# BILLOFMATERIALS BOM

| COUNT | RefDes | Value | Description | Size | Part_Number | MFR | Area |
|---|---|---|---|---|---|---|---|
| 1 | C1 | 0.1uF | Capacitor, Ceramic, 16V, X7R, 10% | 0402 | Std | Std | 2800 |
| 3 | C10, C11, C12 | 47uF | Capacitor, Ceramic, 10V, X5R, 20% | 1206 | GRM31CR61A476I | muRata | 15390 |
| 1 | C14 | 2700pF | Capacitor, Ceramic, 2200pF, 2KV, X7R, 20% | 1812 | 1812CG222MAT | AVX | 38080 |
| 2 | C15, C16 | 1uF | Capacitor, Ceramic, 16V, X7R, 10% | 0805 | Std | Std | 10560 |
| 1 | C17 | 270pF | Capacitor, Ceramic, 50V, X7R, 10% | 0402 | Std | Std | 2800 |
| 1 | C18 | 4700 pF | Capacitor, Ceramic, Low Inductance, vvV, [temp], [tol] | 0603 | Std | muRata | 5650 |
| 1 | C19 | 0.47 uF | Capacitor, Ceramic, Low Inductance, 6.3V, [temp], [tol] | 0603 | Std | muRata | 5650 |
| 2 | C2, C31 | 0.1uF | Capacitor, Ceramic, 100V, X7R, 10% | 0805 | Std | TDK | 10560 |
| 2 | C20, C24 | 0.01uF | Capacitor, Ceramic, 25V, X7R, 10% | 0402 | Std | Std | 2800 |
| 1 | C21 | 100pF | Capacitor, Ceramic, 50V, X7R, 10% | 0402 | Std | Std | 2800 |
| 1 | C22 | Open | Capacitor, Ceramic, Low Inductance, vvV, [temp], [tol] | 0603 | Std | muRata | 5650 |
| 1 | C23 | 1 uF | Capacitor, Ceramic, Low Inductance, 6.3V, [temp], [tol] | 0603 | Std | muRata | 5650 |
| 2 | C25, C26 | 10uF | Capacitor, Ceramic, 10V, X5R, 20% | 1206 | Std | Std | 15390 |
| 1 | C27 | 560 pF | Capacitor, Ceramic, Low Inductance, vvV, [temp], [tol] | 0603 | Std | muRata | 5650 |
| 2 | C28, C29 | 2.2uF | Capacitor, Ceramic, 100V, X7R, 10% | 1210 | C3225X7R2A225K | TDK | 24200 |
| 1 | C3 | 47uF | Capacitor, Aluminum, 63V, ±20% | 8x10.2mm | EEEFK1J470P | Panasonic | 161,100 |
| 3 | C5, C6, C7 | 22uF | Capacitor, Ceramic, 10V, X5R, 20% | 1206 | Std | Std | 15390 |
| 2 | C8, C13 | 330uF | Capacitor, Aluminum, SMT, 10V, 20% | 7343(D) | 10TPB330M | Sanyo | 62100 |
| 1 | C9 | 5.6uF | Capacitor, Ceramic, 25V, X5R, 20% | 1206 | Std | TDK | 15390 |
| 1 | D1 | MURA120 | Diode, Rectifier, 1A, 200V | SMA | MURA120 | On Semi | 29520 |
| 3 | D2, D3, D4 | BAS16HT1 | Diode, Swithcing, 200 mA, 75V | SOD-323 | BAS16 | On Semi | 10.71 mm |
| 1 | D5 | SMAJ70A | Diode, SMT TVS 400W, 70-V | SMA | SMAJ70A | Diodes | 52080 |
| 2 | D6, D7 | MMSD914 | Diode, Switching, 100-V, 200-mA, 225-mW | SOD-123 | MMSD914T1 | On Semi | 13419 |
| 1 | D8 | CDBHD1100L | Bridge Rectifier, 100V, 1A, High Density, SMD | MINI DIP4 | CDBHD1100L | Comchip | 60528 |
| 3 | J1, J2, J3 | ED555/2DS | Terminal Block, 2-pin, 6-A, 3.5mm | 0.27 x 0.25 inch | ED555/2DS | OST | 70125 |
| 1 | J4 | PEC02SAAN | Header, Male 2-pin, 100mil spacing, | 0.100 inch x 2 | PEC02SAAN | Sullins | 20000 |
| 2 | L1, L2 | 1uH | Inductor, SMT, 4.4A, 17.7milliohm | 6.1x8.89mm | UP1B-1R0 | Coiltronics | 90000 |
| 1 | L3 | 3.3uH | Inductor, SMT, 1.53A, 32milliohm | 5.1x5.1mm | MSS5131-332MX | Coilcraft | 65 |
| 1 | Q1 | IRF540NSPBF | Transistor, NFET, 100V, 33A, 44 millohm | D2PAK | IRF540NSPBF | IR | 616250 |
| 2 | Q2, Q3 | SiR426 | MOSFET, NChannel, 40V, 9 nC, 10.0 millohm | PWRPAK S0-8 | SiR426 | Vishay-Siliconix | 85057 |
| 1 | Q4 | IPB200N15N3 | MOSFET, N-ch, 200-V, 32-milliOhms | SMD-220 | SiR838DP | Infineon | 326600 |
| 3 | Q5, Q6, Q7 | MMBT3906 | Bipolar, PNP, 40V, 200mA, 225mW | SOT23 | MMBT3906LT1 | On Semi | 14105 |
| 1 | R1 | 0.01 | Resistor, Metal Film, 1/4 watt, ± 5% | 1206 | Std | Std | 15390 |

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|---|---|---|---|---|---|---|---|
| 1 | R10 | 20 | Resistor, Metal Film, 1/10 watt, ± 5% | 1206 | Std | Std | 15390 |
| 1 | R11 | 10 | Resistor, Metal Film, 1/4 watt, ± 5% | 1206 | Std | Std | 15390 |
| 1 | R12 | 20k | Resistor, Chip, 1/16W, 1% | 0402 | Std | Std | 2800 |
| 1 | R13 | 0.15 | Resistor, xx milliOhm, 1W, yy% | 2512 | STD | STD | 35100 |
| 2 | R14, R15 | 499 | Resistor, Chip, 1/16W, 1% | 0402 | Std | Std | 2800 |
| 1 | R16 | 49.9 | Resistor, Chip, 1/16W, 1% | 0402 | Std | Std | 2800 |
| 2 | R17, R27 | 12.1k | Resistor, Chip, 1/16W, 1% | 0402 | Std | Std | 2800 |
| 1 | R18 | 1K | Resistor, Chip, 1/16W, 1% | 0603 | Std | Vishay | 9100 |
| 1 | R19 | 54.9K | Resistor, Chip, 1/16W, 1% | 0402 | Std | Std | 2800 |
| 1 | R2 | 205k | Resistor, Metal Film, 1/4 watt, ± 5% | 1206 | Std | Std | 15390 |
| 1 | R20 | 95.3K | Resistor, Chip, 1/16W, 1% | 0402 | Std | Std | 2800 |
| 1 | R21 | 383 | Resistor, Chip, 1/16W, 1% | 0402 | Std | Std | 2800 |
| 1 | R22 | Open | Resistor, Chip, 1/16W, 0.1% | 0603 | Std | Vishay | 9,100 |
| 1 | R23 | 2.94k | Resistor, Chip, 1/16W, 1% | 0402 | Std | Std | 2800 |
| 1 | R24 | 4.99K | Resistor, Chip, 1/16W, 1% | 0402 | Std | Std | 2800 |
| 2 | R25, R32 | Open | Resistor, Chip, 1/16W, 1% | 0603 | Std | Vishay | 9100 |
| 1 | R26 | 150 | Resistor, Chip, 1/16W, 1% | 0603 | Std | Vishay | 9100 |
| 1 | R28 | 49.9 | Resistor, Chip, 1/16W, 1% | 0603 | Std | Vishay | 9100 |
| 1 | R29 | 4.99K | Resistor, Chip, 1/16W, 1% | 0603 | Std | Vishay | 9100 |
| 1 | R3 | 10 | Resistor, Chip, 1/16W, 5% | 0402 | Std | Std | 2800 |
| 1 | R30 | 4.7 | Resistor, Chip, 1/16W, 1% | 0603 | Std | Vishay | 9100 |
| 1 | R31 | 49.9k | Resistor, Metal Film, 1/4 watt, ± 5% | 1206 | Std | Std | 15390 |
| 1 | R4 | 15K | Resistor, Chip, 1/16W, 1% | 0603 | Std | Vishay | 9100 |
| 1 | R5 | 28k | Resistor, Chip, 1/16W, 5% | 0402 | Std | Std | 2800 |
| 1 | R6 | 100k | Resistor, Metal Film, 1/4 watt, ± 5% | 1206 | Std | Std | 15390 |
| 1 | R7 | 6.04k | Resistor, Chip, 1/16W, 5% | 0402 | Std | Std | 2800 |
| 1 | R8 | 39K | Resistor, Chip, 1W, 5% | 2512 | Std | Std | 35100 |
| 1 | R9 | 21.5k | Resistor, Metal Film, 1/4 watt, ± 5% | 1206 | Std | Std | 15390 |
| 1 | T1 | 82.5 uH max. | Transformer, | 30x30.7 mm | | Coilcraft | 1024 mm |
| 8 | TP1, TP2, TP5, TP7, TP9, TP10, TP12, TP13 | 5000 | Test Point, Red, Thru Hole Color Keyed | 0.100 x 0.100 ir | 5000 | Keystone | 10 |
| 1 | TP11 | 5002 | Test Point, White, Thru Hole Color Keyed | 0.100 x 0.100 ir | 5002 | Keystone | 10 |
| 4 | TP3, TP4, TP6, TP8 | 5001 | Test Point, Black, Thru Hole Color Keyed | 0.100 x 0.100 ir | 5001 | Keystone | 10 |
| 1 | U1 | TPS2491DGS | IC, Latchable Positive High-Voltage Power-Limiting Hot Swap C | DGS10 | TPS2491DGS | TI | 26780 |
| 1 | U2 | UCC2809-2 | IC, Economy Primary-Side Controller, xx-V Startup | DGK8 | UCC809xP-2 | TI | 35630 |

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|---|---|---|---|---|---|---|---|
| 1 | U3 | H11A817 | IC, Optocoupler, 5300-V, 50-160% CTR | 0.435 x 0.210 ir | H11A817 | QT Optoelectronics | 93500 |
| 1 | U4 | TLV431AI | IC, Shunt Regulator, 1.24V Ref, 6V, 10mA, 1% | SOT23-5 | TLV431AIDBVR | TI | 16384 |

Notes:
1. These assemblies are ESD sensitive, ESD precautions shall be observed.
2. These assemblies must be clean and free from flux and all contaminants.
   Use of no clean flux is not acceptable.
3. These assemblies must comply with workmanship standards IPC-A-610 Class 2.
4. Ref designators marked with an asterisk ('**') cannot be substituted.
   All other components can be substituted with equivalent MFG's components.

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