SKiiP 342 GD 120 - 314 CTV

Absolute Maximum Ratings			
Symbol	Conditions 1)	Values	Units
V_{isol} 4)	AC, 1min	3000	V
T_{op} ,T_{stg}	Operating / stor. temperature	-25...+85	°C
IGBT and Inverse Diode			
V_{CES}		1200	V
V_{CC} 5)	Operating DC link voltage	900	V
I_C	IGBT	300	A
T_j 3)	IGBT + Diode	-40...+150	°C
I_F	Diode	300	A
I_{FM}	Diode, t_p < 1 ms	600	A
I_{FSM}	Diode, T_j = 150 °C, 10ms; sin	2160	A
I^2t (Diode)	Diode, T_j = 150 °C, 10ms	23	kAs^2
Driver			
V_{S1}	Stabilized Power Supply	18	V
V_{S2}	Non-stabilized Power Supply	30	V
f_{smax}	Switching frequency	20	kHz
dV/dt	Primary to secondary side	75	kV/µs

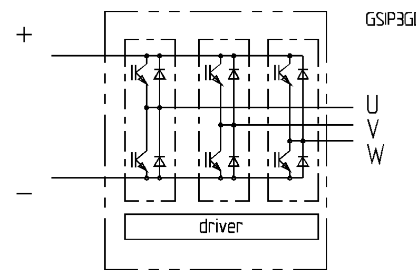
Characteristics					
Symbol	Conditions 1)	min.	typ.	max.	Units
IGBT 11)					
$V_{(BR)CES}$	Driver without supply	≥V_{CES}	–	–	V
I_{CES}	V_{GE} = 0, T_j = 25 °C	–	–	0,4	mA
	V_{CE} = V_{CES} T_j = 125 °C	–	15	–	mA
V_{TO}	T_j = 125 °C	–	–	1,38	V
r_T	T_j = 125 °C	–	–	7,4	mΩ
V_{Cesat}	I_C = 250A, T_j = 125 °C	–	–	3,2	V
V_{Cesat}	I_C = 250A, T_j = 25 °C	–	–	3,05	V
E_{on} + E_{off}	V_{CC}=600/900V,I_C=300A T_j = 125 °C	–	–	90/146	mJ
C_{CHC}	per SkiiP, AC side	–	1,4	–	nF
L_{CE}	Top, Bottom	–	15	–	nH
Inverse Diode 2)					
V_F = V_{EC}	I_F= 250A; T_j = 125 °C	–	–	2,43	V
V_F= V_{EC}	I_F= 250A; T_j = 25 °C	–	–	2,55	V
E_{on} + E_{off}	I_F= 300A; T_j = 125 °C	–	–	12	mJ
V_{TO}	T_j = 125 °C	–	0,91	–	V
r_T	T_j = 125 °C	–	3,8	–	mΩ
Thermal Characteristics					
R_{thjs} 10)	per IGBT	–	–	0,090	°C/W
R_{thjs} 10)	per Diode	–	–	0,250	°C/W
R_{thsa} 6,10)	P16 heatsink; see case S3	–	–	0,036	°C/W
Driver					
I_{S1}	Supply current 15V-supply		$340+520*f_s/f_{smax}+3,5*I_{AC}/A$		mA
I_{S2}	Supply current 24V-supply		$250+380*f_s/f_{smax}+2,6*I_{AC}/A$		mA
$t_{interlock-driver}$	Interlock-time		2,3		µs
SKiiPPACK protection					
I_{TRIPSC}	Short circuit protection		375 ± 2%		A
I_{TRIPLG}	Ground fault protection		87 +/- 2%		A
T_{TRIP}	Over-temp. protection		115 ± 5%		°C
U_{DCTRIP} 9)	U_{DC}-protection		920 ± 2%		V
Mechanical Data					
M1	DC terminals, SI Units	4	–	6	Nm
M2	AC terminals, SI Units	8	–	10	Nm

SKiiPPACK®

SK integrated intelligent Power PACK 3-phase bridge SKiiP 342 GD 120 - 314 CTV 7,9)

Preliminary Data

Case S3



Features

- Short circuit protection, due to evaluation of current sensor signals
- Isolated power supply
- Low thermal impedance
- Optimal thermal management with integrated heatsink
- Pressure contact technology with increased power cycling capability, compact design
- Low stray inductance
- High power, small losses
- Over-temperature protection

1) $T_{heatsink}$ = 25 °C, unless otherwise specified
2) CAL = Controlled Axial Lifetime Technology (soft and fast)
3) without driver
4) Driver input to DC link/ AC output to heatsink
5) with Semikron-DC link (low inductance)
6) other heatsinks on request
7) C - Integrated current sensors
T - Temperature protection
V - 15 V or 24 V power supply
9) options available for driver:
U - DC link voltage sense
F – Fiber optic connector
10) “$_s$” referenced to temperature sensor
11) NPT-technology with homogenous current-distribution