

## SKD 116/.. - L100

## SEMIPONT™ 6

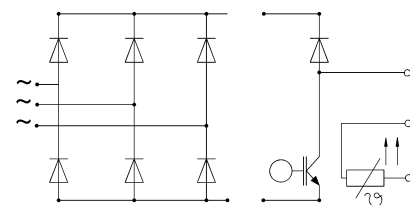
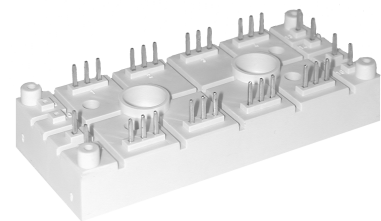
## SKD 116/.. - L100

## 3-phase bridge rectifier + IGBT braking chopper

Preliminary Data

$V_{RSM}$	$V_{RRM}$ $V_{DRM}$	$I_{RMS}$ (maximum values for continuous operation) ( $T_h = 80\text{ °C}$ ) 110 A
V	V	
1300 1700	1200 1600	<b>SKD 116/12-L100</b> <b>SKD 116/16-L100</b>

Absolute Maximum Ratings		Values	Units
Symbol	Conditions <sup>1)</sup>		
<b>Bridge Rectifier</b>			
$I_D$	$T_{heatsink} = 85\text{ °C}$ ; inductive load	110	A
$I_{FSM}/I_{TSM}$	$t_p = 10\text{ ms}$ ; sin. $180\text{ °C}$ , $T_{jmax}$	1050	A
$I^2t$	$t_p = 10\text{ ms}$ , sin. $180\text{ °C}$ , $T_{jmax}$	5500	A <sup>2</sup> s
<b>IGBT Chopper</b>			
$V_{CES}$		1200	V
$V_{GES}$		$\pm 20$	V
$I_C$	$T_{heatsink} = 25 / 70\text{ °C}$	125 / 100	A
$I_{CM}$	$t_p = 1\text{ ms}$ ; $T_{heatsink} = 25 / 70\text{ °C}$	250 / 200	A
<b>Freewheeling Diode <sup>2)</sup></b>			
$V_{RRM}$		1200	V
$I_F$	$T_{heatsink} = 25 / 70\text{ °C}$	130 / 90	A
$I_{FM}$	$t_p = 1\text{ ms}$ ; $T_{heatsink} = 25 / 70\text{ °C}$	240 / 180	A
$T_j$	Diode & IGBT	- 40 ... + 150	°C
$T_j$	Thyristor	- 40 ... + 125	°C
$T_{stg}$		- 40 ... + 125	°C
$V_{isol}$	AC, 1 min.	2500	V



- Specifications of temperature sensor see part A

### Features

- Compact design
- Two screws mounting
- Heat transfer and isolation through direct copper board (low  $R_{th}$ )
- Low resistance in steady- state and high reliability
- High surge currents
- Up to 1600 V reverse voltage
- UL recognized, file no. E 63 532

### Typical Applications

- DC drives
- Controlled field rectifiers for DC motors
- Controlled battery charger

<sup>1)</sup>  $T_{heatsink} = 25\text{ °C}$ , unless otherwise specified

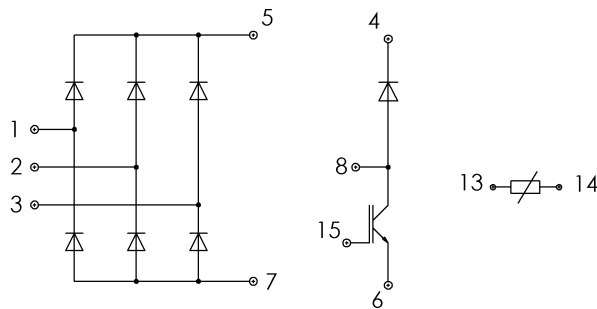
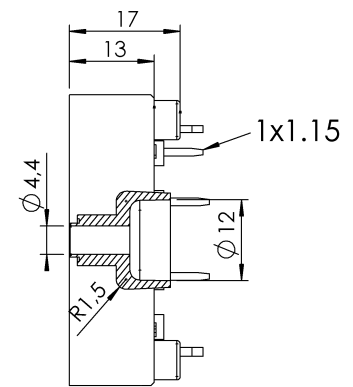
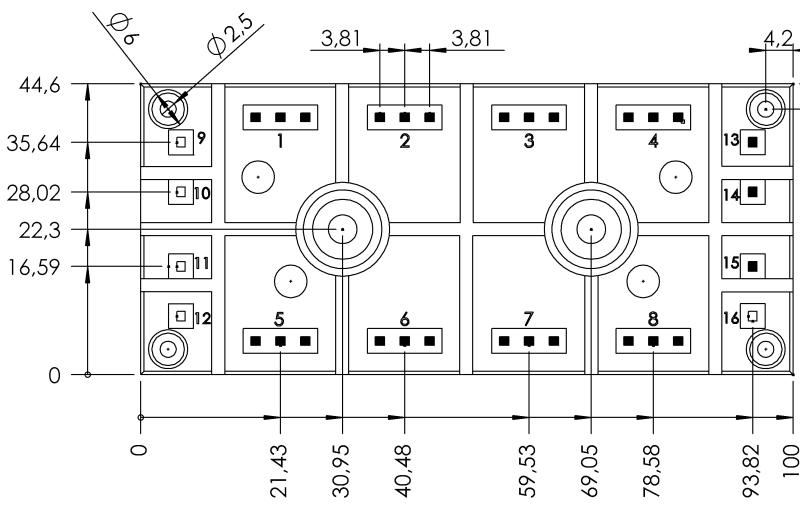
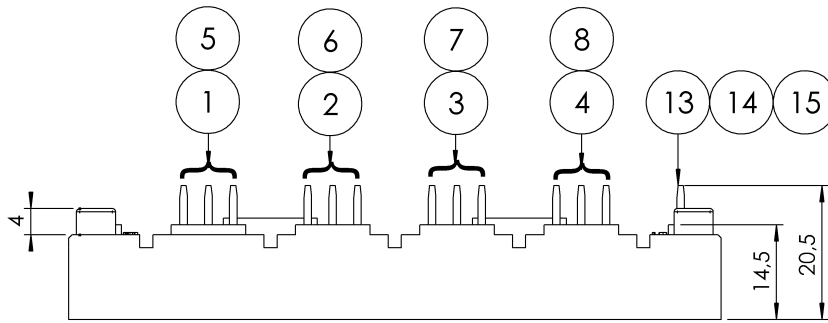
<sup>2)</sup> CAL = Controlled Axial Lifetime Technology (soft and fast recovery)

Characteristics		min.	typ.	max.	Units
Symbol	Conditions <sup>1)</sup>				
<b>Diode - Rectifier</b>					
$V_F$	$I_F = 75\text{ A}$ $T_j = 25\text{ °C}$	-	1,2	-	V
$V_{TO}$	$T_j = 125\text{ °C}$	-	0,8	-	V
$r_T$	$T_j = 125\text{ °C}$	-	7	-	mΩ
$R_{thjh}$	per diode	-	0,85	-	K/W
<b>IGBT - Chopper</b>					
$V_{CEsat}$	$I_C = 100\text{ A}$ $T_j = 25\text{ °C}$ , $V_{GE} = 15\text{ V}$	-	2,35	2,85	V
$t_{d(on)}$	$V_{CC} = 600\text{ V}$ ; $V_{GE} = \pm 15\text{ V}$	-	70	-	ns
$t_r$	$I_C = 100\text{ A}$ ; $T_j = 125\text{ °C}$	-	50	-	ns
$t_{d(off)}$	$R_{gon} = R_{goff} = 7\text{ Ω}$	-	450	-	ns
$t_f$	inductive load	-	45	-	ns
$E_{on} + E_{off}$		-	25	-	mJ
$C_{ies}$	$V_{CE} = 25\text{ V}$ ; $V_{GE} = 0\text{ V}$ , $f = 1\text{ MHz}$	-	7,7	-	nF
$R_{thjh}$	per IGBT	-	-	0,28	K/W
<b>Diode <sup>2)</sup> - Freewheeling</b>					
$V_F$	$I_F = 100\text{ A}$ $T_j = 25\text{ °C}$	-	2,0	2,5	V
$V_{TO}$	$T_j = 125\text{ °C}$	-	1,1	1,2	V
$r_T$	$T_j = 125\text{ °C}$	-	-	11	mΩ
$I_{RRM}$	$I_F = 100\text{ A}$ ; $V_R = -600\text{ V}$	-	65	-	A
$Q_{rr}$	$di_f/dt = -1000\text{ A}/\mu\text{s}$	-	15	-	μC
$E_{off}$	$V_{GE} = 0\text{ V}$ , $T_j = 125\text{ °C}$	-	TBD	-	mJ
$R_{thjh}$	per diode	-	-	0,56	K/W
<b>Temperature Sensor</b>					
$R_{TS}$	$T = 25 / 100\text{ °C}$		1000 / 1670		Ω
<b>Mechanical Data</b>					
$M_1$	case to heatsink, SI Units	2,5	-	3,5	Nm
Case			G 60		

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Case G 60



Dimensions in mm

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