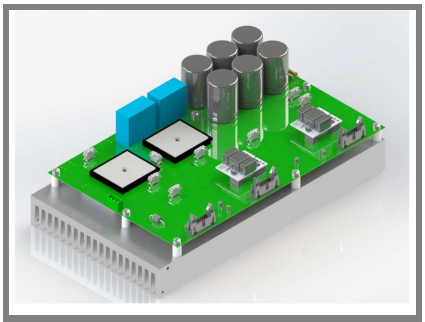
SKS 27G (E1CIF)2P + B2CI 05 V06



IGBT Module Stack

Dual Boost / Single-Phase Inverter

SKS 27G (E1CIF)2P + B2CI 05 V06

SKiiP 27GH066V1
SKYPER 12 R

P35/350F

Preliminary Data

Features

- Dual DC Input (2x MPPT)
- Hall Effect Current Sensor
- Compact design
- VCEsat protection

Typical Applications

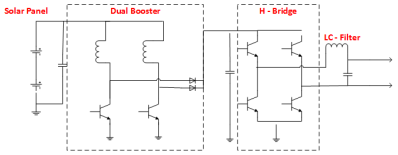
- Solar Power String Converters, On-Grid/Off-Grid Types (Optional Buck-Boost converter available)
- Multi converter design
- Industrial

Nr **08647650**

Footnotes

Electrical parameters to be derated for

$T_{amb} \geq 50$ °C



Characteristics			
Symbol	**Conditions**	**Values**	**Units**
DC Current I_{DC}	Boost channel current, Per Input Total (2x)	20 40	A A
I_{OVL}/I_{DC}	Overload Current/DC Rated Current (during 60 seconds)	48	A
AC Output Current I_N	Rated Current (rms)	43	A
I_{OVL}/I_N	Overload Current/AC Rated Current (during 60 seconds)	51	A
V_N	AC Rated Output Voltage (rms)	220	V
Conditions: T_a = 50 °C f_{sw} = 16 kHz PF = 0,85			
V_{DC}	Rated DC Link Operation (DC) - Typical Maximum DC Link Operation (DC)	400 430	V V
V_{CES}	Breakdown Voltage (IGBT module)	600	V
C C_{eqvl}	DC Link Capacitor B43503S5477M91 Equivalent capacitor bank	470/450 1880/450	µF/V µF/V
V_{DCmax}	Max DC Link Voltage	400	V
T_{vj}	IGBT Junction temperature for continuous operation	-40…+175	ºC
T_{stg}	Storage temperature	-20…+40	ºC
T_a	Ambient temperature for operation purposes	-10…+50	ºC
V_{isol}	DC/1min	2036	V
IP		IP00	-
Humidity	Humidity Level	5 - 85	%
Pollution degree	EN 50178	2	
Weight	Aprox. total weight without packing box	4.31	Kg
Cooling	Fan Not Included Minimum required forced air flow for operation	4.8	m/s
Power Losses	@ Rated Power P_{tot}, T_a= 25 ºC Efficiency (Filters Not Included), 16 kHz (At high frequency operation only)	148 97	W %
Analog Feedback	Current: Open Loop Sensor ACS770LCB-050U-P (1x, Grid Side) Voltage: Step-down resistors Temperature: Under request	-	-
Testing	Visual Inspection Functional Test		

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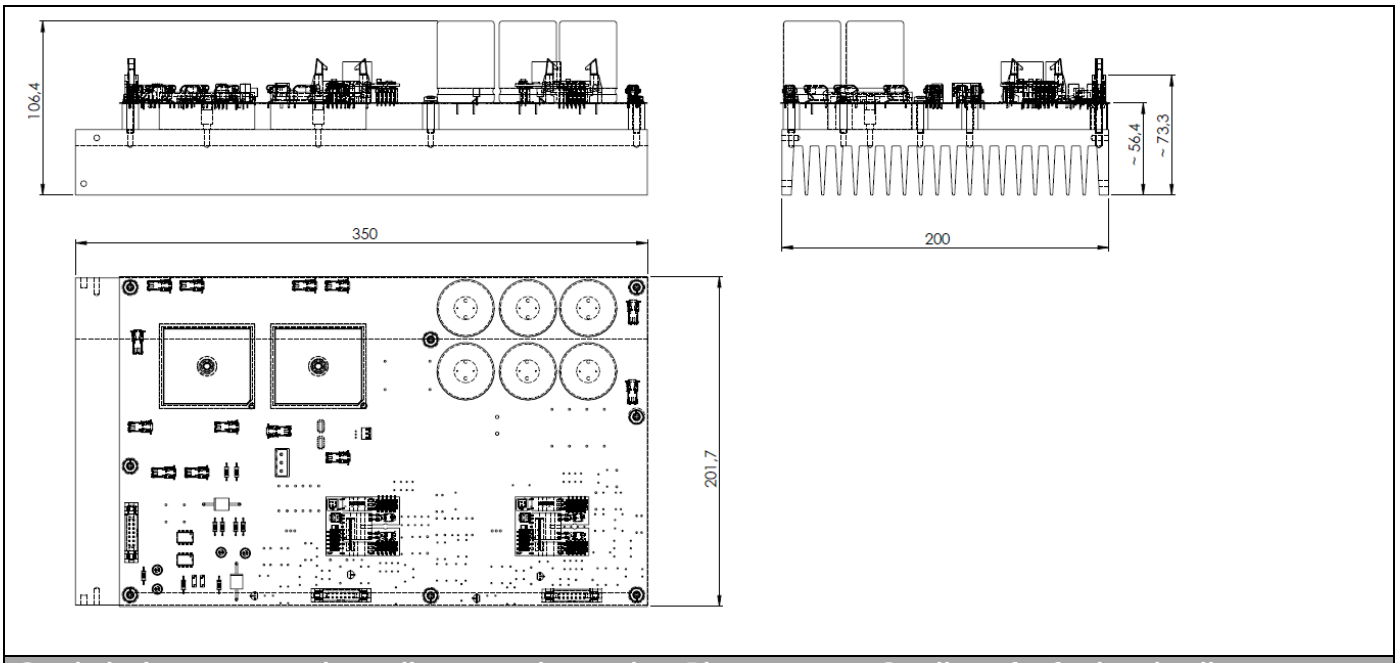
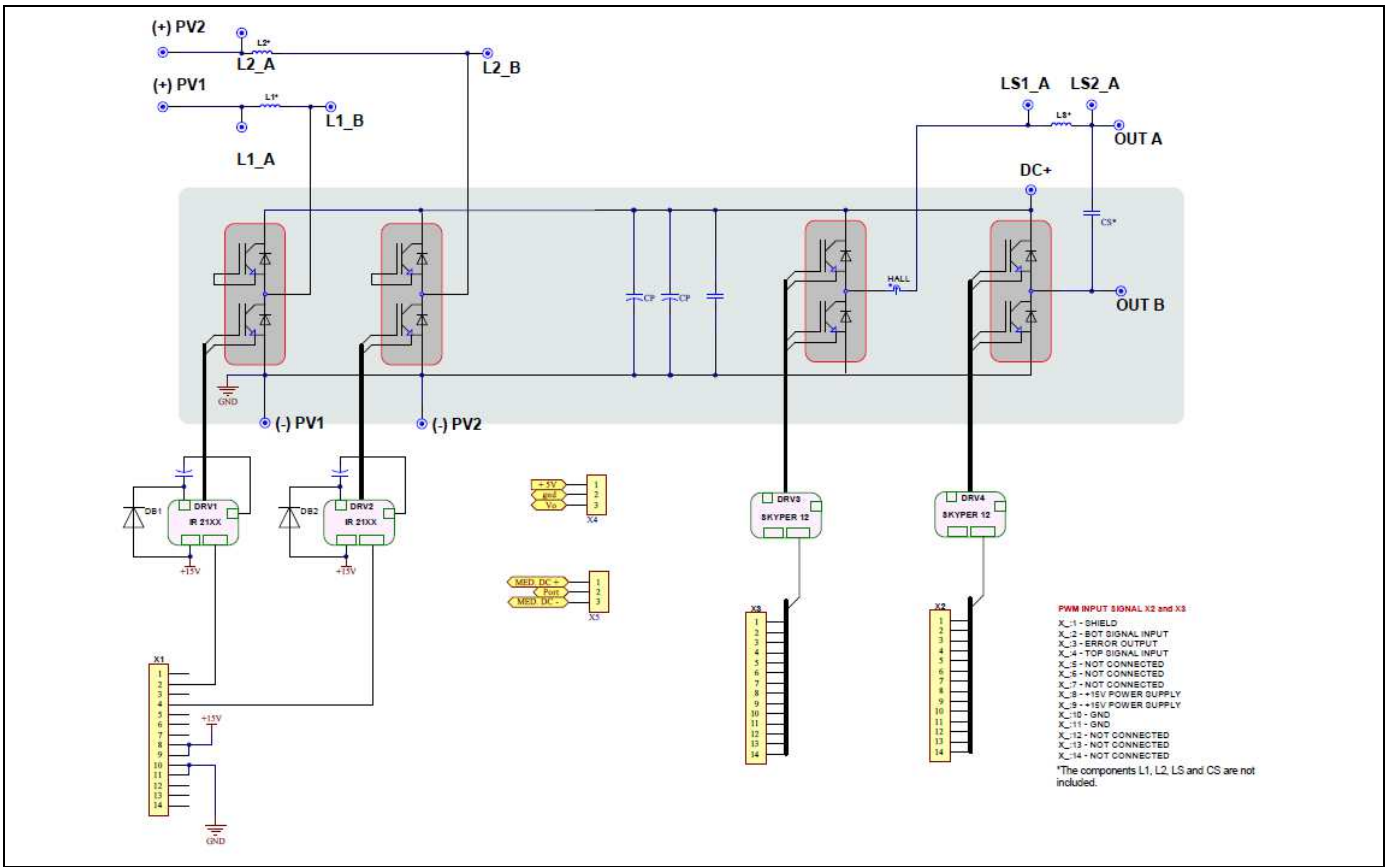
SKS 27G (E1CIF)2P + B2CI 05 V06



Stack design may vary depending upon the version. Please contact Semikron for further details.



Electrical data.

SKS 27G (E1CIF)2P + B2CI 05 V06

Connectors – Dual Boost / Single Phase Inverter Operation						
PIN N°	**Symbol**	**Description**	**Values**			**Units**
Connector – IN X1	**PWM SIGNALS**		**Min.**	**Typical**	**Max.**	
1	SHIELD	Shield connection		0		V
2	BOOST PV1	First DC input signal for boost operation (PV1)		0/15	15.6	V
3	NC	Not connected	-	-	-	
4	BOOST PV2	Second DC input signal for boost operation (PV2)		0/15	15.6	V
5	NC	Not connected	-	-	-	
6	NC	Not connected	-	-	-	
7	NC	Not connected	-	-	-	
8	Vs+	Voltage Supply	14.4	15	15.6	V
9	Vs+	Voltage Supply	14.4	15	15.6	V
10	GND[1]	Ground		0		V
11	GND[1]	Ground		0		V
12	NC	Not connected	-	-	-	
13	NC	Not connected	-	-	-	
14	NC	Not connected	-	-	-	
Connector – IN X2	**PWM SIGNALS**		**Min.**	**Typical**	**Max.**	
1	SHIELD	Shield connection		0		V
2	BOT B	Bottom switch phase B input signal		0/15	15.6	V
3	ERROR B	Phase B Error output		0/15	15.6	V
4	TOP B	Top switch phase B input signal		0		V
5	NC	Not connected	-	-	-	
6	NC	Not connected	-	-	-	
7	NC	Not connected	-	-	-	
8	Vs+	Voltage Supply	14.4	15	15.6	V
9	Vs+	Voltage Supply	14.4	15	15.6	V
10	GND[1]	Ground		0		V
11	GND[1]	Ground		0		V
12	NC	Not connected	-	-	-	
13	NC	Not connected	-	-	-	
14	NC	Not connected	-	-	-	
Connector – IN X3	**PWM SIGNALS**		**Min.**	**Typical**	**Max.**	
1	SHIELD	Shield connection		0		V
2	BOT A	Bottom switch phase A input signal		0/15	15.6	V
3	ERROR A	Phase A Error output		0/15	15.6	V
4	TOP A	Top switch phase A input signal		0		V
5	NC	Not connected	-	-	-	
6	NC	Not connected	-	-	-	
7	NC	Not connected	-	-	-	
8	Vs+	Voltage Supply	14.4	15	15.6	V
9	Vs+	Voltage Supply	14.4	15	15.6	V
10	GND[1]	Ground		0		V
11	GND[1]	Ground		0		V
12	NC	Not connected	-	-	-	
13	NC	Not connected	-	-	-	
14	NC	Not connected	-	-	-	
Connector – X4 HALL SENSOR	**CURRENT SIGNAL FEEDBACK PHASE A**		**Min.**	**Typical**	**Max.**	
1	+5V	Sensor Voltage Supply	4.5	5	5.5	V
2	GND[1]	Ground		0		V
3	V_O	Measurement Reference, 2.5 V Centered		40 mV/A		
Connector – X5	**VOLTAGE SIGNAL FEEDBACK INTERNAL DC LINK**		**Min.**	**Typical**	**Max.**	
1	MED DC+	Stepped down +DC voltage measurement, Non isolated, Non controlled/limited, 246 kOhm Series		246		kOhm

		Resistance				
2	NC	Not connected	-	-	-	
3	MED DC-	Stepped down -DC voltage measurement, Non isolated, Non controlled/limited, 246 kOhm Series Resistance		246		kOhm

Note 1 : All ground connections refer to the internal –DC link point, not isolated.

PIN N°	Symbol	Description	Values			Units
Connector	**POWER CONNECTORS**		**Min.**	**Typical**	**Max.**	
+PV1	+PV1	1st MPPT Power Connection Positive	80	250	400	V
+PV2	+PV2	2nd MPPT Power Connection Positive	80	250	400	V
L1_A	L1_A	+PV1 Boost Inductor (PV side)				
L1_B	L1_B	+PV1 Boost Inductor (converter side)				
L2_A	L2_A	+PV2 Boost Inductor (PV side)				
L2_B	L2_B	+PV2 Boost Inductor (converter side)				
-PV1	-PV1	1st MPPT Power Connection Negative		0		V
-PV2	-PV2	2nd MPPT Power Connection Negative		0		V
DC+	DC+	Positive DC Link Power Connection	315 [2]	350	400	V
LS1_A	LS1_A	Output filter power connection (converter side)				
LS2_A	LS2_A	Output filter power connection (AC load side)				
OUT A	OUT A	AC Output voltage Phase A (rms)	187	220	253	V
OUT B	OUT B	AC Output voltage Phase B (rms)				

Note 2 : Auxiliary +DC power connection, power diode not included.

Connectors Description		
Ref. Designator	**Male**	**Female**
X1	DIN 41651 (14 pins)	Plug 14 pins DIN 41651
X2	DIN 41651 (14 pins)	Plug 14 pins DIN 41651
X3	DIN 41651 (14 pins)	Plug 14 pins DIN 41651
X4	Metaltex PCMC Series	-
X5	Weidmüller SL 508 Series	-

This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.