

SKiiP 192 GD 170 - 374 CTV

Absolute Maximum Ratings		Values	Units
Symbol	Conditions ¹⁾		
$V_{ISOL}^{4)}$	AC, 1min	4000	V
T_{op}, T_{stg}	Operating / stor. temperature	-25...+85	°C
IGBT and InverseDiode			
V_{CES}		1700	V
$V_{CC}^{5)}$	Operating DC link voltage	1200	V
I_C	IGBT	150	A
$T_J^{3)}$	IGBT + Diode	-40...+150	°C
I_F	Diode	150	A
I_{FM}	Diode, $t_p < 1$ ms	300	A
I_{FSM}	Diode, $T_J = 150$ °C, 10ms; sin	1440	A
I^2t (Diode)	Diode, $T_J = 150$ °C, 10ms	10	kAs ²
Driver			
V_{S1}	Stabilized Power Supply	18	V
V_{S2}	Non-stabilized Power Supply	30	V
f_{smax}	Switching frequency	20,0	kHz
dV/dt	Primary to secondary side	75	kV/μs

Characteristics		min.	typ.	max.	Units
Symbol	Conditions ¹⁾				
IGBT					
V _{(BR)CES}	Driver without supply	≥V _{CES}	—	—	V
I _{CES}	V _{GE} = 0, T _J = 25 °C	—	—	1	mA
	V _{CE} = V _{CES} T _J = 125 °C	—	10	—	mA
V _{CE0}	T _J = 125 °C	—	1,77	—	V
r _C	T _J = 125 °C	—	23,6	—	mΩ
V _{Cesat}	I _C = 140A, T _J = 125 °C	—	5,1	—	V
V _{Cesat}	I _C = 140A, T _J = 25 °C	—	—	3,85	V
E _{on} + E _{off}	V _{CC} =900/1200V, I _C =150A T _J = 125 °C	—	127/195	—	mJ
C _{CHC}	per SkiIP, AC side	—	0,8	—	nF
L _{CE}	Top, Bottom	—	15	—	nH
Inverse Diode ²⁾					
V _F = V _{EC}	I _F = 140A; T _J = 125 °C	—	2,0	—	V
V _F = V _{EC}	I _F = 140A; T _J = 25 °C	—	—	3,0	V
E _{on} + E _{off}	I _F = 150A; T _J = 125 °C	—	18	—	mJ
V _{TO}	T _J = 125 °C	—	0,90	—	V
r _T	T _J = 125 °C	—	8,1	—	mΩ
Thermal Characteristics					
R _{thjs} ¹⁰⁾	per IGBT	—	—	0,114	°C/W
R _{thjs} ¹⁰⁾	per Diode	—	—	0,400	°C/W
R _{thsa} ^{6,10)}	P16 heatsink; see case S3	—	—	0,036	°C/W
Driver					
I _{S1}	Supply current 15V-supply	340+380*f _s /f _{smax} +3,5*I _{AC} /A			mA
I _{S2}	Supply current 24V-supply	250+260*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	188 ± 2%			A
I _{TRIPLG}	Ground fault protection	43			A
T _{TRIP}	Over-temp. protection	115 ± 5%			°C
U _{DCTRIP} ⁹⁾	U _{DC} -protection	1225 ± 2%			V
Mechanical Data					
M1	DC terminals, SI Units	4	—	6	Nm
M2	AC terminals, SI Units	8	—	10	Nm

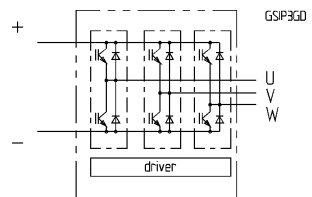
SKiiPACK^a

SK integrated intelligent Power PACK

3-phase bridge SKiiP

192 GD 170 - 374 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 DC link / AC output to heatsink
- 5) with Semikron-DC link (low inductance)
- 6) other heatsinks on request
- 7) C - Integrated current sensors
- 8) T - Temperature protection
- 9) V - 15 V or 24 V power supply options available for driver: U - DC link voltage sense F - Fiber optic connector
- 10) "s" referenced to temperature sensor

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