



EVSPIN32F02Q1S1 - Bill of materials

Reference	Part Value	Description	Package	Manufacturer	Part Number
C1,C19,C20,C21,C23,C30,C35,C41,C43,C47,C53,C55,C56,C62,C63,C64,C65	100nF/25V	SMT Ceramic Capacitor	Size 0603	WURTH ELEKTRONIK	885012206071 or Equivalent
C2,C72	220nF/25V	SMT ceramic capacitor	Size 0603	WURTH ELEKTRONIK	885012206073 or Equivalent
C3,C12,C26,C70	1uF/50V	SMT ceramic capacitor	Size 0805	WURTH ELEKTRONIK	885012207103 or Equivalent
C4,C7,C13,C17,C25,C32,C33,C40,C74	N.M.	SMT ceramic capacitor	Size 0603		
C6,C15,C29	4.7pF/50V	SMT Ceramic Capacitor	Size 0603	WURTH ELEKTRONIK	885012006049 or Equivalent
C8	N.M.	Film Capacitor	4x13 mm, Pitch 10 mm	WURTH ELEKTRONIK	890334023006 or equivalent
C9	100nF/250V	SMT Ceramic Capacitor	Size 1210	TDK	CGA6M3X7R2E104M200AE or equivalent
C10,C11,C59,C60	10pF/50V	SMT Ceramic Capacitor	Size 0603	WURTH ELEKTRONIK	885012006051 or Equivalent
C16	4.7nF/25V	SMT Ceramic Capacitor	Size 0603	WURTH ELEKTRONIK	885012206063 or Equivalent
C18,C80	47nF/25V	SMT Ceramic Capacitor	Size 0603	WURTH ELEKTRONIK	885012206069 or Equivalent
C22,C36,C42	1nF/25V	SMT Ceramic Capacitor	Size 0603	WURTH ELEKTRONIK	885012206059 or Equivalent
C24	4.7uF/10V	SMT Ceramic Capacitor	Size 0805	WURTH ELEKTRONIK	885012207025 or Equivalent
C27	33pF/25V	SMT Ceramic Capacitor	Size 0603	WURTH ELEKTRONIK	885012006035 or Equivalent
C34	3.3nF/25V	SMT Ceramic Capacitor	Size 0603	WURTH ELEKTRONIK	885012206062 or Equivalent
C37,C38,C39	10pF/10V	SMT Ceramic Capacitor	Size 0603	WURTH ELEKTRONIK	885012006002 or Equivalent
C45	22uF/25V	SMT Aluminum Elect. Capacitor	5x5.4 mm	WURTH ELEKTRONIK	865090442004 or equivalent
C48	10uF/10V	SMT Ceramic Capacitor	Size 1206	WURTH ELEKTRONIK	885012208018 or Equivalent
C54,C58	1uF/10V	SMT Ceramic Capacitor	Size 0603	WURTH ELEKTRONIK	885012206026 or Equivalent
C57	10nF/25V	SMT Ceramic Capacitor	Size 0603	WURTH ELEKTRONIK	885012206065 or Equivalent
C61	100nF/50V	SMT Ceramic Capacitor	Size 0603	WURTH ELEKTRONIK	885012206095 or Equivalent
C69A	N.M.	THT Electrolytic Capacitor	Radial p7.5 d18h25	Rubycon	450BXW68MEFC18X25 or Equivalent
C69	270uF/250V	THT Electrolytic Capacitor	Radial p10 d22h27	Nichicon	LGN2E271MELZ25 or equivalent
C71	100nF/50V	SMT ceramic capacitor	Size 0805	WURTH ELEKTRONIK	885012207098 or Equivalent
C73	1nF/10V	SMT ceramic capacitor	Size 0603	WURTH ELEKTRONIK	885012206008 or Equivalent
C75	47uF/20V	Low ESR series of robust MnO2 solid electrolyte capacitors	D / E	AVX	TPS Series or Equivalent
C76	1nF/50V	SMT ceramic capacitor	Size 0603	WURTH ELEKTRONIK	885012206083 or Equivalent
C77,C78,C79	100pF	SMT ceramic capacitor	Size 0603	WURTH ELEKTRONIK	885012206065 or Equivalent
C81	4.7uF/50V	SMT Ceramic Capacitor	Size 1206	WURTH ELEKTRONIK	885012208094 or Equivalent
D1,D4,D7	N.M.	Turbo 2 Ultrafast High-Voltage Rectifier	SMA	STMicroelectronics	STTH1L06A
D2,D3,D5,D6,D8,D9,D10,D11,D12,D13,D26,D27,D28	BAT54J	40V, 300mA Small signal Schottky SMT Diode	SOD-323	STMicroelectronics	BAT54J/FILM
D14	GBU802	8A Glass passivated bridge rectifiers	GBU	Diodes Incorporated or Taiwan Semiconductor	GBU802 or GBU803
D15	3V3 N.M.	ZENER	SOD-123		
D16	DDZ9690T	SURFACE MOUNT ZENER DIODE	SOD523	DIODES Incorporated	DDZ9690T-7 or equivalent
D17,D18	STTH1R04	Ultrafast recovery diode, 1A 400V	SMA	STMicroelectronics	STTH1R04A
D19	BAT41Z	100V, 200mA Low capacitance small signal Schottky diode	SOD-123	STMicroelectronics	BAT41Z/FILM
D20,D21,D22	BAT30SW	Small signal Schottky diodes	SOT-323	STMicroelectronics	BAT30SW/FILM
D23,D24,D25	BAS21J	Single high-speed switching diode	SOD323F (SC-90)	nexperia	BAS21J or equivalent
F1A	N.M.	Time Lag radial lead Micro Fuse, 250Vac	RST-BELFUSE	belfuse	0697-xx or equivalent
F1	10A/277V slow	Suface Mount Fuse, Time-Lag T, 250Vac125Vdc	UMT250-SHURTER	Schurter	3403.0176.24 or equivalent
JP1	CLOSED 2-3	SMT Jumper	Soldering pad		
JP2	OPEN	SMT Jumper	Soldering pad		
JP3,JP4	CLOSED 1-2	Strip connector 3 pos, 2.54 mm	1x3 pins	WURTH ELEKTRONIK	61300311121 or Equivalent
JP5	OPEN	SMT Jumper	Soldering pad		
JP6,JP7,JP8	CLOSED 2-4	Jumper to solder	Soldering pads		
JP9	OPEN	SMT jumper			
JP10	CLOSED 2-4	Jumper to solder	Soldering pads		
J1,J7,J9	STRIP 1x4	Strip connector 4 pos, 2.54 mm	1x4 pins	WURTH ELEKTRONIK	61300411121 or Equivalent
J2	MORSV-508-3P_screw	Connector terminal block T.H. 3 positions 5.08 mm	3 poles, Pitch 5.08	WURTH ELEKTRONIK	691213510003 or Equivalent
J3	STRIP 1x5	Strip connector 5 pos, 2.54 mm	1x5 pins	WURTH ELEKTRONIK	61300511121 or Equivalent
J4	MORSV-508-2P_screw	Connector terminal block T.H. 2 positions 5.08 mm	2 poles, Pitch 5.08	WURTH ELEKTRONIK	691213510002 or Equivalent
J5	65100516121	MINI USB 2.0 TYPE B SMD	Mini USB B	WURTH ELEKTRONIK	65100516121 or equivalent
J6	STRIP 1x2	Strip connector 2 pos, 2.54 mm	1x2 pins	WURTH ELEKTRONIK	61300211121 or Equivalent
J8	closed	Strip connector 2 pos, 2.54 mm	1x2 pins	WURTH ELEKTRONIK	61300211121 or Equivalent
LD1,LD2	YELLOW	Yellow LED	Size 0603	WURTH ELEKTRONIK	150060YS75000 or equivalent
LD3	RED	Red LED	Size 0603	WURTH ELEKTRONIK	150060RS75000 or equivalent

LD5	RED-GREEN	LED indicators, PLCC-4 Red/Yellow Green	PLCC 4	AVAGO	HSMF-A201-A00J1 or equivalent
LD4	GREEN	Green LED	Size 0805	WURTH ELEKTRONIK	150080GS75000 or Equivalent
L1	330uH	SMD Power inductors for Automotive/Industrial applications		TAIYO YUDEN	EST1060T331MDGA or equivalent
NTC1	5R	NTC Thermistors for inrush current limiting	Pitch 5.08 mm	TDK	B57235S0509M000 or equivalent
Q1,Q3,Q4,Q6,Q7,Q9	STD17NF25	N-channel 250 V, 0.140 O typ., 17 A STripFET™ II Power MOSFETs	DPAK	STMicroelectronics	STD17NF25
Q1A,Q3A,Q4A,Q6A,Q7A,Q9A	N.M.	N-channel Power MOSFET	PowerFLAT 6x5	STMicroelectronics	
Q10	BC847	GENERAL PURPOSE .45V .100mA .225mW	SOT23	ON SEMICONDUCTOR	BC847BL or equivalent
Q11	3STF1640	Low voltage high performance NPN power transistor	SOT-89	STMicroelectronics	3STF1640 or equivalent
RV1	N.M.	Varistor	Pitch 2.3x7.5 mm		
R1,R15,R35	27R	SMT resistor	Size 0805		
R2,R10,R16,R27,R40,R49	10R	SMT Resistor	Size 0805		
R3,R13,R18,R30,R42,R56	100R	SMT Resistor	Size 0805		
R5,R14,R19,R31,R44,R57,R99,R100,R106	100k	SMT resistor	Size 0603		
R6,R21,R45	56k	SMT Resistor	Size 1206		
R8,R22,R47	39k	SMT Resistor	Size 1206		
R12,R28,R53,R68,R70,R71	1.8k	SMT Resistor	Size 0603		
R23	100k	Square trimpot trimming potentiometer	3386P	BOURNS	3386P-1-104-LF or equivalent
R25,R51,R52,R63,R64,R65,R84,R97,R110	10k	SMT Resistor	Size 0603		
R26,R29,R58,R59,R73,R89,R91,R93,R95	0R	SMT Resistor	Size 0603		
R32	47k	SMT Resistor	Size 0603		
R33	63.4k	SMT Resistor	Size 0603		
R34,R36,R111	75m-2W-1%	SMT Resistor	Size 2512		
R38,R118,R119,R120	1k	SMT resistor	Size 0603		
R39,R74,R75,R76,R98,R104	N.M.	SMT Resistor	Size 0603		
R41,R55	3k	SMT Resistor	Size 0603		
R48	39k	SMT Resistor	Size 0603		
R54,R66,R79,R85,R96,R101,R102,R112,R113,R114	100R	SMT resistor	Size 0603		
R60	33k	SMT Resistor	Size 0603		
R61	10M	SMT Resistor	Size 0603		
R62,R77	120R	SMT Resistor	Size 0603		
R67,R69	470k	SMT Resistor	Size 1206		
R72	N.M.	NTC Resistor	Size 0805		
R81,R88,R92,R94	4.7k	SMT Resistor	Size 0603		
R78	27k	SMT Resistor	Size 0805		
R80	68k	SMT Resistor	Size 0805		
R82	330R	SMT Resistor	Size 0603		
R83	1.5k	SMT Resistor	Size 1206		
R86	1.5k	SMT Resistor	Size 0603		
R87	36k	SMT Resistor	Size 0603		
R90,R109	2.7k	SMT resistor	Size 0603		
R103	0R	SMT Resistor	Size 0603		
R105	15k	SMT resistor	Size 0603		
R107	8.66k	SMT resistor	Size 0603		
R108	0R	SMT resistor	Size 0805		
R115,R116,R117	1M	SMT resistor	Size 0603		
R121	8K2	SMT resistor	Size 0603		
SW1,SW2,SW3	430483025816	TACTILE SWITCHES - 6x6 J-bend SMT		WURTH ELEKTRONIK	430483025816 or equivalent
TP1	TPHIN1	Test Point - PCB 1mm DIAMETER	Copper Pad		
TP2	TPHIN2	Test Point - PCB 1mm DIAMETER	Copper Pad		
TP3	TPHIN3	Test Point - PCB 1mm DIAMETER	Copper Pad		
TP4,TP7,TP14,TP17,TP18,TP19,TP20,TP21,TP22,TP23,TP24,TP25	N.M.	TP for Probe	Diam. 1.27, Hole 0.8mm		
TP5	PB8	Test Point - PCB 1mm DIAMETER	Copper Pad		
TP6	PA4	Test Point - PCB 1mm DIAMETER	Copper Pad		
TP8,TP12	TPTH-ANELLO-1mm	THT Ring Test Point		Keystone	5003 or Equivalent
TP10	PA3	Test Point - PCB 1mm DIAMETER	Copper Pad		
TP11	PA7	Test Point - PCB 1mm DIAMETER	Copper Pad		
TP13	GPIO_ZCR	Test Point - PCB 1mm DIAMETER	Copper Pad		
TP15	NEEDLE-PAD-1.7mm	Test Point - PCB 1.7mm DIAMETER	Copper Pad		
TP16	PGND	Test Point - PCB 1mm DIAMETER	Copper Pad		
U1	STSPIN32F0251Q	250V three-phase controller with ARM Cortex MCU	QFN72-10X10	STMicroelectronics	STSPIN32F0251Q/TR
U2	TSV911ILT	Single Rail-to-Rail input/output 8 MHz operational amplifiers	SOT23-5	STMicroelectronics	TSV911ILT

U3	TS3704IPT	Micropower quad CMOS voltage comparators	TSSOP14	STMicroelectronics	TS3704IPT
U4	LD1117S33CTR	800mA, 3.3V Adjustable and Fixed low drop positive voltage regulator	SOT-223	STMicroelectronics	LD1117S33CTR
U5	USBLC6-2SC6	Very low capacitance ESD protection	SOT23-6L	STMicroelectronics	USBLC6-2SC6 / Y
U6	LD3985M33R	Ultra low drop and low noise BiCMOS voltage regulators	SOT23-5L	STMicroelectronics	LD3985M33R
U7	STM32F103CBT6	Medium-density performance line ARM®-based 32-bit MCU with 128 KB Flash, USB, CAN, 7 timers, 2 ADCs, 9 com. interfaces	LQFP48 - 7x7 mm	STMicroelectronics	STM32F103CBT6
U8	VIPer013	Energy saving off-line high voltage converter	SSOP10	STMicroelectronics	VIPer013BLS/TR
X1,X2	8MHz	CRYSTAL 8.0000MHZ 8PF SMD	2.5x3.2 mm	NDK	NX3225GD-8MHZ-STD-CRA-3 or equivalent
		Rubber feet		Hammond	1421T6CL or Equivalent
J8,JP3,JP4		Female Jumper Isolated, pitch 2.54mm		ASSMANN WSW	AKSCT/Z BLACK or Equivalent
		P.C.B. EVSPIN32F02Q1S1 Rev.1.0	75.2x143 mm	STMicroelectronics	