

STEVAL-ISV021V1 Harvesting module BOM

Sect.	Item	Qty.	Ref.	Part/value	Tolerance (%)	Voltage current	Watt	Technol. info.	Package	Manufacturer	Manufacturer code	More information
Battery	2	1	BT1	Support for Li-Ion battery					SMD	Keystone	3008	
	3	1	J6	SMD jumper				Pitch 100 mils	SMD	FCI	95293-101-03LF	This jumper allows the connection of the STORE pin to the voltage regulator U4 in case the external sampling is OFF
Supply	4	2	U3	Flexible PV panel					SMD	SANYO	AM-1801	2 PV panels connected in series
	5	1	J4	SMD jumper				Pitch 100 mils	SMD	FCI	95293-101-03LF	This jumper disconnects the PV panel U3 in case an alternative supply is required and connected to CN1
	6	1	J5	3-way switch				Pitch 100 mils	SMD	FCI	95293-101-03LF	This jumper allows the connection of the source to the harvester U1 in case the external sampling is OFF
	6	1	CN1	2-way conn.				Pitch 100 mils	SMD	FCI	95293-101-03LF	Input connector for external PV panel or TEG

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Harvester/DC-DC controller section	MPT section	7	1	U2	SPV1050					ST		Harvester and thin film battery manager	
		8	1	C6	1 μ F	15%	25 V		X5R	0603	Murata	GRM188R61E105KA12D	Input capacitance
		9	1	Rmpp	10 M Ω	1%		0.1		0603	VISHAY	CRCW060310M0FKEA	Resistor partitioning for MPP track
		10	1	Rmpps	680 k Ω	1%		0.1		0603	TE Connectivity	CRG0603F680K	Resistor partitioning for MPP setting
		11	1	Rin	3 M Ω	0.01				0603	VISHAY	CRCW06033M00FKEA	Input resistor partitioning
		12	1	C34	10 nF	15%	16 V		X7R	0603	Murata	GRM188R71C103KA01D	Voltage sampling time constant capacitance
		13	1	L1	22 μ H	20%					Coilcraft	LPS4018-223ML_ LPS5010-223ML_ XFL2006-223ME_	DC-DC inductor
	LDO1	14	1	SW1	3-way switch				Pitch 100 mils	SMD	FCI	95293-101-04LF	Close 1 - 2, LDO1 is disabled Close 2 - 3, LDO1 controlled by external signal
		15	1	C5	100 nF	10%	6.3 V		X5R	0402	AVX	04026D104KAT2A	
	LDO2	16	1	SW2	3-way switch				Pitch 100 mils	SMD	FCI	95293-101-04LF	Close 1 - 2, LDO2 is disabled Close 2 - 3, LDO2 controlled by external signal
		17	1	C4	100 nF	10%	6.3 V		X5R	0402	AVX	04026D104KAT2A	

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Battery management section	18	2	C9, C10	47 µF	20%	6.3 V		X5R	0805	KEMET	C0805C476M9PAC7800	Capacitor on STORE net
	20	1	Cuyp	470 nF	15%	10 V		X5R	0603	Murata	GRM188R71A474KA61D	UVP voltage sampling delay time constant capacitance
	21	1	Ruyp	6.8 MΩ	1%				0603	VISHAY	CRCW06036M80FKEA	VEOC = 4.15 V VUVP = 3.75 V
	22	1	Reoc	0.75 MΩ	1%				0603	VISHAY	CRCW0603750KFKEA	
	23	1	Rout	3 MΩ	1%				0603	VISHAY	CRCW06033M00FKEA	
Ambient light	24	1	U7	SFH5711					SMD	OSRAM	SFH 5711	Ambient light sensor: place on the same solder side of the PV panel (U3)
	25	1	R12	80 kΩ	1%		0.1		0603	VISHAY	CRCW060382K0FKEA	
	26	1	J7	SMD jumper				Pitch 100 mils	SMD	FCI	95293-101-03LF	
External supply from USB	27	1	U8	STLQ50C-R					SOT323-5L	ST	STLQ50C-R	
	28	1	SB49	5.36 kΩ			0.1		0603	Panasonic	ERA3AEB5361V	
	29	1	SB50	2.05 kΩ	±1%		0.1		0603	VISHAY	CRCW06032K05FKEA	
	30	2	C14, C15	1 µF	15%	25 V		X5R	0603	Murata	GRM188R61E105KA12D	
	32	1	J23	SMD jumper				Pitch 100 mils	SMD	FCI	95293-101-03LF	Disable charging from USB

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External connections	33	1	J28	Micro-USB					SMD	Molex	47346-0001	μC supply connector
	34	1	J25	16-pin conn.				2.54 mm	SDM	Samtec	SMH-108-02-G-D	Connector for future extensions
	35	1	J27	16-pin conn.				2.54 mm	SMD	Samtec	SMH-108-02-G-D	Connector for sampling
Spacers + nuts	36	4	Screw support							RS		