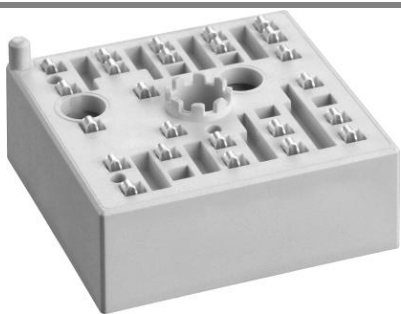




MiniSKiiP® 1

3-phase bridge rectifier +
brake chopper + 3-phase
bridge inverter
SKiiP 13NAB066V1

Target Data

Features

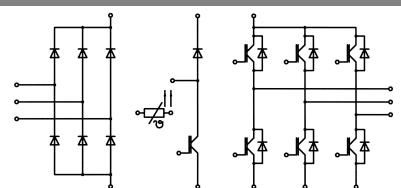
- Trench IGBTs
- Robust and soft freewheeling diodes in CAL technology
- Highly reliable spring contacts for electrical connections
- UL recognised file no. E63532

Typical Applications

- Inverter up to 5,6 kVA
- Typical motor power 3,0 kW

Remarks

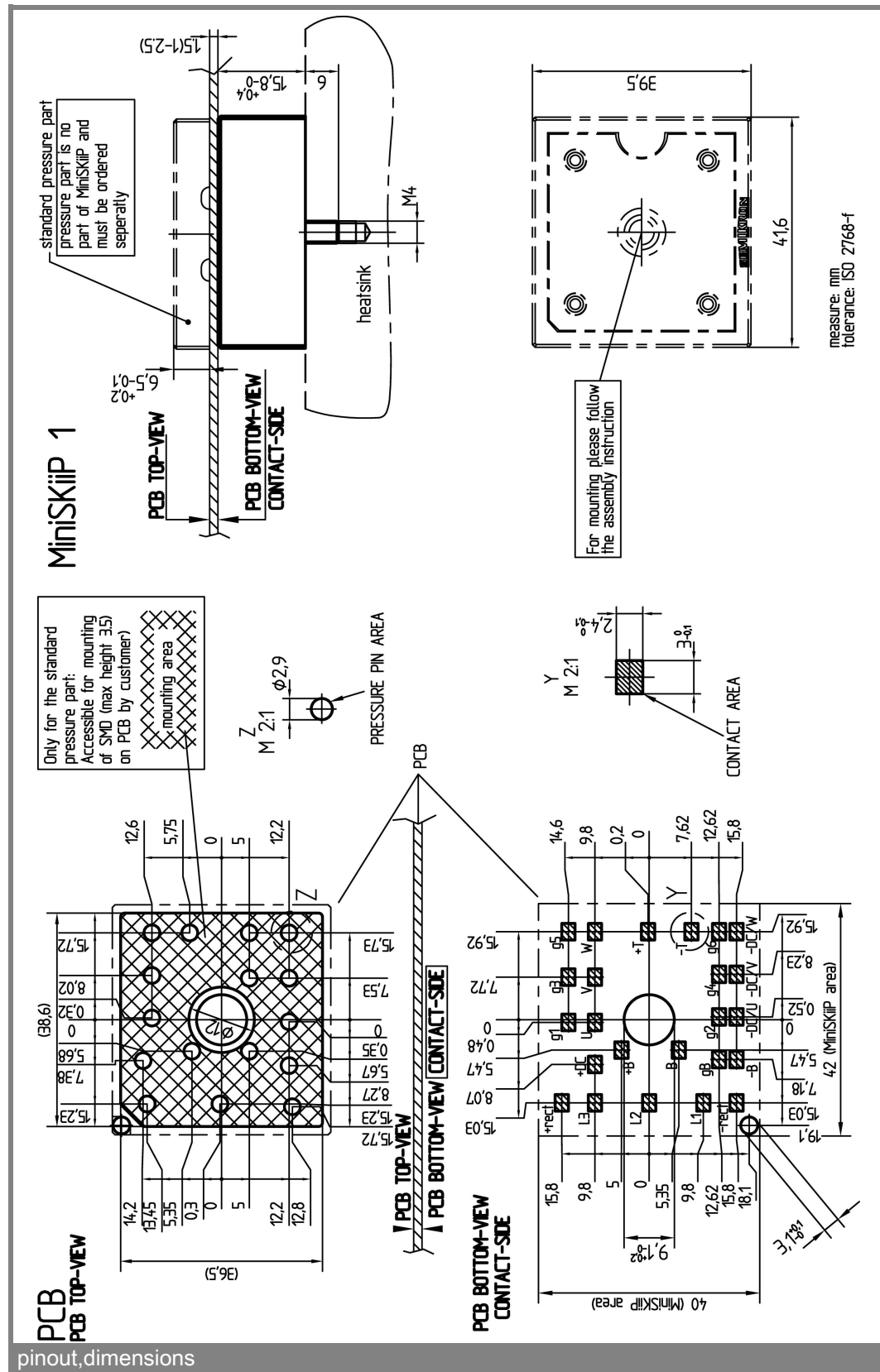
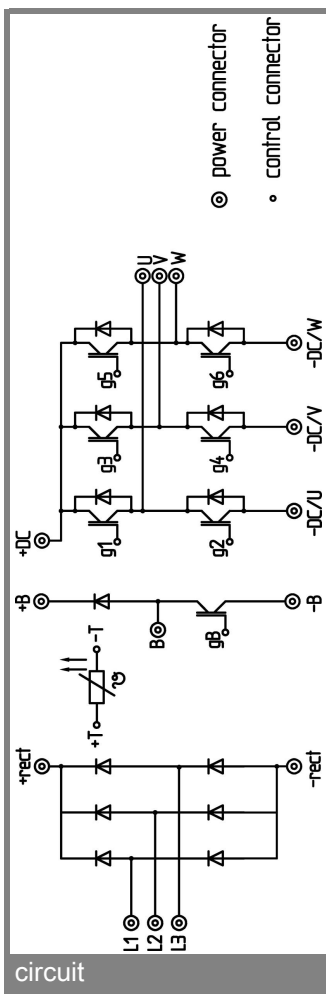
- Case temperature limited to $T_C = 125\text{ °C}$ max.



NAB

Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT - Inverter, Chopper			
V_{CES}	$T_s = 25\text{ (70) °C}$ $T_s = 25\text{ (70) °C}, t_p \leq 1\text{ ms}$	600	V
I_C			A
I_{CRM}			A
V_{GES}		± 20	V
T_j		- 40 ... + 175	°C
Diode - Inverter, 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 ... + 175	°C
Diode - Rectifier			
V_{RRM}	$T_s = 70\text{ °C}$ $t_p = 10\text{ ms}, \sin 180\text{ °}, T_j = 25\text{ °C}$ $t_p = 10\text{ ms}, \sin 180\text{ °}, T_j = 25\text{ °C}$	800	V
I_F		35	A
I_{FSM}		220	A
i^2t		240	A ² s
T_j		- 40 ... + 150	°C
I_{tRMS}	per power terminal (20 A / spring)	20	A
T_{stg}	$T_{op} \leq T_{stg}$	- 40 ... + 125	°C
V_{isol}	AC, 1 min.	2500	V

Characteristics		T _s = 25 °C, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT - Inverter, Chopper					
V _{CEsat}	I _C = 15 A, T _j = 25 (125) °C		1,4 (1,65)	1,9 (2,05)	V
V _{GE(th)}	V _{GE} = V _{CE} , I _C = 0,5 mA		5,8		V
V _{CE(TO)}	T _j = 25 (125) °C		0,9 (0,85)	1 (0,9)	V
r _T	T _j = 25 (125) °C		37 (53)	60 (77)	mΩ
C _{ies}	V _{CE} = 25 V, V _{GE} = 0 V, f = 1 MHz		-		nF
C _{oes}	V _{CE} = 25 V, V _{GE} = 0 V, f = 1 MHz		-		nF
C _{res}	V _{CE} = 25 V, V _{GE} = 0 V, f = 1 MHz		-		nF
R _{th(j-s)}	per IGBT		1,4		K/W
t _{d(on)}	under following conditions		-		ns
t _r	V _{CC} = 300 V, V _{GE} = ± 15 V		-		ns
t _{d(off)}	I _C = 15 A, T _j = 125 °C		-		ns
t _f	R _{Gon} = R _{Goff} = - Ω		-		ns
E _{on}	inductive load		0,38		mJ
E _{off}			0,68		mJ
Diode - Inverter, Chopper					
V _F = V _{EC}	I _F = 15 A, T _j = 25 (125) °C		1,4	1,6	V
V _(TO)	T _j = 25 (125) °C		0,95	1	V
r _T	T _j = 25 (125) °C		30	40	mΩ
R _{th(j-s)}	per diode		2,2		K/W
I _{RRM}	under following conditions		-		A
Q _{rr}	I _F = 15 A, V _R = 300 V		-		μC
E _{rr}	V _{GE} = 0 V, T _j = 125 °C di _F /dt = - A/μs				mJ
Diode - Rectifier					
V _F	I _F = 15 A, T _j = 25 °C		1,1		V
V _(TO)	T _j = 150 °C		0,8		V
r _T	T _j = 150 °C		20		mΩ
R _{th(j-s)}	per diode		1,5		K/W
Temperature Sensor					
R _{ts}	3 %, T _r = 25 (100) °C		1000(1670)		Ω
Mechanical Data					
w			35		g
M _s	Mounting torque	2		2,5	Nm



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

This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.