

SKiiP 39AHB086V1



MiniSKiiP® 2

3-phase bridge rectifier + brake chopper

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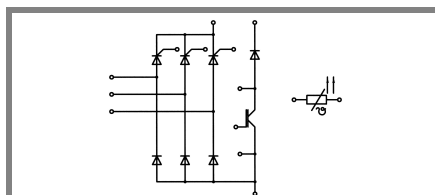
Target Data

Features

- Trench IGBTs
- Robust and soft freewheeling diodes in CAL technology
- Highly reliable spring contacts for electrical connenctions
- UL recognised file no. E63532

Typical Applications

- Input bridge for Inverter up to 30 kVA



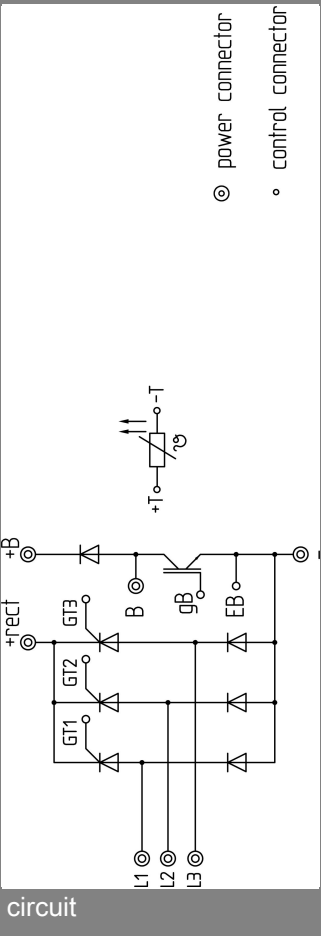
AHB

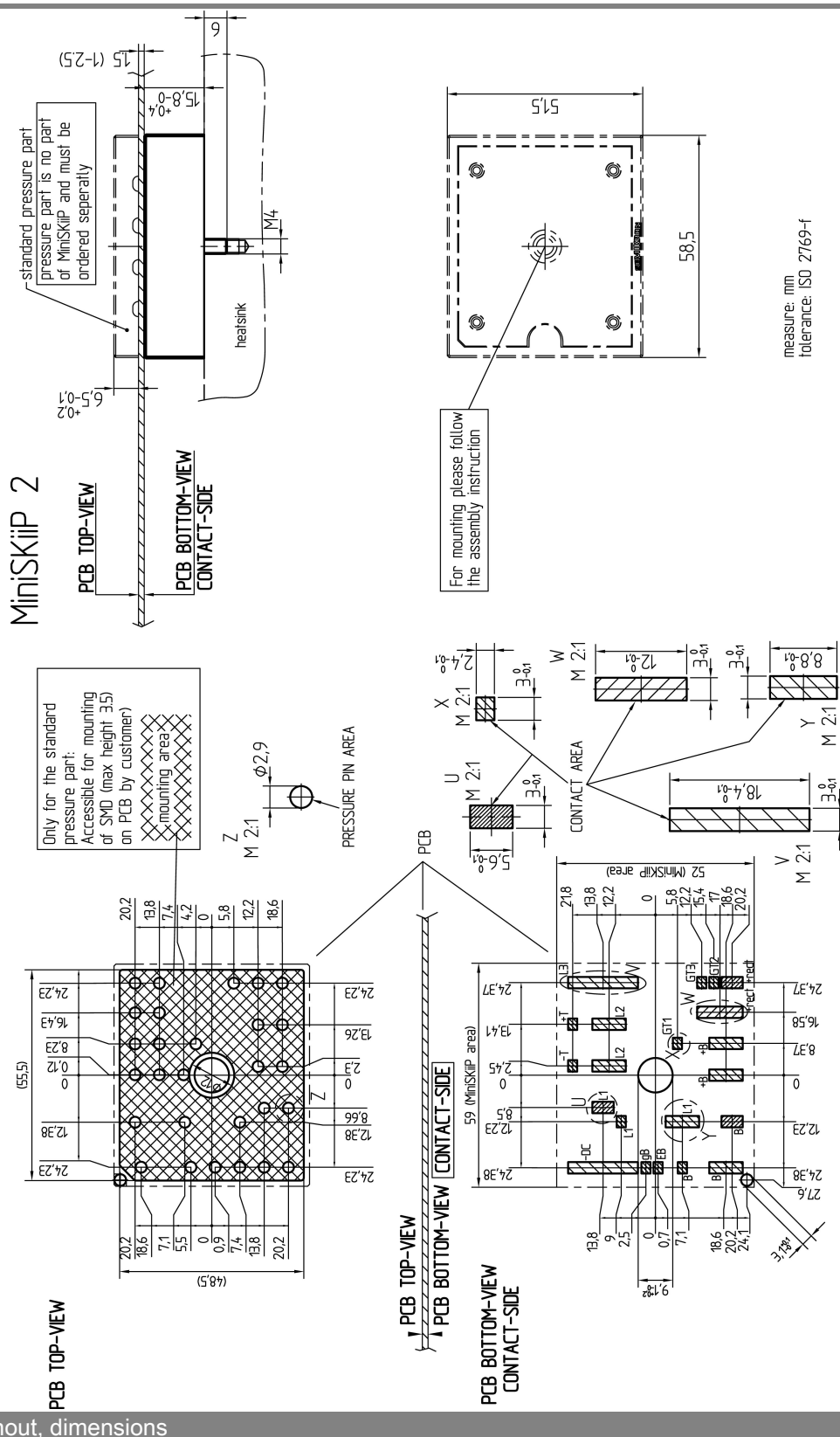
Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT - Chopper			
V_{CES}		600	V
I_C	$T_s = 25\text{ (70) °C}$		A
I_{CRM}	$T_s = 25\text{ (70) °C}$, $t_p \leq 1\text{ ms}$		A
V_{GES}		± 15	V
T_j		$-40 \dots +150$	°C
Diode - Chopper			
I_F	$T_s = 25\text{ (70) °C}$		A
I_{FRM}	$T_s = 25\text{ (70) °C}$, $t_p \leq 1\text{ ms}$		A
T_j		$-40 \dots +150$	°C
Diode / Thyristor - Rectifier			
V_{RRM}		800	V
I_F / I_T	$T_s = 70$	82	A
I_{FSM} / I_{TSM}	$t_p = 10\text{ ms}$, $\sin 180^\circ$, $T_j = 25\text{ °C}$	1050	A
i^2t	$t_p = 10\text{ ms}$, $\sin 180^\circ$, $T_j = 25\text{ °C}$	5500	A ² s
T_j	Diode	$-40 \dots +150$	°C
T_j	Thyristor	$-40 \dots +125$	°C
I_{RMS}	per power terminal (20 A / spring)	120	A
T_{stg}	$T_{op} \leq T_{stg}$	$-40 \dots +125$	°C
V_{isol}	AC, 1 min.	2500	V

Characteristics		$T_s = 25\text{ °C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT - Chopper					
V_{CEsat}	$I_C = 150\text{ A}$, $T_j = 25\text{ (125) °C}$		2 (2,2)	2,5 (2,7)	V
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 3\text{ mA}$	3	4	5	V
$V_{CE(TO)}$	$T_j = 25\text{ (125) °C}$		1,2 (1,1)	1,3 (1,2)	V
r_T	$T_j = 25\text{ (125) °C}$		5,3 (7,3)	8 (10)	mΩ
C_{ies}	$V_{CE} = 25\text{ V}$, $V_{GE} = 0\text{ V}$, $f = 1\text{ MHz}$		9		nF
C_{oes}	$V_{CE} = 25\text{ V}$, $V_{GE} = 0\text{ V}$, $f = 1\text{ MHz}$		1,7		nF
C_{res}	$V_{CE} = 25\text{ V}$, $V_{GE} = 0\text{ V}$, $f = 1\text{ MHz}$		2,1		nF
$R_{th(j-s)}$	per IGBT		0,4		K/W
$t_{d(on)}$	under following conditions		20		ns
t_r	$V_{CC} = 300\text{ V}$, $V_{GE} = \pm 15\text{ V}$		25		ns
$t_{d(off)}$	$I_C = 150\text{ A}$, $T_j = 125\text{ °C}$		185		ns
t_f	$R_{Gon} = R_{Goff} = 4\text{ Ω}$		15		ns
E_{on}	inductive load		5,7		mJ
E_{off}			3,7		mJ
Diode - Chopper					
$V_F = V_{EC}$	$I_F = 150\text{ A}$, $T_j = 25\text{ (125) °C}$		1,7 (1,7)	2,1 (2,1)	V
$V_{(TO)}$	$T_j = 25\text{ (125) °C}$		1 (0,9)	1,1 (1)	V
r_T	$T_j = 25\text{ (125) °C}$		4,7 (5,3)	6,7 (7,3)	mΩ
$R_{th(j-s)}$	per diode		0,55		K/W
I_{RRM}	under following conditions		270		A
Q_{rr}	$I_F = 150\text{ A}$, $V_R = 300\text{ V}$		18		μC
E_{rr}	$V_{GE} = 0\text{ V}$, $T_j = 125\text{ °C}$		3,5		mJ
	$di_F/dt = 13700\text{ A/μs}$				

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Characteristics		T _s = 25 °C, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
Diode - Rectifier					
V _F	I _F = 75 A, T _j = 25 °C		1,2		V
V _{T(0)}	T _j = 150 °C		0,8		V
r _T	T _j = 150 °C		7		mΩ
R _{th(j-s)}	per diode		0,7		K/W
Thyristor - Rectifier					
V _T	I _F = 120 A, T _j = 25 (125) °C			1,8 (1,7)	V
V _{T(T0)}	T _j = 125 °C			1,1	V
r _T	T _j = 125 °C			5	mΩ
V _{GT}	T _j = 25 °C			3	V
I _{GT}	T _j = 25 °C	150			mA
I _H	T _j = 25 °C		200		mA
I _L	T _j = 25 °C		400		mA
dv/dt _(cr)	T _j = 125 °C			1000	V/μs
di/dt _(cr)	T _j = 125 °C			50	A/μs
R _{th(j-s)}	per thyristor		0,65		K/W
Temperature Sensor					
R _{ts}	3 %, T _r = 25 (100) °C		1000(1670)		Ω
Mechanical Data					
w			65		g
M _s	Mounting torque	2		2,5	Nm





This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

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