texas Instruments | Ideal Diode Surge Stopper with Circuit breaker, overvoltage protection and fault output | VQFN24 |
| 78 | U2 | 1 | | LM5143QRHARQ1 | Texas Instruments | Automotive 3.5-V to 65-V Dual Synchronous Buck Controller With Low IQ | VQFN40 |

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