

Absolute Maximum Ratings			
Symbol	Conditions ¹⁾	Values	Units
V _{CEs}		1200	V
V _{GES}		± 20	V
I _C	T _{heatsink} = 25 / 80°C	120 / 90	A
I _{CM}	t _p < 1 ms; T _{heatsink} = 25/80°C	240 / 180	A
T _j		- 55 ... + 150	°C
T _{stg}		- 55 ... + 125	°C
V _{isol}	AC, 1 min.	2600	V
Inverse Diode			
I _F =-I _C	T _{heatsink} = 25 / 80°C	100 / 75	A
I _{FM} =-I _{CM}	t _p < 1 ms; T _{heatsink} = 25/80°C	240 / 180	A
I _{FSM}	t _p = 10 ms; sin., T _j = 25 °C	720	A
I ² t	t _p = 10 ms; sin., T _j = 25 °C	2600	A ² s

MiniSKiiP 8
SK integrated
intelligent Power
SKiiP 83 AC 12
SKiiP 83 AC 12 I ³⁾
IGBT
3-phase bridge inverter
Preliminary Data
Case M8

Characteristics					
Symbol	Conditions ¹⁾	min.	typ.	max.	Units
IGBT - Inverter					
V _{CEsat}	I _C = 90 A { T _j = 25 (125) °C }	-	2,5(3,1)	3,0(3,7)	V
V _{CEsat}	I _C = 120 A { T _j = 25 (125) °C }	-	2,9(3,7)	-	V
t _{d(on)}	V _{CC} = 600 V; V _{GE} = 15 V	-	44	100	ns
t _r	I _C = 90A; T _j = 125 °C	-	70	140	ns
t _{d(off)}	R _{gon} = R _{goff} = 15 Ω	-	450	600	ns
t _f	inductive load	-	70	100	ns
E _{on} + E _{off}		-	18	-	mJ
C _{ies}	V _{CE} = 25 V; V _{GE} = 0 V, 1MHz	-	6,6	-	nF
R _{thjh}	per IGBT	-	-	0,25	K/W
Diode ²⁾ - Inverter					
V _F = V _{EC}	I _F = 70 A { T _j = 25 (125) °C }	-	2,0(1,8)	2,5(2,3)	V
	I _F = 90 A { T _j = 25 (125) °C }	-	2,2(2,0)	-	V
V _{TO}	T _j = 125 °C	-	1,0	1,2	V
r _T	T _j = 125 °C	-	11	15	mΩ
I _{RRM}	I _F = 75 A, V _R = - 600 V	-	40	-	A
Q _{rr}	di _F /dt = - 800 A/μs	-	9,5	-	μC
E _{off}	V _{GE} = 0 V, T _j = 125 °C	-	3	-	mJ
R _{thjh}	per diode	-	-	0,8	K/W
Current sensor for three phase output ac current					
I _{p RMS}	Continuous current , T = 100 °C, V _{supply} = ± 15V	-	50	-	A
I _{pmax RMS}	t ≤ 2 s	-	-	80	A
I _{p peak}	t ≤ 10 μs	-	1000	-	A
R _{out}	terminating resistance	-	50	-	Ω
I _{s RMS}	rated sensor current at I _p = 50 A _{RMS}		25		mA
I _p : I _s	transfer ratio		1 : 2000		
Offset error	I _p = 0 A, T = -40 ... 100 °C	-	± 0,2	-	mA
Linearity		-	0,1	-	%
delay time	I _p = 10 % - 80 %	-	< 1	-	μs
	90 % - 20 %	-	< 1	-	μs
Bandwidth			0 - 100	(-3dB)	kHz
Temperature Sensor					
R _{TS}	T = 25/100 °C		1000 / 1670		Ω
Mechanical Data					
M1	case to heatsink, SI Units	3	-	4	Nm
Case			M8		

Features

- High level power integration
- Two-screws-mounting to the customer heatsink, compact design
- Low thermal impedance due to durable ceramic insulation
- Pressure contact technology with simple connection to DCB through pressure contact (no soldering) and with increased power cycling capability
- Low stray inductance
- High power density, low losses
- Integrated temperature sensor
- Three integrated compensated current sensors for the ac current (SKiiP 83 AC 12 I)
- Mechanical drawing available on disc for Auto CAD 12 (.DWG, .DXF)

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

²⁾ CAL = Controlled Axial Lifetime Technology (soft and fast recovery)

³⁾ With integrated current sensors Available November 1996.

