

SKiiP 23NAB12T4V1



MiniSKiiP[®] 2

3-phase bridge rectifier +
brake chopper + 3-phase
bridge inverter
SKiiP 23NAB12T4V1

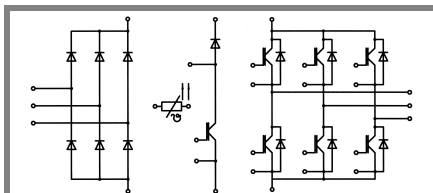
Target Data

Features

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

Remarks

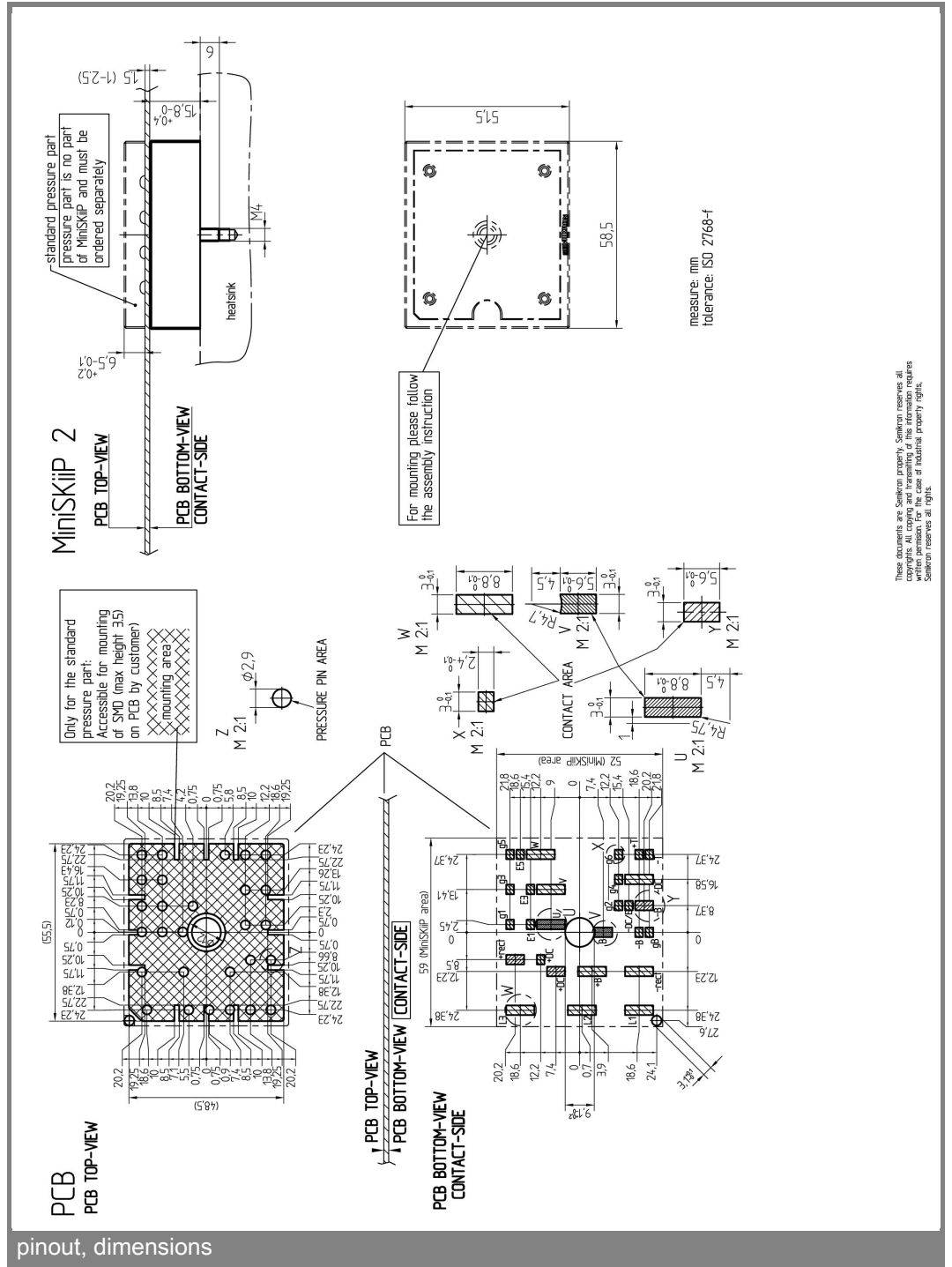
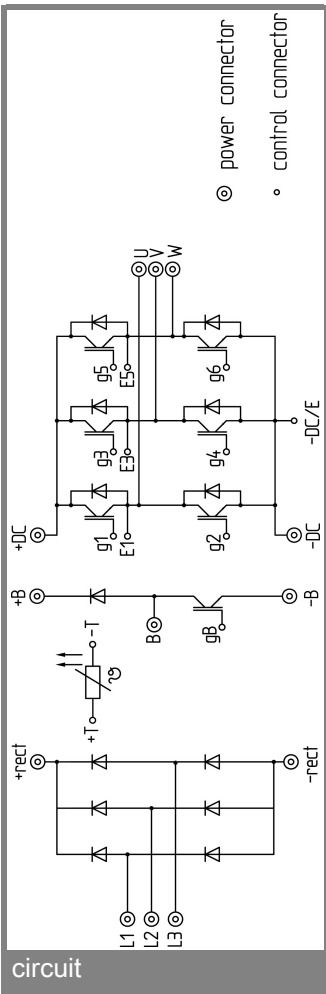
- V_{CEsat} , V_F = chip level value



NAB

Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT - Inverter, Chopper			
V_{CES}		1200	V
I_C	$T_s = 25\text{ (70) °C}$	44 (35)	A
I_{CRM}	$t_p \leq 1\text{ ms}$	75	A
V_{GES}		± 20	V
T_j		- 40 ... + 175	°C
Diode - Inverter, Chopper			
I_F	$T_s = 25\text{ (70) °C}$	30 (24)	A
I_{FRM}	$t_p \leq 1\text{ ms}$	75	A
T_j		- 40 ... + 175	°C
Diode - Rectifier			
V_{RRM}		1600	V
I_F	$T_s = 70\text{ °C}$	46	A
I_{FSM}	$t_p = 10\text{ ms, sin } 180\text{ °, } T_j = 25\text{ °C}$	370	A
i^2t	$t_p = 10\text{ ms, sin } 180\text{ °, } T_j = 25\text{ °C}$	680	A ² s
T_j		- 40 ... + 150	°C
I_{tRMS}	per power terminal (20 A / spring)	40	A
T_{stg}	$T_{op} \leq T_{stg}$	- 40 ... + 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 - Inverter, Chopper					
V_{CEsat}	$I_{Cnom} = 25\text{ A, } T_j = 25\text{ (150) °C}$		1,85 (2,25)	2,05 (2,45)	V
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = 1\text{ mA}$	5	5,8	6,5	V
$V_{CE(TO)}$	$T_j = 25\text{ (150) °C}$		1,1 (1)	1,3 (1,2)	V
r_T	$T_j = 25\text{ (150) °C}$		30 (50)	30 (50)	mΩ
C_{ies}	$V_{CE} = 25\text{ V, } V_{GE} = 0\text{ V, } f = 1\text{ MHz}$		-	-	nF
C_{oes}	$V_{CE} = 25\text{ V, } V_{GE} = 0\text{ V, } f = 1\text{ MHz}$		-	-	nF
C_{res}	$V_{CE} = 25\text{ V, } V_{GE} = 0\text{ V, } f = 1\text{ MHz}$		-	-	nF
$R_{th(j-s)}$	per IGBT		0,96		K/W
$t_{d(on)}$	under following conditions		-	-	ns
t_r	$V_{CC} = 600\text{ V, } V_{GE} = \pm 15\text{ V}$		-	-	ns
$t_{d(off)}$	$I_{Cnom} = 25\text{ A, } T_j = 150\text{ °C}$		-	-	ns
t_f	$R_{Gon} = R_{Goff} = 24\text{ Ω}$		-	-	ns
E_{on}	inductive load		2,65		mJ
E_{off}			2,4		mJ
Diode - Inverter, Chopper					
$V_F = V_{EC}$	$I_{Fnom} = 25\text{ A, } T_j = 25\text{ (150) °C}$		2,4 (2,45)	2,75 (2,8)	V
$V_{(TO)}$	$T_j = 25\text{ (150) °C}$		1,3 (0,9)	1,5 (1,1)	V
r_T	$T_j = 25\text{ (150) °C}$		44 (62)	50 (68)	mΩ
$R_{th(j-s)}$	per diode		1,7		K/W
I_{RRM}	under following conditions		24,6		A
Q_{rr}	$I_{Fnom} = 25\text{ A, } V_R = 600\text{ V}$		3,7		μC
E_{rr}	$V_{GE} = 0\text{ V, } T_j = 150\text{ °C}$		1,6		mJ
	$di_F/dt = 1000\text{ A/μs}$				
Diode - Rectifier					
V_F	$I_{Fnom} = 25\text{ A, } T_j = 25\text{ °C}$		1,1		V
$V_{(TO)}$	$T_j = 150\text{ °C}$		0,8		V
r_T	$T_j = 150\text{ °C}$		13		mΩ
$R_{th(j-s)}$	per diode		1,25		K/W
Temperature Sensor					
R_{ts}	3 %, $T_r = 25\text{ (100) °C}$		1000(1670)		Ω
Mechanical Data					
w			65		g
M_s	Mounting torque	2		2,5	Nm



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

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