

STEVAL-ISV002V2

CONTROL BOARD FOR 3 kW PHOTOVOLTAIC APPLICATION

Item	Quantity	Reference	Part / Value	Tolerance %	Voltage Current	WATT	PACKAGE	Manufacturer	Manufacturer Code	RS/Distelec/Other Code	More Info
1	31	C3,C5,C12,C13,C14,C15,C16,C17,C20,C21,C22,C23,C24,C25,C27,C29,C30,C31,C32,C33,C34,C35,C36,C38,C41,C45,C46,C47,C48,C49,C50	100n	5%	16V		0805	ANY			
2	5	C4,C6,C19,C40,C42	10uf	5%	16V			ANY			
3	2	C7,C8	10pF	5%	16V		0805	ANY			
4	2	C9,C10	22pF	5%	16V		0805	ANY			
5	1	C11	470n	5%	16V		0805	ANY			
6	1	C18	10nF	5%	16V			ANY			
7	2	C37,C39	47uF	5%	16V						
8	12	C51,C52,C53,C54,C55,C56,C57,C58,C59,C60,C61,C62	180pF	5%	16V		0805	ANY		Farnell: 141-4674	
9	2	C43,C44	1u		16V		0805	ANY			
10	2	D1,D2			3.3V 16mA		0805	ANY		Distrelec code: 250154- RS:654-5773	
11	2	PWM CONNECTOR1.POWER SUPPLY	CON34A					ANY		RS:499-9718	Connector female- Assembly on the bottom side
12	1	J1	MOR2					ANY			
13	1	J19	LD1086DT33TR	1%	3.3V,Signal		DPACK	ST			
14	3	J9,J11,J14	BNC Connector Female					ANY		RS:420-5417	
15	2	J4,J7	JUMPER3		3.3V,Signal			ANY		RS:495-8470	3 way single row strip line connector (male connector) 2,54mm pitch-VERTICAL THROUGH HOLE
16	1	J16	CON20A		3.3V,Signal			ANY		RS:461770	20 way IDC low profile boxed header 2,54mm pitch-THROUGH HOLE
17	1	J17	JUMPER		3.3V,Signal			ANY		RS code: 495-8470	2 way single row strip line connector (male connector) 2,54mm pitch
18	1	J18	CON30A		3.3V,Signal			ANY		ELCART 5/7714	STRIP FEMM 2X15
19	1	L1					SML_1806	MURATA	BLM41PG600SN1L	188-8665(RS-COMPONENT)	
20	1	P1	DB9 CONNECTOR FEMALE							RS code: 495-9760	
21	28	R1,R2,R4,R6,R7,R9,R14,R15,R17,R19,R20,R22,R24,R25,R27,R29,R30,R31,R32,R33,R41,R42,R43,R44,R45,R47,R48,R49	10K			1/4W	0805	Any			
22	1	R3	390			1/4W	0805	Any			
23	1	R5	47			1/4W	0805	Any			
24	2	R64	56			1/4W	0805	Any			
25	5	R8,R16,R11,R21,R26	560			1/4W	805	Any			
26	4	R10,R18,R23,r28	1.1k			1/4W	0805	Any			
27	2	R62,R63	1k			1/4W	0805	Any			
27BIS	1	R65	2,2K			1/4W	0805	Any			
28	2	R12,R39	4.7k			1/4W	805	Any			
29	1	R13	1.2k			1/4W	0805	Any			
30	11	R34,R35,R36,R37,R38,R40,R52,R53,R55,R60,R70	0			1/4W	0805	Any			
31	1	R46	NOT MOUNTED				0805	Any			
32	1	R58	300			1/4W	0805	Any			
33	1	R59	200			1/4W	0805	Any			
34	1	R100	100			1/4W	0805	Any			
35	1	R60	800			1/4W	0805	Any		RS:215-2333	
36		J20						DSL	MT008-A		
37	2	SW6,SW7	Pushbutton					EAO		265-2158(RSCOMPONENT)	
38	5	TP4,TP6,TESTPOINT_S2,TESTPOINT_S3,TESTPOINT_S5	testpoint		5V			Any			
39	1	U12	M74HCT7007RM13TR		5V		SO8	ST	M74HCT7007RM13TR		
40	3	U3,U4,U5	TS954IPT		5V		TSSOP14	ST	TS954IPT		
41	1	U6	LD1086DT33TR		3.3V		DPACK	ST	LD1086DT33TR		

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42	1	U7	NME0505D		5V,200mA			MURATA Power Solution		544-2617(RS-COMPONENT)	
43	2	U8,U9	SFH615A				DIP4	OSRAM	SFH615A-2	110-185(RS-COMPONENT)	
44	1	U10	ST3232EBTR				TSSOP16	ST	ST3232EBTR		
45	1	Y1	32.7KHz					Any		4789274(RS-COMPONENT)	
46	1	Y2	8MHz					FOX Electronics	FOXSD/080-20	RS:547-6452 Ex 472-0483	
47	1	1A	DAC8534IPW	TI DAC			TSSOP16	TI	DAC8534IPW	461-6312 (RS-COMPONENT)	FARNELL: 932-4194
48	1	U11	STM32F103ZET6				LQFP144	ST	STM32F103ZET6		
49	1	J10	CON8					Any		ELCART 5/7643-5	STRIP MASCH 2X4

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Item	Quantity	Reference	Part / Value	Tolerance %	Voltage Current	PACKAGE	Manufacturer	Manufacturer Code	RS/Distelec/Other Code
1	2	BR1,BR2	BRIDGE		600V	DFM	General Semicond.	DFM06	RS 369-0230
2	2	C1,C28	100nF		275V	10X20	EPSCOS	B32922	RS 334-596
3	1	C2	10uF		400V	10x16	PANASONIC	ECA2GHG100	RS 365-4751
4	2	C3,C27	4.7uF		400V	10X16	PANASONIC	ECA2GHG4R7	RS 365-4745
5	2	C4,C5	22uF		35V	6.3X5	PANASONIC	ECAEA1VKS220	RS 116-925
6	1	C6	1.8nF		50V	SML_0805	ANY		
7	2	C7,C23	22nF		50V	SML_0805	ANY		
8	2	C8,C29	2.2nF		250VAC	RAD/450X.200/LS.400/034	CERAMITE	440LD2210PCM	RS 214-5903
9	1	C9	1000uF		10V	RAD. 3.5mm	PANASONIC	EEUFM1A102L	RS 526-1115
10	1	C10	47uF		25V	RAD. 2mm	PANASONIC	EEUFC1E470	RS 449-1034
11	2	C11,C26	10nF		50V	SML_0805	ANY		
12	2	C13,C22	2.2nF		50V	SML_0805	ANY		
13	3	C14,C15,C16	10u		16V	CYL/D.300/LS.100/034		EEAGA1C100	RS 414-9008
14	3	C17,C18,C19	100u		16V	CYL/D.300/LS.100/034			RS 224-4173
15	1	C24	470nF		50V	RAD/200X.100/LS.100/031_REV1	AVX	SR305C474KAR	RS 537-3987
16	2	C25,C31	470uF		25V	CYL/D.325/LS.150/034_REV1	RUBYCON		RS 191-7779
17	1	C30	22uF		400V	CYL/D.400/LS.200/034	PANASONIC	EEUED2G220	RS 434-0318
18	4	C32,C34,C36,C38	100uF		35V	CYL/D.325/LS.150/034_REV1	PANASONIC		RS 191-7836
19	1	C33	10uF		35V	CYL/D.250/LS.100/031	PANASONIC	EEAGA1V100	RS 414-9064
20	3	C35,C37,C39	10u 25V		25V	CYL/D.250/LS.100/031	PANASONIC	EEAFC1E100	RS 449-1006
21	1	C40	100uF		25V	CYL/D.300/LS.100/034	PANASONIC		RS 191-8261
22	1	C41	470n		25V	SML_0805	ANY		
23	2	D1,D6	BAT46		100V	DO-35	ST	BAT46	
24	2	D2,D9	1N4148		100V	DO-35	any	1N4148	544-3480
25	2	D3,D8	STTH1L06		600V	DO-41	ST	STTH1L06	
26	1	D4	STPSSL40		40V	DO-201AD	ST	STPSSL40	
27	2	D5,D10	P6KE220			DO-15	ST	P6KE220CA	RS:4864599P
28	2	D7,D11	STPS3150		150V	DO-201AD	ST	STPS3150	
29	1	D12	STTHR02		200V	DO-201AD	ST	STTH302	
30	2	F1,F2	1A FUSE			CYL/D.300/LS.200/034 (8.5X8.5)	SHURTER	34.6615	DIS. 271344 RS:226-6583
31	1	J1,	CON2		VAC	TRH-PITCH 7.62 mm	PHOENIX CONTACT	1731721	RS 189-5966
31bis	1	J2							
32	3	J3 24V	CON2			TRH-PITCH 5.08 mm	ANY		
33	2	J4	CON34A			WALCON.100/VH/TM2OE/W.325/34	ANY		
34	2	J5/15V, J6/15V	CON3			OK RS:220-4276	ANY		RS: 220-4276
35	1	L1	4.7uH			LEAD SPACING 5mm	PANASONIC	ELC08D4R7E	RS 233-5112
36	2	NTC 1/2	16 Ohm			RAD/400X.150/LS.200/034	EPCOS	B57236S160M	RS 211-7964
37	2	OPTO1,OPTO2	PC817D			DIP4	SHARP	PC817D	RS 175-110 (RS:625-8665)
38	2	R1,R2	0			SML_0805	ANY		
39	3	R3,R12,R21	33k			SML_0805	ANY		
40	1	R4	56k			SML_0805	ANY		
41	1	R8	18k			SML_0805	ANY		
42	2	R9,R18	3.9k			SML_0805			
43	2	R10,R19	470k			SML_0805			
44	1	R11	24k			SML_0805			
45	1	R13	2.2k			SML_0805			
46	1	R14	180k			AX.350X.100/031_REV1			RS 487-8504P
47	1	R15	15k			SML_0805			

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48	2	R16,R17	10			SML_0805			
49	1	R20	200k			AXI.350X.100/031_REV1			
50	1	R22	3.3k			SML_0805			
51	1	R23	1k			SML_0805			
52	1	T1	TRANSFORMER			TRAFO 7W MAGNETICA 1335.0063_REV1	MAGNETICA	1335.0063	
53	1	T4	TRANSFORMER			TRAFO 15W MAGNETICA 1335.0021	MAGNETICA	1335.0021	
54	1	T2	BU9 -103R25BL COIL-CRAFT			CM_COILCRAFT_BU9_103R25B_REV1	COILCRAFT	BU9103R25BL	
55	1	T5	BU15 -4530R4BL COIL-CRAFT			COILCRAFT BU15 PLUS BU9_REV2	COILCRAFT	BU154530R4BL	
56	1	U1	VIPER17HN			DIP7	ST	VIPER17HN	
57	3	U2,U3,U4	L4940D2T5-TR			D2PAK	ST	L4940D2T5-TR	
58	1	U5	L7824ABD2T-TR			D2PAK	ST	L7824ABD2T-TR	
59	1	U6	L7815ABD2T-TR			D2PAK	ST	L7815ABD2T-TR	
60	1	U7	VIPER27HN			DIP7	ST	VIPER27HN	
61	1	U8	L7915CD2T-TR			D2PAK	ST	L7915CD2T-TR	
62	1	U9	L7812ABD2T-TR			D2PAK	ST	L7812ABD2T-TR	
63	1	VR1	TS432AILT			TO92	ST	TS432AILT	
64	1	VR2	TL431			TO92	ST	TL431ACZ-AP	

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OUTPUT SENSING AND RELAYS FOR 3 kW PHOTOVOLTAIC APPLICATION												
Item	Quantity	Reference	Part / Value	Tolerance %	Voltage	Current	WATT	PACKAGE	Manufacturer	Manufacturer Code	RS/Distelec/Other Code	More Info
0	1	Cable										
1	1	CS1	HAIS 50-P					SEE DATASHEET	LEM	50	532-9198	
2	1	C1	1.5uF, 305V e.a. EPCOS	20%	305V			RADIAL	EPCOS	B32924C3155M	497-4141	
3	1	C33	4.7n, 300Vac		300V	ac		RADIAL	EVOX RIFA	PHE850EA4470MA03R	616-7907	
4	1	C34	100p, 15 V	5%	15V			SMD0805	ANY			
5	2	C35,C36	100n, 25 V	5%	25V			SMD0805	ANY			
6	1	C37	10n, 15 V	5%	15V			SMD0805	ANY			
7	1	C42	100p, 630V	5%	630V			RADIAL	EVOX RIFA	PFR5-101J630L4	240-4808	
8	1	C43	1u, 25V	5%	25V			SMD0805	ANY			
9	2	C46	100p, 25V	5%	25V			SMD0805	ANY			
10	1	U4	TL431					TO92	ST	TL431IZ-AP		
11	1	C45,C49	1u 25V	5%	25V			SMD0805	ANY			
12	1	C50	100p, 15V	5%	15V			SMD0805	ANY			
13	1	C51	100n, 15V	5%	15V			SMD0805	ANY			
14	1	C52	1u, 15V	5%	15V			SMD0805	ANY			
15	2	C93	47uF 25V	5%	25V			SMD1210	ANY			
16	1	C94	47uF 25V	5%	25V			SMD1210	ANY			
17	2	D19,D20	1N4148		100V	0.2A		AXIAL	NXP	1N4148	544-3480	
18	5	J11,J12	CON2					TBD				
19	1	J8	OUTPUT CONNECTOR		230V	16A rms		MOR2_10MM	PHOENIX CONTACT	1706785	314-9861	
20	1	J7	CON2		230V	16A rms		MOR2_10MM	PHOENIX CONTACT	1706785	314-9861	
21	1	J9	COUPLING INDUCTOR CONNECTOR		230V	16A rms		MOR2_10MM	PHOENIX CONTACT	1706785	314-9861	
22	2	Q1,Q2	BC547B		45V	0.1A		TO-92	ON SEMICONDUCTOR	BC547BG	545-2232	
24	2	R2,R3	1.5k	1%				SMD0805	ANY			
25	1	R30	47k	10%			10W	RESIST_NONINDUCTIVE10_S	BI TECHNOLOGIES		625-3581	
26	1	R31	100	1%			0.6W	AXIAL	NEOHM	LR1F100R	148-269	
27	1	VS1	LEM LV25-P					LEM LV25 S	LEM HEME	LV 25-P	286-361	
28	1	Vdc	CON3					TBD				
29	2	U1,U2	24V cc, 30A, NO, unipolar		230V	30A			OMRON	G8P-1A4P 24DC	418-6164	
30	6	C40,C41,C38,C48,C44,C50	100n		25V			SMD0805	ANY			
31	1	C39	330n		25V			SMD0805	ANY			
32	1	U5	L4931CDT50-TR DPAK					DPAK	ST	L4931CDT50-TR DPAK		
33	1	R32	4.7k	1%				SMD0805	ANY			
34	1	C47	330u		10V			Pitch 3.5mm	PANASONIC		449-0902	
35	2	J14,J15	OUTPUT CONNECTOR					SEE DATASHEET	RS	Z13-060-03-000212000	420-5417 giusto	
36	1	R34	3.3 Ohm	5%			5W		ANY		RS:199-7674	
37	1	C48	100n, 25V	5%	25V			SMD0805	ANY			
38	1	LF	FILTER INDUCTOR		1.8mH				MAGNETICA	2006.0001		
38	2	LF	FILTER INDUCTOR		1.2mH				MAGNETICA	2006.0002		
	1	C53	47nf, 16V					SMD0805				
	1	R33	1K	5%				AXIAL	NEOHM			

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**INPUT CURRENT SENSING FOR 3 kW PHOTOVOLTAIC APPLICATION**

Item	Quantity	Reference	Part / Value	Tolerance %	Voltage	Current	WATT	PACKAGE	Manufacturer	Manufacturer Code	RS/Distelec/Other Code	More Info
1	1	CS1	LA55-P					LA55P_S	LEM HEME	90.13.25.000.1	180-7391	
2	2	C45,C47	100p,25V	5%	25V			SMD0805	ANY			
3	2	C46,C48	100n,25V	5%	25V			SMD0805	ANY			
4	1	C50	100p,15V	5%	15V			SMD0805	ANY			
5	1	C51,C53,C54	100n,15V	5%	15V			SMD0805	ANY			
6	1	C52	1u, 15V	5%	15V			SMD0805	ANY			
7	2	C93,C94	47u,25V	5%	25V			Case D	ANY		RS:464-8656	
8	1	D18	5.1V		5.1V,20mA		0.5W	SOD123	ON SEMICONDUCTOR	MMSZ5231BT1G	545-3049	
9	1	J1	BNC					SEE DATASHEET	RS	Z13-060-07-000212000	420-5350	
10	1	R1	56 OHM	1%			0.75W	AXIAL			163-375	
11	1	Vdc	CON3			+/-15V		TBD				

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POWER BOARD FOR 3 KW PHOTOVOLTAIC APPLICATION												
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1	7	CIN1,CIN2,CIN3,CBUS1,CBUS2,CBUS3,CBUS4	500V,330uF	20%	500Vc.c.		2 PIN ELEC. CAP	CEL35	PANASONIC	EC0S2HP331EA	339-7206	
2	4	CIN4,CIN5,CF1,CF2	630V, 0.1uF	5%	630Vc.c.		CAP.POLY RAD.	rad/.675x.275/ls.600/.40	EPCOS	B32522Q8104J	334-978	
3	2	CBUS5,CBUS6	630V,2.2uF	5%	630Vc.c.		CAP.POLY RAD.		PANASONIC	ECQE6225JF	622-5003	
4	9	C1,C4,C14,C17,C26,C39,,C52,C54,C120	15V,100n	10%	15V		SMD MULT.CERAMIC CAP.	0805	ANY			
5	15	C2,C5,C11,C15,C18,C19,C20,C24,C32,C41,C44,C45,C49,C53,C48	25V,100n	10%	25V		SMD MULT.CERAMIC CAP.	0805	ANY			
6	5	C3,C6,C13,C46	1uF,25V	10%	25V		SMD MULT.CERAMIC CAP.	0805	ANY			
7	2	C7,C9	2.2uF,25V	10%	25V		SMD MULT.CERAMIC CAP.	0805	ANY			
8	4	C8,C10,C21,C22	10uF,25V	20%	25V		Elec. CAP. RAD.		PANASONIC	EEAFC1E100	449-1006	
9	4	C12,C27,C37,C47	100p,35V	5%	35V		SMD MULT.CERAMIC CAP.	0805	ANY			
10	4	C16,C28,C31,C40	10n,15V	10%	15V		SMD MULT.CERAMIC CAP.	0805	ANY			
11	4	C30,C38,C51	100n,25V	10%	25V		SMD MULT.CERAMIC CAP.	0805	ANY			
12	4	C23,C25,C29,C50	470p,25V	10%	25V		SMD MULT.CERAMIC CAP.	0805	ANY			
13	2	C33,C61	100n,630V	10%	630Vc.c.		CAP.POLY RAD.	rad/.675x.275/ls.600/.40	EPCOS	B32522Q8104J	334-978	
14	2	C34,C64	100p,15V	5%	15V		SMD MULT.CERAMIC CAP.	0805	ANY			
15	4	C35,C36,C65,C66,C112,C119	100n,25V	10%	25V		SMD MULT.CERAMIC CAP.	0805	ANY			
16	2	C42,C62	100p,500V	10%	500Vc.c.		CER. CAP. RAD		AVX	5M0101KAAAH	405-7662	
17	1	C116,C43	1uF,25V	10%	25V		SMD MULT.CERAMIC CAP.	0805	ANY	GRM21BR71E105KA99L	DISTRELEC-82.35.07	
18	2	C67,C68	1uF,25V	10%	25V		SMD MULT.CERAMIC CAP.	0805	ANY	GRM21BR71E105KA99L	DISTRELEC-82.35.07	
19	8	C87,C88,C89,C90,C91,C92,C93,C94	47u,25V	5%	25V		SMD-TANTALIO CAP	1210	ANY	TAJD476K025R	464-8246	
20	4	DCDC L1,DCDC L2,DCDC L3N,DCDC L3	NMV0515SA			1W	ISOLATED DCDC CONV.	DCDCTEK_S_REV1	C&DTECHNOLOGIES	NMV0515S	192-0848	
21	4	DCDC L4,DCDC L4N,DCDC L5N,DCDC L5	NMD050515S			1W	ISOLATED DCDC CONV.	DCDC_NMD15_S	C&DTECHNOLOGIES	NMD050515S	5443339	
22	2	C121,C122	4.7n, 630V		630VDC		CAP.POLY RAD.	passo 10mm	Arcotronix	R60PF1470AA30J	R60PF1470AA30J	
23	2	D1,D2	STTH16L06CT		600V,16A		Turbo 2 ultrafast high voltage rectifier	TO220	ST	STTH16L06CT		
24	6	D3,D4,D5,D6	STTH30R06W		600V,30A		ULTRAFAST RECT. DIODE	DO-247	ST	STTH30R06W		
25	4	D116,D24,D17,D19	STTH110A		1kV,1A		ULTRAFAST RECT. DIODE	SMA	ST	STTH110A		
26	4	D9,D20,D21,D22	10V ZENER		10V,25mA	1W	ZENER DIODE	DO214AC	VISHAY	SML4740-E3	634-7030	
27	2	D10,D11	5.1V ZENER		5.1V,20mA	0.5W	ZENER DIODE	SOD123	ON SEMICONDUCTOR	MMSZ5231BT1G	545-3049	
28	3	D12,D16,D117,D118	5.1V ZENER		5.1V,20mA	0.5W	ZENER DIODE	SOD123	ON SEMICONDUCTOR	MMSZ5231BT1G	545-3049	
29	2	D23,D13	15VZENER		15V,25mA	3W	ZENER DIODE	DO214AA	ON SEMICONDUCTOR	1SMB5929BT3G	545 3342	
30	2	D14,D15	STTH1L06A		600V,1A		ULTRAFST RECT.	SMA	ST	STTH1L06A		
31	2	D25,D18	BAT46		100V,150mA		SCHOTTKY DIODE	SOD123	ST	BAT46ZFILM		
32	6	IC1,IC3,IC8,IC9,IC14,IC16	HCPL4506		1kV		OPTOISOLATOR	DIP8	AVAGO TECHNOL.	HCPL-4506-000E	547-3813	
33	2	IC2,IC4	L6386D		600V,4mA		GATE DRIVER	SOG.050/14/WG.244/L.325	ST	L6386D		
34	2	IC5,IC6	HCPL3150		1kV,0.5A		OPTOCOUPLER	DIP8	AVAGO TECHNOL.	HCPL-3150-000E	547-3891	
35	4	IC7,IC12,IC15,IC17	TD350		1kV,1A		GATE DRIVER	SOG.050/14/WG.244/L.325	ST	TD350ID		
36	4	IGBT LOW 4, IGBT HIGH 4, IGBT LOW 5, IGBT HIGH5	STGW35NC60WD		600V,35A		IGBT	TO247	ST	STGW35NC60WD		
36a	1	J9					POWER CONN. 2 WAYS	MOR2_10.16mm	PHOENIX CONTACT	MKDSP-10/2-1016	cod.R.S.-314-9861	not assembly
37	2	J7,J8,			57A-690V		POWER CONN. 2 WAYS	MOR2_10.16mm	PHOENIX CONTACT	MKDSP-10/2-1016	cod.R.S.-314-9861	
38	5	J1,J2,J3,J4,J5	connector for power supply and CTRL boards				MALE-SIGNAL CONN 34 PIN	WALCON.100/VH/TM2OE/W.325/34	TYCO-Amp.Modu	5-826942-0	code R.S.:625-7347	
39	6	MOS LOW 1,MOS HIGH 1, MOS LOW 2, MOS HIGH 2, MOS LOW 3, MOS HIGH 3	STW55NM60ND		600V, 55A		POWER MOSFET	TO247	ST	STW55NM60ND		
40	6	Q9, Q10, Q13,Q15,Q17,Q19	2SD882		30V, 3A		NPN POWER BJT	SOT-32	ST	2SD882		
41	6	Q11,Q12,Q14,Q16,Q18,Q20	2SB772		30V,3A		PNP POWER BJT	SOT-32	ST	2SB772		
42	2	R1,R3	330 OHM	1%			THICK FILM RESISTOR	SMD0805	ANY		618-3195	
43	6	R2,R4,R15,R26,R33,R43	10K	1%			THICK FILM RESISTOR	SMD0805	ANY		618-5163	

STEVAL-ISV002V2												
POWER BOARD FOR 3 KW PHOTOVOLTAIC APPLICATION												
Item	Quantity	Reference	Part / Value	Tolerance %	Voltage Current	WATT	TECNOLOGY information	PACKAGE	Manufacturer	Manufacturer Code	RS/Distelec/Other Code	More Info
44	4	R5,R6,R7,R8	12 OHM	1%			THICK FILM RESISTOR	SMD0805	ANY		618-3246	
45	4	R36,R22,R35,R46	1k	1%			THICK FILM RESISTOR	SMD0805	ANY		618-3583	
46	14	R9,R10,R14,R38,R51,R25.,R32,R42,	100 OHM	1%			THICK FILM RESISTOR	SMD0805	ANY		618-5135	
47	2	R31,R44	56 OHM	1%		0.6W	METAL FILM RESISTOR	AXIAL	NEOHM	LR1F100R	148-269	
48	4	R27,R34,R37,R45	56 OHM	1%			THICK FILM RESISTOR	SMD0805	ANY		618-3432	
49	4	R17,R29,R39,R47	47 OHM	1%			THICK FILM RESISTOR	SMD0805	ANY		618-2574	
50	4	R16,R28,R40,R48,	4.7k	1%			THICK FILM RESISTOR	SMD0805	ANY		618-1408	
51	4	R18,R19,R20,R23	10k	1%			THICK FILM RESISTOR	SMD0805	ANY		618-5163	
52	2	R21,R222	12 OHM	1%			THICK FILM RESISTOR	SMD1206	ANY		223-2063	
53	4	R30,R41,R49,R50 ( R50, R41 Not Mounted)	47k	10%		10W	NON IINDUCTIVE	RESIST_NONINDUTTIVE10_S	BI TECHNOLOGIES		625-3581	
54	1	T1	TRAN_HM31			3000W	HF TRANSFORMER	trasf_fotovoltaico	MAGNETICA ITALIA	1059.0002	st supply	not assembly
55	2	VS1,VS3	LEM LV25-P				VOLTAGE SENSOR	LEMLV25_S	LEM HEME	LV 25-P	286-361	
56	1	U1	M74HCT7007				CMOS NON INV. BUFFER	SOJ.050/14/WB.300/L.400	ST	M74HCT7007RM13TR		
57	1	HEAT-SINK	0,7 KW				SIZE 200x10x40mm	SK 47/100/SA	FISCHER-ELEKTRONIK		DISTRELEC:65.24.22	
58	1	HEAT-SINK	0.4 KW				SIZE 300x10x40mm	SK56/100SA	FISCHER-ELEKTRONIK		DISTRELEC:65.00.17	
59	11	SPACER	SIZE-3x10mm				NYLON SPACER	ANY	ANY		ANY	
60	14	R11,R12,R13,R24	47 OHM	1%			THICK FILM RESISTOR	SMD0805	ANY		618-5135	
61	2	D7,D8	STTH60L06W		600v, 60A		ULTRAFST RECT.	DO-247	ST	STTH60L06W		