

SKiiP 03AC066V1



MiniSKiiP[®] 1

3-phase bridge inverter

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Target Data

Features

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

Typical Applications

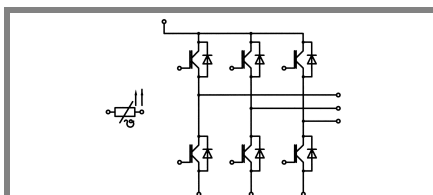
- Inverter up to 6,3 kVA
- Typical motor power 4,0 kW

Remarks

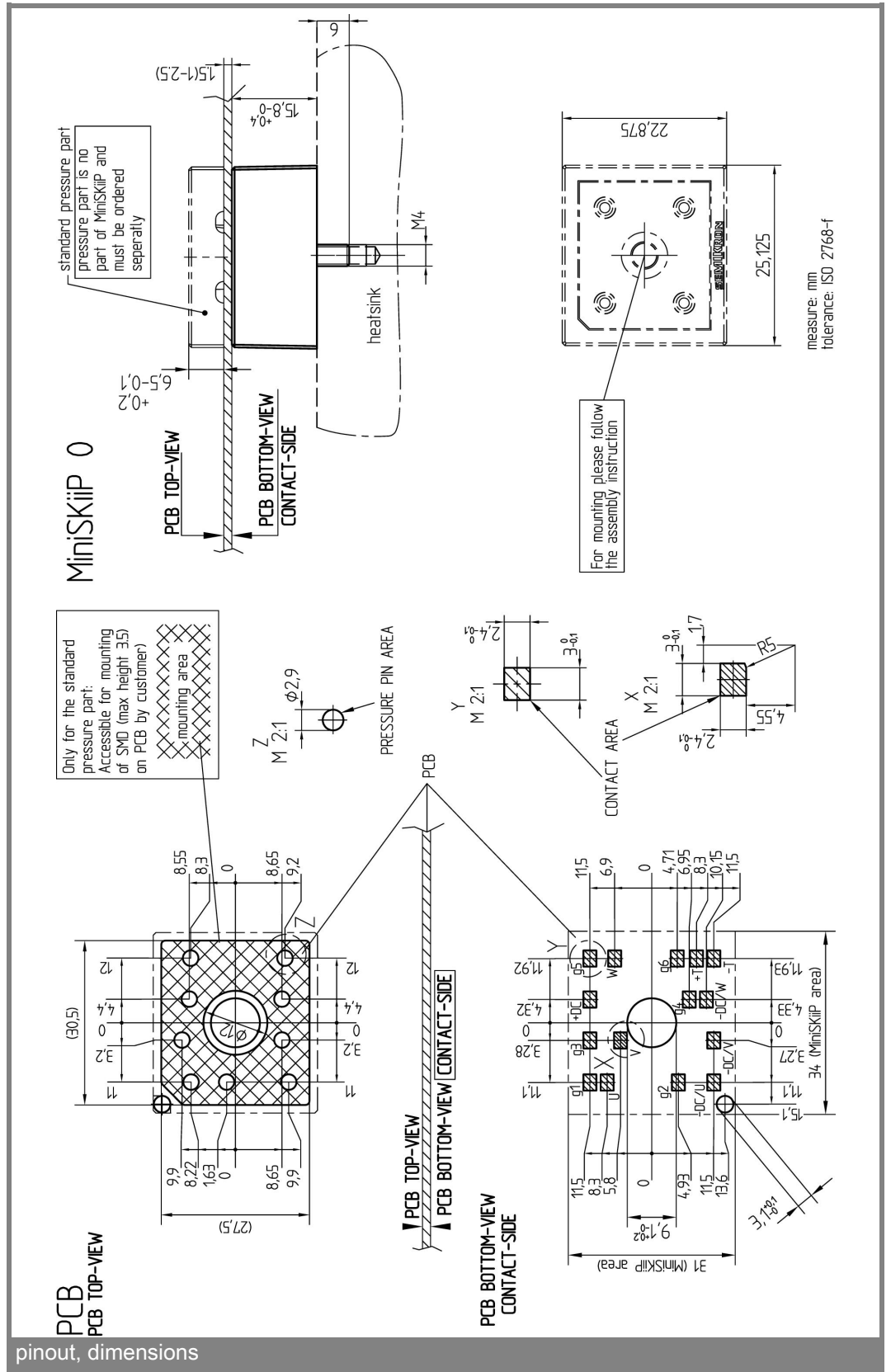
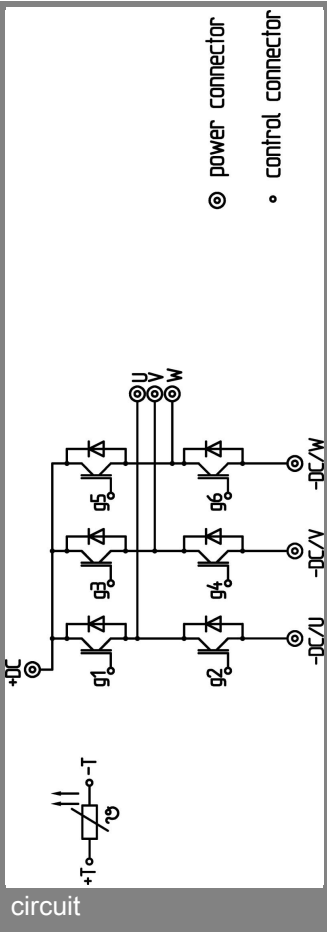
- Case temperature limited to $T_C = 125\text{ °C}$ max.

Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT - Inverter			
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}		± 20	V
T_j		- 40 ... + 175	°C
Diode - Inverter			
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
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					
V_{CEsat}	$I_C = 15\text{ A}$, $T_j = 25\text{ (125) °C}$		1,45 (1,7)	1,9 (2,1)	V
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 0,5\text{ mA}$		5,8		V
$V_{CE(TO)}$	$T_j = 25\text{ (150) °C}$		0,9 (0,85)	1 (0,9)	V
r_T	$T_j = 25\text{ (150) °C}$		37 (57)	60 (80)	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		1,78		K/W
$t_{d(on)}$	under following conditions		-		ns
t_r	$V_{CC} = 300\text{ V}$, $V_{GE} = \pm 15\text{ V}$		-		ns
$t_{d(off)}$	$I_C = 15\text{ A}$, $T_j = 125\text{ °C}$		-		ns
t_f	$R_{Gon} = R_{Goff} = 30\text{ Ω}$		-		ns
E_{on}	inductive load		0,4		mJ
E_{off}			0,7		mJ
Diode - Inverter					
$V_F = V_{EC}$	$I_F = 15\text{ A}$, $T_j = 25\text{ (125) °C}$		1,4 (1,4)	1,6	V
$V_{(TO)}$	$T_j = 25\text{ (150) °C}$		1,03 (0,85)		V
r_T	$T_j = 25\text{ (150) °C}$		25 (37)		mΩ
$R_{th(j-s)}$	per diode		2,45		K/W
I_{RRM}	under following conditions		-		A
Q_{rr}	$I_F = 15\text{ A}$, $V_R = 300\text{ V}$		-		μC
E_{rr}	$V_{GE} = 0\text{ V}$, $T_j = 125\text{ °C}$ $di_F/dt = 1350\text{ A/μs}$				mJ
Temperature Sensor					
R_{ts}	3 %, $T_r = 25\text{ (100) °C}$		1000(1670)		Ω
Mechanical Data					
m			35		g
M_s	Mounting torque	2		2,5	Nm



AC



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

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