I. Power section 2 * SKiiP503GB171CT per phase

Absolute maximum ratings			
Symbol	**Conditions**[1]	**Values**	**Units**
IGBT			
V_{CES}		1700	V
V_{CC}	Operating DC link voltage	1200	V
V_{GES}		± 20	V
I_C	$T_{heat\ sink}$ = 25 (70) °C	1000 (750)	A
Inverse diode			
I_F	$T_{heat\ sink}$ = 25 (70) °C	1000 (750)	A
I_{FSM}	T_j = 150 °C, t_p = 10ms; sin	8640	A
I^2t (Diode)	Diode, T_j = 150 °C, 10ms	373	kA^2s
T_j , (T_{stg})		-40...+150 (125)	°C
V_{isol}	AC, 1min.	4000	V
$I_{C\text{-}package}$	$T_{heat\ sink}$ = 70°C, T_{term}[3] =115°C	2 * 500	A

Characteristics					
Symbol	**Conditions**[1]	**min.**	**typ.**	**max.**	**Units**
IGBT					
V_{CEsat}[5]	I_C = 600A, T_j = 25 (125)°C	_	2,7 (3,1)	3,2	V
V_{CEO}	V_{GE} = 15V; T_j = 25 (125) °C	_	1,5 (1,6)	1,7 (1,8)	V
r_{CE}	V_{GE} = 15V; T_j = 25 (125) °C	_	2,1 (2,8)	2,7 (3,3)	mΩ
E_{on} + E_{off}[4]	I_C=600A Vcc=900V	_	600	_	mJ
	T_j=125°C Vcc=1200V	_	885	_	mJ
I_{CES}	V_{GE}=0,V_{CE}=V_{CES},T_j=25(125) °C	_	2,4 (144)	_	mA
L_{CE}	top, bottom	_	5	_	nH
$R_{CC'\text{-}EE'}$	resistance, terminal-chip	_	0,20	_	mΩ
Inverse diode					
V_F[5] = V_{EC}	I_F= 600A; T_j = 25(125) °C	_	2,0 (1,8)	2,3	V
V_{TO}	T_j = 25 (125) °C	_	1,5 (1,2)	1,7 (1,4)	V
r_T	T_j = 25 (125) °C	_	1,0 (1,2)	1,2 (1,3)	mΩ
E_{RR}[4]	I_C=600A Vcc=900V	_	72	_	mJ
	T_j=125°C Vcc=1200V	_	105	_	mJ
Thermal characteristics					
R_{thjs}	per IGBT	_	_	0,028	°C/W
R_{thjs}	per diode	_	_	0,055	°C/W
R_{thsa}[2]	W: NWK 40; 8l/min; 50%glyc.	_	_	0,013	°C/W
Current sensor					
$I_{p\ RMS}$	T_a=100° C , V_{supply} = ± 15V		2 * 400		A
$I_{pmax\ RMS}$	t ≤ 2 s, T_a=100° C		2 * 500		A
Mechanical data					
M1	DC terminals, SI Units	4	_	6	Nm
M2	AC terminals, SI Units	8	_	10	Nm

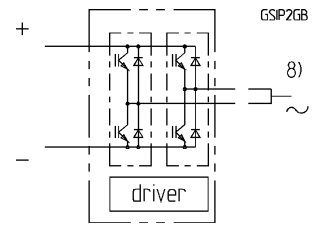
SKiiP® 3

SK integrated intelligent Power PACK 2-pack

SKiiP 1003GB171-2DW [2]

Target data

housing S23



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
- CAL diode technology
- integrated current sensor
- integrated temperature sensor
- high power density

1) $T_{heatsink}$ = 25 °C, unless otherwise specified

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

8) external paralleling necessary