I. Power section 3 * SKiiP603GB122CT per phase

Absolute maximum ratings			
Symbol	**Conditions**	**Values**	**Units**
IGBT			
V_{CES}		1200	V
V_{CC} [1]	Operating DC link voltage	900	V
V_{GES}		± 20	V
I_C	$T_{heat\ sink}$ = 25 (70) °C	1800 (1350)	A
Inverse diode			
I_F	$T_{heat\ sink}$ = 25 (70) °C	1800 (1350)	A
I_{FSM}	T_j = 150 °C, t_p = 10ms; sin	12960	A
I^2t (Diode)	Diode, T_j = 150 °C, 10ms	840	kA^2s
T_j , (T_{stg})		-40...+150 (125)	°C
V_{isol}	AC, 1min.	3000	V
$I_{C\text{-}package}$	$T_{heat\ sink}$ = 70°C, T_{term} [3] =115°C	3 * 500	A

Characteristics					
Symbol	**Conditions**	**min.**	**typ.**	**max.**	**Units**
IGBT					
V_{CEsat} [5]	I_C = 900A, T_j = 25 (125)°C	–	2,0 (2,2)	2,3	V
V_{CEO}	V_{GE} = 15V; T_j = 25 (125) °C	–	1,2 (1,1)	1,3 (1,2)	V
r_{CE}	V_{GE} = 15V; T_j = 25 (125) °C	–	1,0 (1,5)	1,3 (1,7)	mΩ
$E_{on} + E_{off}$ [4]	I_C=900A Vcc=600V	–	270	–	mJ
	T_j=125°C Vcc=900V	–	480	–	mJ
I_{CES}	V_{GE}=0,V_{CE}=V_{CES},T_j=25(125) °C	–	3,6 (108)	–	mA
L_{CE}	top, bottom	–	3	–	nH
$R_{CC'-EE'}$	terminal-chip, T_j=25 °C	–	0,13	–	mΩ
Inverse diode					
V_F [5] = V_{EC}	I_F= 900A; T_j = 25(125) °C	–	1,9 (1,5)	2,2	V
V_{TO}	T_j = 25 (125) °C	–	1,2 (0,9)	1,4 (1,0)	V
r_T	T_j = 25 (125) °C	–	0,9 (0,9)	1,0 (1,0)	mΩ
E_{RR} [4]	I_C=900A Vcc=600V	–	72	–	mJ
	T_j=125°C Vcc=900V	–	109	–	mJ
Thermal characteristics					
R_{thjs}	per IGBT	–	–	0,019	°C/W
R_{thjs}	per diode	–	–	0,037	°C/W
R_{thsa} [2]	W: NWK 40; 8l/min; 50%glyc.	–	–	0,010	°C/W
Current sensor					
$I_{p\ RMS}$	T_a=100° C , V_{supply} = ± 15V		3 * 400		A
$I_{pmax\ RMS}$	t ≤ 2 s, T_a=100° C		3 * 500		A
Mechanical data					
M1	DC terminals, SI Units	4	–	6	Nm
M2	AC terminals, SI Units	8	–	10	Nm

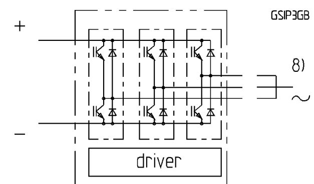
SKiiP® 3

SK integrated intelligent Power PACK 2-pack

SKiiP 1803GB122-3DW [2]

Target data

housing S33



Features

- SKiiP technology inside
  - pressure contact of ceramic to heat sink; low thermal impedance
  - pressure contact of main electric terminals
  - pressure contact of auxiliary electric terminals
  - increased thermal cycling capability
  - low stray inductance
  - homogenous current distribution
- low loss IGBTs
- CAL diode technology
- integrated current sensor
- integrated temperature sensor
- high power density

[1] assembly of suitable MKP capacitor per terminal is mandatory (SEMIKRON type 41046230 is recommended)

[2] D integrated gate driver
U with DC-bus voltage measurement (option for GB)
L mounted on standard heat sink for forced air cooling
W mounted on standard liquid cooled heat sink

[3] T_{term} = temperature of terminal

[4] with SKiiP 3 gate driver

[5] measured at chip level

This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee, expressed or implied is made regarding delivery, performance or suitability.