



BILL OF MATERIALS
PROJECT NAME: EVLSPIN32G0A1 Revision 1.1

12 December 2024

(*) As alternative, components with higher/better ratings may be used.
(**) If not specified, a generic PN fitting the enlisted characteristics is used. The same apply for "equivalent" PNs.

| If this field is shown is mandatory to use this type | | | | | | | | | | | |
|--|----------|---------------------------------|---|--------------------|------------|----------------|--------------|--------------------------|--------------------|--|------------------|
| | Quantity | Reference | Description | Part / Value | Voltage(*) | Power(*) | Tolerance(*) | Package | Manufacturer | Manufacturer's ordering code / Orderable Part Number(**) | Additional Notes |
| 1 | 6 | C1,C11,C13,C14,C15,C53 | SMT ceramic capacitor | 100nF | 10V | | | Size 0603 (1608 Metric) | WURTH ELEKTRONIK | 885012206020 or equivalent | |
| 2 | 1 | C2 | SMT ceramic capacitor | 4700nF | 10V | | | Size 0603 (1608 Metric) | WURTH ELEKTRONIK | 885012106012 | |
| 3 | 1 | C3 | SMT ceramic capacitor | 10nF | 10V | | | Size 0603 (1608 Metric) | | | |
| 4 | 1 | C4 | SMT ceramic capacitor | 47uF | 10V | | | Size 1210 (3225 Metric) | WURTH ELEKTRONIK | 885012109007 | |
| 5 | 3 | C5,C6,C10 | SMT ceramic capacitor | 1000nF | 25V | | 10% | Size 0603 (1608 Metric) | WURTH ELEKTRONIK | 885012206076 or equivalent | |
| 6 | 1 | C7 | SMT ceramic capacitor | 10uF | 25V | | | Size 1206 (3216 Metric) | WURTH ELEKTRONIK | 885012208069 | |
| 7 | 1 | C8 | SMT ceramic capacitor | 100nF | 25V | | | Size 0603 (1608 Metric) | | | |
| 8 | 4 | C9,C18,C19,C20 | SMT ceramic capacitor | 220nF | 100V | | | Size 1206 (3216 Metric) | | | |
| 9 | 2 | C12,C29 | SMT ceramic capacitor | 4.7nF | 6.3V | | | Size 0603 (1608 Metric) | | | |
| 10 | 2 | C16,C17 | Aluminum Electrolytic capacitor SMD | 220uF | 63V | | 20% | Diam. 12.5 mm - 13x13 mm | WURTH ELEKTRONIK | 865080762015/865060762009 | |
| 11 | 3 | C21,C48,C50 | SMT ceramic capacitor | NM | 6.3V | | | Size 0603 (1608 Metric) | | | Not mounted |
| 12 | 3 | C26,C49,C51 | SMT ceramic capacitor | 470pF | 50V | | | Size 0603 (1608 Metric) | | | |
| 13 | 1 | C28 | SMT ceramic capacitor | 1nF | 6.3V | | | Size 0603 (1608 Metric) | | | |
| 14 | 1 | C30 | SMT ceramic capacitor | 10nF | 6.3V | | | Size 0603 (1608 Metric) | | | |
| 15 | 1 | C31 | SMT ceramic capacitor | 1uF | 25V | | | Size 0603 (1608 Metric) | WURTH ELEKTRONIK | 885012206076 or equivalent | |
| 16 | 3 | C32,C33,C34 | SMT ceramic capacitor | 1.5nF | 50V | | | Size 0603 (1608 Metric) | | | |
| 17 | 8 | C35,C36,C38,C43,C44,C45,C46,C47 | SMT ceramic capacitor | 100nF | 6.3V | | 10% | Size 0603 (1608 Metric) | | | |
| 18 | 2 | C37,C39 | SMT ceramic capacitor | 1uF | 6.3V | | 10% | Size 0603 (1608 Metric) | WURTH ELEKTRONIK | 885012206076 | |
| 19 | 1 | C40 | SMT ceramic capacitor | 10nF | 6.3V | | 10% | Size 0603 (1608 Metric) | | | |
| 20 | 2 | C41,C42 | SMT ceramic capacitor | 10pF | 6.3V | | 10% | Size 0603 (1608 Metric) | | | |
| 21 | 1 | C52 | SMT ceramic capacitor | 1000nF | 10V | | | Size 0603 (1608 Metric) | | | |
| 22 | 1 | D1 | Schottky Rectifier | STPS0560Z | | | | SOD-123 | STMicroelectronics | STPS0560Z | |
| 23 | 6 | D2,D3,D4,D5,D6,D7 | Small Signal Fast Switching Diode | 1N4148WS | | | | SOD-323F | VISHAY | 1N4148WS-E3-08 / -E3-18 or equivalent | |
| 24 | 3 | D11,D12,D13 | 40V, 300mA Small signal Schottky Diode | BAT54J | 40 V | | | SOD-323 | STMicroelectronics | BAT54JFILM or equivalent | |
| 25 | 1 | D14 | 35 A - 8/20 us, 22 V TVS in QFN-2L | ESDA25P35-1U1M | | | | | STMicroelectronics | ESDA25P35-1U1M | |
| 26 | 3 | JP2,JP3,JP4 | Strip connector 2 pos, 2.54 mm | STRIP 1x2 | | | | 1x2 pins | WURTH ELEKTRONIK | 61300211121 or equivalent | |
| 27 | 1 | JUMPER2 | Jumper, 2.54 mm | Jumper | | | | | WURTH ELEKTRONIK | 60900213421or equivalent | |
| 28 | 3 | J1,J8,J9 | Strip connector 2 pos, 2.54 mm | STRIP 1x2 | | | | 1x2 pins, 2.54mm | | NM | Not mounted |
| 29 | 1 | J2 | Strip connector 3 pos, 2.54 mm | STRIP 1x3 | | | | 1x3 pins | WURTH ELEKTRONIK | 61300311121 or equivalent | |
| 30 | 1 | J3 | Horizontal Entry Modular w. Rising Cage Clamp, Serie 2135 - 5.08 mm | MORSV-508-2P_screw | | | | Pitch 5.08 mm | WURTH ELEKTRONIK | 691213510002 or equivalent | |
| 31 | 1 | J4 | Horizontal Entry Modular w. Rising Cage Clamp, Serie 2135 - 5.08 mm | MORSV-508-3P_screw | | | | Pitch 5.08 mm | WURTH ELEKTRONIK | 691213510003 or equivalent | |
| 32 | 1 | J5 | Strip connector 5 pos, 2.54 mm | STRIP 1x5 | | | | 1x5 pins | WURTH ELEKTRONIK | 61300511121 or equivalent | |
| 33 | 1 | J6 | WR-COM USB 2.0 Type C Receptacle Horizontal | USB 2.0 Type C | | | | | WURTH ELEKTRONIK | 629722000214 | |
| 34 | 1 | J7 | SMT_Receptacle,16pins,20vdc | STRIP 2x5 | | | | | WURTH ELEKTRONIK | 62201021121 or FTSH-105-01-F-D-K | |
| 35 | 2 | LED1,LED2 | WL-SMCW SMT Mono-color Chip LED Waterclear | YELLOW | | | | Size 0603 | WURTH ELEKTRONIK | 150060YS75000 or Equivalent | |
| 36 | 1 | LED3 | WL-SMCW SMT Mono-color Chip LED Waterclear | RED | | | | Size 0805 | WURTH ELEKTRONIK | 150080RS75000 or equivalent | |
| 37 | 1 | LED4 | LED indicators, PLCC-4 Red/Yellow Green | RED-GREEN LED | | | | PLCC 4 | AVAGO | HSMF-A201-A00J1 or equivalent | |
| 38 | 1 | L1 | WE-MAPI SMT Power Inductor 22uH 0.6 A | 22uH | | | 20% | 3015 | WURTH ELEKTRONIK | 74438335220 or equivalent | |
| 39 | 1 | NTC1 | NTC Thermistor | 10k | | 100mW | +/- 1% | Size 0603 | muRata | NCP18XH103F03RB | |
| 40 | 6 | Q1,Q2,Q3,Q4,Q5,Q6 | N-channel 60 V, 0.0031 Ohm typ., 80 A STripFET F7 Power MOSFET | STD140N6F7 | | | | DPAK | STMicroelectronics | STD140N6F7 | |
| 41 | 1 | Q7 | NPN General Purposes Transistor | BC847B | | | | SOT23 | Nexperia | BC847B or equivalent | |
| 42 | 1 | R1 | SMT resistor | 10k | | 0.1W | | Size 0603 (1608 Metric) | | | |
| 43 | 2 | R2,R3 | SMT resistor | 120R | | 0.1W | | Size 0603 (1608 Metric) | | | |
| 44 | 2 | R4,R5 | SMT resistor | 200R | | 0.1W | | Size 0603 (1608 Metric) | | | |
| 45 | 3 | R6,R7,R8 | SMT resistor | 4.7k | | 0.125W | 5% | Size 0805 (2012 Metric) | | | |
| 46 | 6 | R9,R10,R11,R15,R16,R17 | SMT resistor | 0R | | 0.0625W (1/16) | | Size 0603 (1608 Metric) | | | |
| 47 | 6 | R12,R13,R14,R18,R19,R20 | SMT resistor | 120R | | 0.0625W (1/16) | | Size 0603 (1608 Metric) | | | |
| 48 | 6 | R21,R22,R68,R69,R70,R71 | SMT resistor | 0.02R | | 2W | 1% | Size 2512 | TE CONNECTIVITY | TLRP3A20DR020FTE | |
| 49 | 3 | R26,R72,R78 | SMT resistor | 7.5k | | 0.0625W (1/16) | 1% | Size 0603 (1608 Metric) | | | |
| 50 | 6 | R30,R34,R74,R77,R80,R83 | SMT resistor | 15k | | 0.0625W (1/16) | 1% | Size 0603 (1608 Metric) | | | |



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| | Quantity | Reference | Description | Part / Value | Voltage(*) | Power(*) | Tolerance(*) | Package | Manufacturer | Manufacturer's ordering code / Orderable Part Number(**) | Additional Notes |
| 51 | 6 | R31,R33,R73,R76,R79,R82 | SMT resistor | 1k | | 0.0625W (1/16) | 1% | Size 0603 (1608 Metric) | | | |
| 52 | 3 | R32,R75,R81 | SMT resistor | 220R | | 0.0625W (1/16) | 1% | Size 0603 (1608 Metric) | | | |
| 53 | 3 | R36,R37,R38 | SMT resistor | 4.7k | | 0.1W | 5% | Size 0603 | | | |
| 54 | 1 | R39 | SMT resistor | 169k | | 0.0625W (1/16) | 1% | Size 0603 (1608 Metric) | | | |
| 55 | 1 | R40 | SMT resistor | 18k | | 0.0625W (1/16) | 1% | Size 0603 (1608 Metric) | | | |
| 56 | 3 | R41,R42,R44 | SMT resistor | 330R | | 0.1W | 5% | Size 0603 | | | |
| 57 | 3 | R43,R84,R85 | SMT resistor | 3k | | 0.0625W (1/16) | 1% | Size 0603 (1608 Metric) | | | |
| 58 | 1 | R45 | SMT resistor | 9.31k | | 0.0625W (1/16) | 1% | Size 0603 (1608 Metric) | | | |
| 59 | 1 | R46 | SMT resistor | 910R | | 0.0625W (1/16) | 1% | Size 0603 (1608 Metric) | | | |
| 60 | 2 | R47,R57 | SMT resistor | 10k | | 0.1W | 5% | Size 0603 (1608 Metric) | | | |
| 61 | 4 | R48,R56,R61,R62 | SMT resistor | 100R | | 0.1W | 5% | Size 0603 (1608 Metric) | | | |
| 62 | 1 | R49 | SMT resistor | 36k | | 0.1W | 5% | Size 0603 (1608 Metric) | | | |
| 63 | 1 | R50 | SMT resistor | 1.5k | | 0.1W | 5% | Size 0603 (1608 Metric) | | | |
| 64 | 2 | R52,R54 | SMT resistor | 4.7k | | 0.1W | 1% | Size 0603 (1608 Metric) | | | |
| 65 | 1 | R53 | SMT resistor | 2.7k | | 0.1W | 5% | Size 0603 (1608 Metric) | | | |
| 66 | 1 | R55 | SMT resistor | 4.7k | | 0.1W | 5% | Size 0603 (1608 Metric) | | | |
| 67 | 1 | R58 | SMT resistor | NM | | 0.1W | 5% | Size 0603 (1608 Metric) | | | Not mounted |
| 68 | 2 | R59,R60 | SMT resistor | 100k | | 0.1W | 5% | Size 0603 (1608 Metric) | | | |
| 69 | 2 | R63,R64 | SMT resistor | 5.1k | | 0.1W | 5% | Size 0603 (1608 Metric) | | | |
| 70 | 3 | R65,R66,R67 | SMT resistor | 20k | | 0.1W | 5% | Size 0603 | | | |
| 71 | 3 | SB1,SB12,SB14 | SMT resistor | NM | | | | Size 0603 | | | Not mounted |
| 72 | 4 | SB2,SB10,SB11,SB13 | SMT resistor | 0R | | | | Size 0603 | | | |
| 73 | 5 | SB5,SB6,SB7,SB8,SB9 | SMT resistor | 0R | | | | Size 0603 (1608 Metric) | | | |
| 74 | 3 | SW1,SW2,SW3 | Tactile Switch - 6x6 J-bend SMT | WS-TASV J-Bend SMT | | | | | WURTH ELEKTRONIK | 430483025816 or equivalent | |
| 75 | 13 | TP1,TP2,TP3,TP9,TP12,TP13,TP14,TP15,TP16,TP17,TP18,TP19,TP20 | 50 mils SMD PAD | TP-SMD-diam1_27mm | | | | Copper pad | | | |
| 76 | 5 | TP4,TP5,TP6,TP7,TP8 | 65x128 mils SMD Hardware Test Points | TP-SMD-S1751-46R | | | | SMD 65x128 Pad | HARWIN | S1751-46R or Equivalent | |
| 77 | 1 | TR1 | 3362 -1/4 ? Square Trimpot Trimming Potentiometer | 100k | | 0.5W (1/2) | +/- 10% | 3362P | Bourns | 3362P-1-104 LF | |
| 78 | 1 | U3 | Ultra low drop and low noise BiCMOS voltage regulators | LD3985M33R | | | | SOT23-5L | STMicroelectronics | LD3985M33R | |
| 79 | 1 | U4 | Common-mode filter and ESD protection for USB 2.0 and MIPI/MDDI interfaces | ECMF02-2AMX6 | | | | | STMicroelectronics | ECMF02-2AMX6 | |
| 80 | 1 | U5 | Medium-density performance line ARM®-based 32-bit MCU with 128 KB Flash, USB, CAN, 7 timers, 2 ADCs, 9 com. interfaces | STM32F103CBT6 | | | | LQFP48 - 7x7 mm | STMicroelectronics | STM32F103CBT6 | |
| 81 | 1 | U6 | STSPIN32G0A1 Three-phase controller with MCU | STSPIN32G0A1 | | | | VQOFPN 7 x 7 x 1.0-48L | STMicroelectronics | STSPIN32G0A1 | |
| 82 | 1 | X1 | CRYSTAL 8.0000MHZ 8pF SMD | NX3225CD-CRYSTAL | | | | NDK NX3225GD | NDK | NX3225GD-8MHZ-EXS00A-CG04874 or equivalent | |