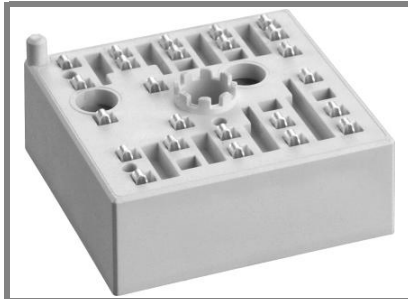


SKiiP 12NAB066V1(old)



MiniSKiiP® 1

3-phase bridge rectifier +
brake chopper + 3-phase
bridge inverter
SKiiP 12NAB066V1

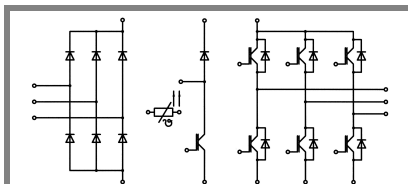
Target Data

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 4,8 kVA
- Typical motor power 2,2 kW



NAB

Absolute Maximum Ratings		$T_s = 25^\circ\text{C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT - Inverter, Chopper			
V_{CES}		600	V
I_C	$T_s = 25 (70)^\circ\text{C}$	15 (12)	A
I_{CRM}	$T_s = 25 (70)^\circ\text{C}$, $t_p \leq 1 \text{ ms}$	30 (24)	A
V_{GES}		± 20	V
T_j		- 40 ... + 150	$^\circ\text{C}$
Diode - Inverter, Chopper			
I_F	$T_s = 25 (70)^\circ\text{C}$	21 (16)	A
I_{FRM}	$T_s = 25 (70)^\circ\text{C}$, $t_p \leq 1 \text{ ms}$	42 (32)	A
T_j		- 40 ... + 150	$^\circ\text{C}$
Diode - Rectifier			
V_{RRM}		800	V
I_F	$T_s = 70^\circ\text{C}$	20	A
I_{FSM}	$t_p = 10 \text{ ms}$, $\sin 180^\circ$, $T_j = 25^\circ\text{C}$	220	A
i^2t	$t_p = 10 \text{ ms}$, $\sin 180^\circ$, $T_j = 25^\circ\text{C}$	240	A^2s
T_j		- 40 ... + 150	$^\circ\text{C}$
I_{RMS}	per power terminal (20 A / spring)	20	A
T_{stg}	$T_{op} \leq T_{stg}$	- 40 ... + 125	$^\circ\text{C}$
V_{isol}	AC, 1 min.	2500	V

Characteristics		$T_s = 25^\circ\text{C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT - Inverter, Chopper					
V_{CEsat}	$I_C = 10 \text{ A}$, $T_j = 25 (125)^\circ\text{C}$		1,75 (2)	2,25 (2,5)	V
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = \text{mA}$				V
$V_{CE(TO)}$	$T_j = 25 (125)^\circ\text{C}$		0,9 (0,8)	1 (0,9)	V
r_T	$T_j = 25 (125)^\circ\text{C}$		85 (120)	125 (160)	$\text{m}\Omega$
C_{ies}	$V_{CE} = 25 \text{ V}$, $V_{GE} = 0 \text{ V}$, $f = 1 \text{ MHz}$		0,61		nF
C_{oes}	$V_{CE} = 25 \text{ V}$, $V_{GE} = 0 \text{ V}$, $f = 1 \text{ MHz}$		0,19		nF
C_{res}	$V_{CE} = 25 \text{ V}$, $V_{GE} = 0 \text{ V}$, $f = 1 \text{ MHz}$		0,05		nF
$R_{th(j-s)}$	per IGBT		2,4		K/W
$t_{d(on)}$	under following conditions		13		ns
t_r	$V_{CC} = 300 \text{ V}$, $V_{GE} = \pm 15 \text{ V}$		17		ns
$t_{d(off)}$	$I_C = 10 \text{ A}$, $T_j = 125^\circ\text{C}$		150		ns
t_f	$R_{Gon} = R_{Goff} = 23 \Omega$		45		ns
E_{on}	inductive load		0,32		mJ
E_{off}			0,33		mJ
Diode - Inverter, Chopper					
$V_F = V_{EC}$	$I_F = 10 \text{ A}$, $T_j = 25 (125)^\circ\text{C}$		1,4 (1,4)	1,7 (1,7)	V
$V_{(TO)}$	$T_j = 25 (125)^\circ\text{C}$		1 (0,9)	1,1 (1)	V
r_T	$T_j = 25 (125)^\circ\text{C}$		45 (50)	60 (70)	$\text{m}\Omega$
$R_{th(j-s)}$	per diode		2,4		K/W
I_{RRM}	under following conditions		11		A
Q_{rr}	$I_F = 10 \text{ A}$, $V_R = 300 \text{ V}$		1,1		μC
E_{rr}	$V_{GE} = 0 \text{ V}$, $T_j = 125^\circ\text{C}$		0,18		mJ
	$di_F/dt = 1050 \text{ A}/\mu\text{s}$				
Diode Rectifier					
V_F	$I_F = 15 \text{ A}$, $T_j = 25^\circ\text{C}$		1,15		V
$V_{(TO)}$	$T_j = 150^\circ\text{C}$		0,8		V
r_T	$T_j = 150^\circ\text{C}$		20		$\text{m}\Omega$
$R_{th(j-s)}$	per diode		1,8		K/W
Temperature Sensor					
R_{ts}	3 %, $T_r = 25 (100)^\circ\text{C}$		1000(1670)		Ω
Mechanical Data					
w			35		g
M_s	Mounting torque	2		2,5	Nm

SKiiP 12NAB066V1(old)

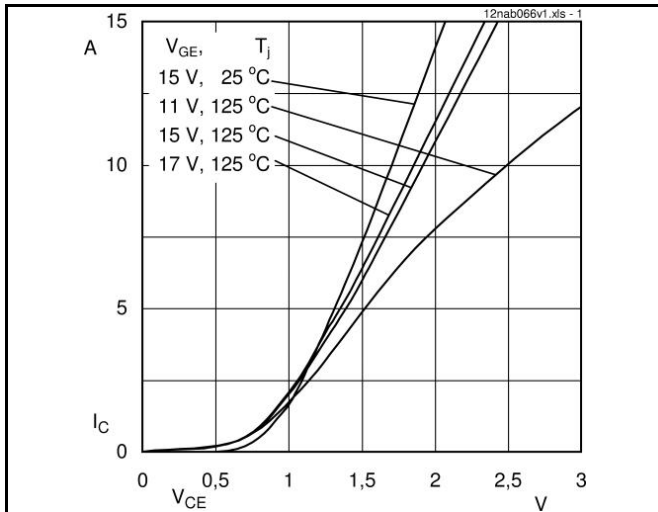


Fig. 1 Typ. output characteristic

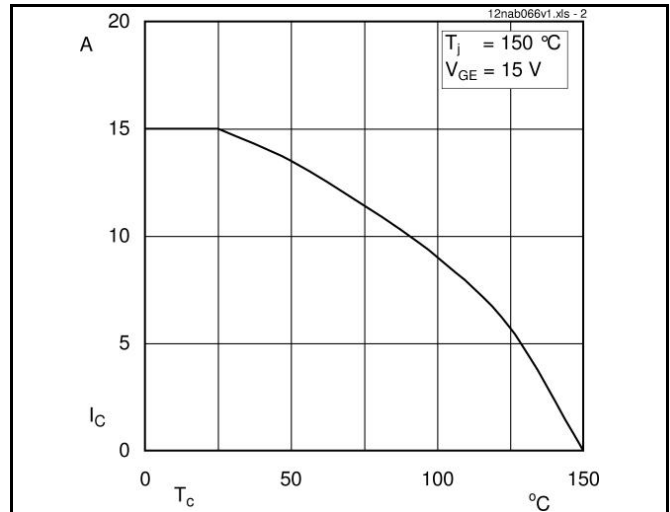


Fig. 2 Typ. rated current vs. temperature

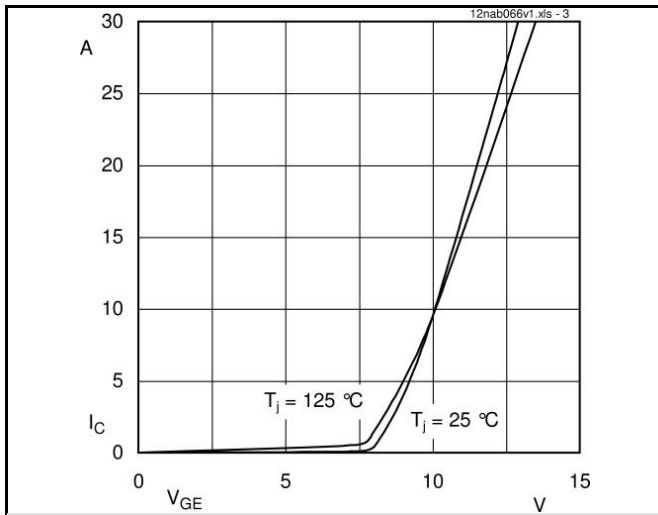


Fig. 3 Typ. transfer characteristic

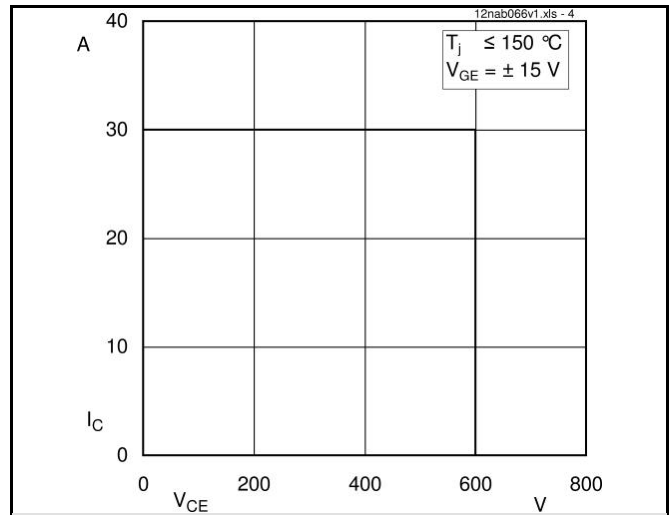
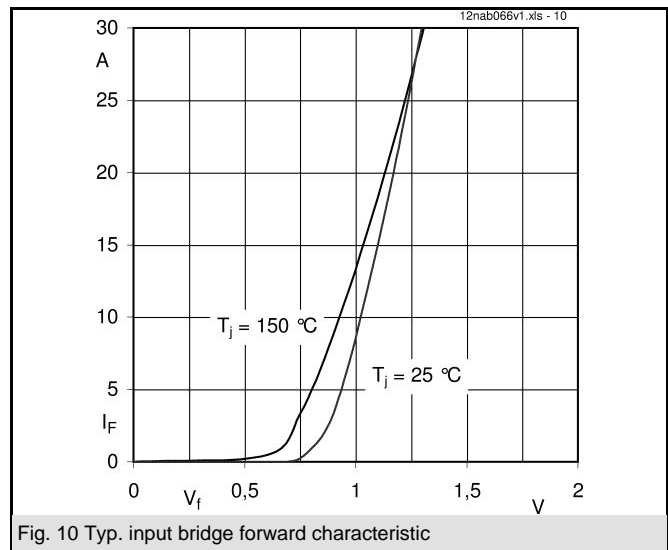
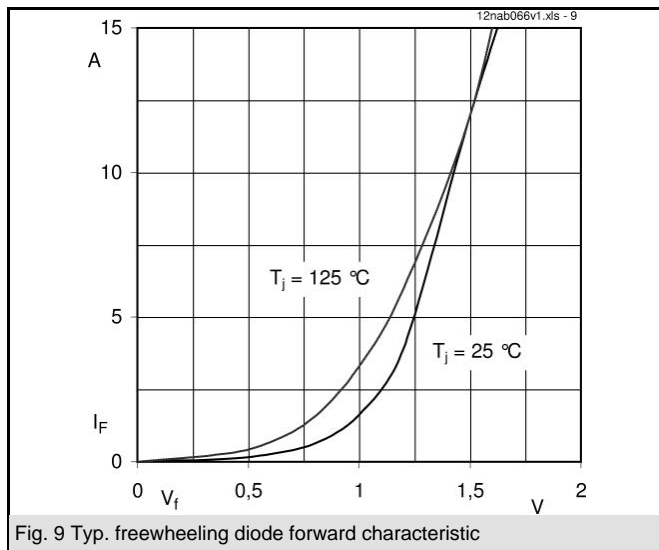
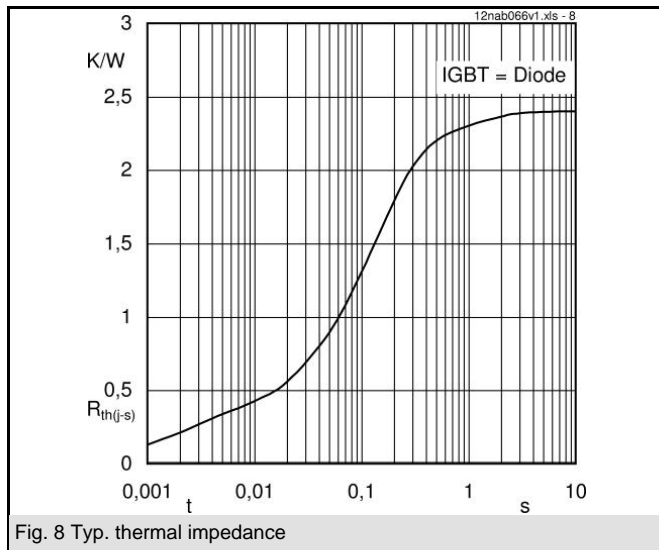
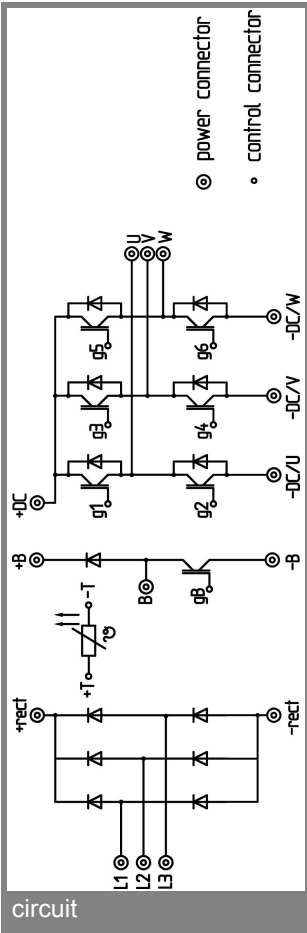


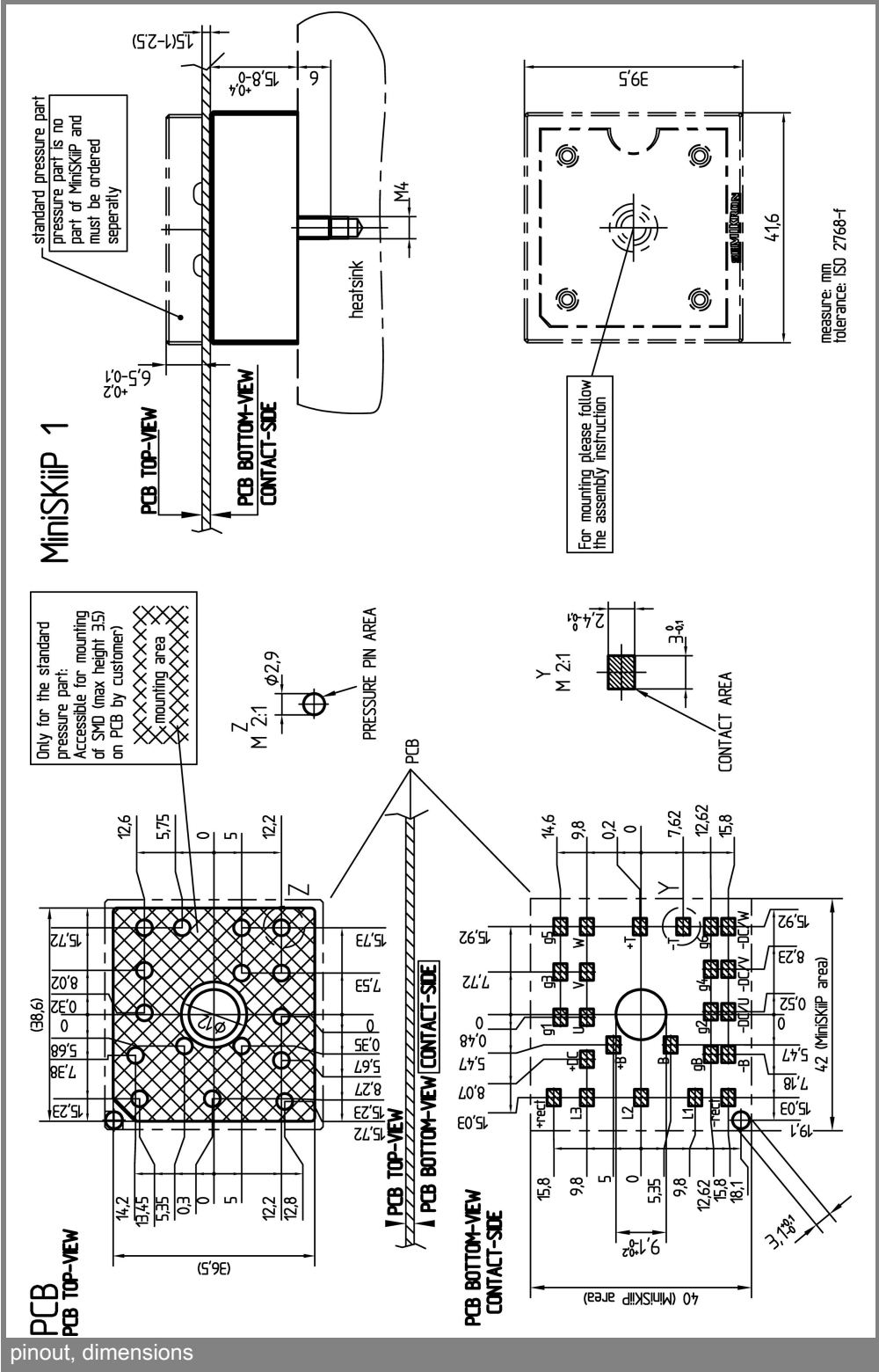
Fig. 4 Reverse bias safe operating area



SKiiP 12NAB066V1(old)



circuit



pinout, dimensions

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.

Downloaded from Elcodis.com electronic components distributor