

**Bill of materials**
**Table 1. STDES-VGAN100F1 bill of materials**

Item	Q.ty	Ref.	Part/value	Description	Manufacturer	Order code
1	1	BD1	8A/800V	800V 8A Glass Passivated Single-Phase Bridge Rectifier	Vishay	GBU8J-M3/45
2	2	C1, C2	220nF, 275V	WCAP-FTX2 Film Capacitor, THT, L18W6H11.5, 220nF, 275V	Würth Elektronik	890324025027
3	2	C3, C4	150uF, 200V	WCAP-AT1H Aluminum Electrolytic Capacitor, Radial, THT, D18xH25mm, 150uF, 200V	Würth Elektronik	860241081008
4	2	C5, C13	N.A.			
5	2	C6, C7	330uF, 25V	WCAP-PTG5 Aluminum Polymer Capacitor, Radial THT, D10xH12.5mm, 330uF, 25V	Würth Elektronik	870025575009
6	4	C8, C21, C25, C28	100nF, 50V	WCAP-CSGP Multilayer Ceramic Chip Capacitor, General Purpose, size 0603, X7R, 100nF, 50V	Würth Elektronik	885012206095
7	2	C9, C10	2.2nF, 630V	WCAP-CSMH Multilayer Ceramic Chip Capacitor, size 1206, NP0 Class I, 2.2nF, 630V	Würth Elektronik	885342008007
8	1	C11	N.A.			
9	1	C12	1nF, 200V	WCAP-CSMH Multilayer Ceramic Chip Capacitor, size 0805, NP0 Class I, 1nF, 200V	Würth Elektronik	885342007003
10	1	C14	1uF, 25V	WCAP-CSGP Multilayer Ceramic Chip Capacitor, General Purpose, size 0805, X7R, 1uF, 25V	Würth Elektronik	885012207078
11	1	C16	2.2nF, 250V	WCAP-CSSA Multilayer Ceramic Chip Safety Capacitor, size	Würth Elektronik	885352213015

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				2211, X1/Y2, 2.2nF, 250V		
12	2	C17, C18	22uF, 25V	WCAP-CSGP Multilayer Ceramic Chip Capacitor, General Purpose, size 1210, X7R, 22uF, 25V	Würth Elektronik	885012209074
13	1	C19	47nF, 25V	WCAP-CSGP Multilayer Ceramic Chip Capacitor, General Purpose, size 0805, X7R, 47nF, 25V	Würth Elektronik	885012207070
14	1	C20	1uF, 16V	WCAP-CSGP Multilayer Ceramic Chip Capacitor, General Purpose, size 0603, X7R, 1uF, 16V	Würth Elektronik	885012206052
15	1	C22	220pF, 50V	WCAP-CSGP Multilayer Ceramic Chip Capacitor, General Purpose, size 0603, X7R, 220pF, 50V	Würth Elektronik	885012206079
16	1	C23	10nF, 25V	WCAP-CSGP Multilayer Ceramic Chip Capacitor, General Purpose, size 0603, X7R, 10nF, 25V	Würth Elektronik	885012206065
17	1	C24	220nF, 25V	WCAP-CSGP Multilayer Ceramic Chip Capacitor, General Purpose, size 0603, X7R, 470nF, 25V	Würth Elektronik	885012206075
18	1	C26	4.7nF, 25V	WCAP-CSGP Multilayer Ceramic Chip Capacitor, General Purpose, size 0603, X7R, 4.7nF, 25V	Würth Elektronik	885012206063
19	1	C27	470nF, 25V	WCAP-CSGP Multilayer Ceramic Chip Capacitor, General Purpose, size 0603, X7R, 470nF, 25V	Würth Elektronik	885012206075
20	1	D1	BAS21	High Speed Switching Diode 250V 0.25A 3-Pin SOT-23 T/R.	Diodes	BAS21
21	1	D3	STTH2L06A 600 V, 2 A, SMA	600 V, 2 A Low Drop Ultrafast Diode.	ST	STTH2L06A

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22	1	D5	STTH1L06A 600 V, 1 A, SMA	600 V, 1 A Low Drop Ultrafast Diode.	ST	STTH1L06A
23	2	D6, D7	LL4148	Small Signal Diode	Vishay	LL4148-M-18
24	1	DZ1	15V, 0.5W	Small Signal Zener Diodes, 5%, 500mW	Vishay	TZM5245B-GS08
25	1	DZ3	N.A.		Any	Any
26	1	F1	4A/250Vac	FUSE BOARD MOUNT 4A 250VAC RAD	Littelfuse Wickmann	37314000410
27	1	L1	YEF20V-4P10MH	CMC, 10mH - 2A	Trigon Components	YEF20V-4P10MH
28	1	NTC1	2.2Ω	Inrush Current Limiter, Diameter 11.5mm, Width 5.0mm, Height 16.0mm, Leads 5.0mm, 2.2Ω, 6 / 5A	TDK	B57236S0229M000
29	1	P1	61300211121	WR-PHD Pin Header, THT, Vertical, pitch 2.54mm, 1 Row, 2P	Würth Elektronik	61300211121
30	1	Q2	200V, 1A	200V, 1A NPN LED DRIVING TRANSISTOR IN SOT89	Diodes	ZXTN4006ZTA
31	1	Q3	150V, 7.5m Ohms	N-Channel Mosfet, 150V, 130A, 7.5m Ohms.	ONSEMI	FDP075N15A_F102
32	3	R1, R2, R7	N.A.		Any	Any
33	4	R3, R4, R8, R9	1M5 ± 5%	SMD Chip Resistor, 200 mW, 0805 [2012 Metric], Thick Film, General Purpose	Any	Any
34	2	R5, R6	0R	SMD Chip Resistor, 250 mW, 1206 [3216 Metric], Thick Film, General Purpose	Any	Any
35	3	R11, R12, R13	470K ± 5%	SMD Chip Resistor, 1W, 2010, Thick Film, General Purpose	Yageo	RC2010JK-07470KL
36	3	R14, R15, R16	22 mOhm ±1%	SMD Chip Resistor, 2512, High Power Metal Strip Resistors for Current Sensing.	TE Connectivity	TLRP3A30DR022FTE
37	1	R17	20R ± 1%	SMD Chip Resistor, 250 mW,	Any	Any

Item	Q.ty	Ref.	Part/value	Description	Manufacturer	Order code
				1206 [3216 Metric], Thick Film, General Purpose		
38	1	R18	330R ± 5%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
39	1	R19	0R	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
40	1	R20	47R ± 5%	SMD Chip Resistor, 200 mW, 0805 [2012 Metric], Thick Film, General Purpose	Any	Any
41	2	R21, R25	75K ± 5%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
42	1	R22	10M ± 1%	SMD Chip Resistor, 250 mW, 1206 [3216 Metric], Thick Film, General Purpose	Bourns	CHV1206-FX-1005ELF
43	1	R23	N.A.		Any	Any
44	1	R24	39K ± 5%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
45	1	R26	0R	SMD Chip Resistor, 200 mW, 0805 [2012 Metric], Thick Film, General Purpose	Any	Any
46	2	R27, R28	N.A.		Any	Any
47	1	R29	180K ± 5%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
48	1	R30	22K ± 5%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick	Any	Any

Item	Q.ty	Ref.	Part/value	Description	Manufacturer	Order code
				Film, General Purpose		
49	1	R31	1K5 ± 1%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
50	1	R32	2K2 ± 5%	SMD Chip Resistor, 250 mW, 1206 [3216 Metric], Thick Film, General Purpose	Any	Any
51	1	R33	0R	SMD Chip Resistor, 250 mW, 1206 [3216 Metric], Thick Film, General Purpose	Any	Any
52	1	R34	1M ± 5%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
53	1	R35	47K ± 5%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
54	1	R36	61K9 ± 1%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
55	1	R37	820K ± 2%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
56	1	R38	560K ± 2%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
57	1	R39	130K ± 1%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
58	1	R40	20K5 ± 1%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick	Any	Any

Item	Q.ty	Ref.	Part/value	Description	Manufacturer	Order code
				Film, General Purpose		
59	1	R41	10K ± 5%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
60	2	R42, R47	1K ± 5%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
61	1	R43	18K2 ± 1%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
62	2	R44, R45	15K ± 2%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
63	1	R46	N.A.		Any	Any
64	1	R48	118K ± 1%	SMD Chip Resistor, 125 mW, 0603 [1608 Metric], Thick Film, General Purpose	Any	Any
65	1	RV1	820512711	WE-VD Disk Varistor, D12.5mm, W6.5mm, H16mm, 275VAC, 350VDC	Wurth Elektronik	820512711
66	1	T1	YPQ3220V-12P43 5UH	Transformer 12-Terminal , THT, Vertical, PQ Style Bobbins, PQ3220	Trigon Components	YPQ3220V-12P435UH
67	1	U1	SRK1001, SO8	Adaptive synchronous rectification controller for flyback converter	ST	SRK1001
68	2	U2, U6	LM2904D, SO8	Low-Power Dual Operational Amplifier	ST	LM2904D
69	1	U3	TL431AIL3T, SOT23-3	Voltage Reference, AEC-Q100, Shunt - Adjustable, 2.5V to 36V, 1 %	ST	TL431AIL3T
70	1	U4	VIPERGAN100TR , QFN 5x6mm	Advanced quasi-resonant offline high voltage	ST	VIPERGAN100TR

Item	Q.ty	Ref.	Part/value	Description	Manufacturer	Order code
				converter with E-mode GaN HEMT.		
71	1	U5	FOD817AS	Optocoupler DC-IN 1-CH Transistor DC-OUT 4-Pin PDIP SMD Black T/R	ONSEMI	TPC817A C9G

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