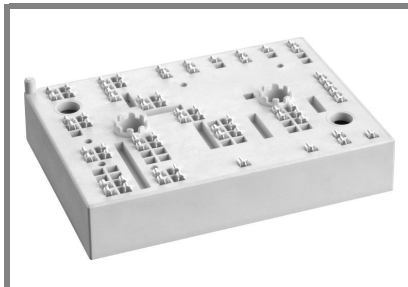


SKiIP 35NAB12T4V1



MiniSKiIP® 3

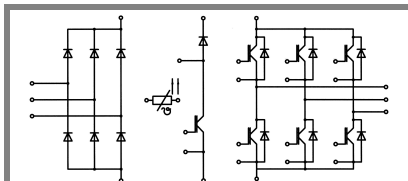
3-phase bridge rectifier +
brake chopper + 3-phase
bridge inverter
SKiIP 35NAB12T4V1

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

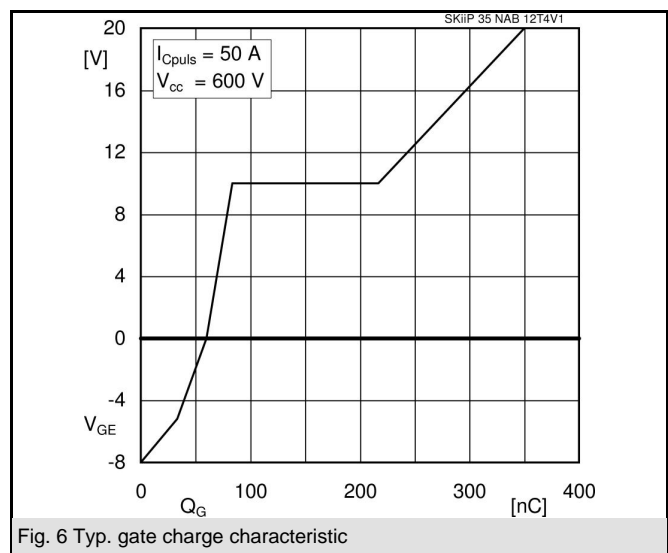
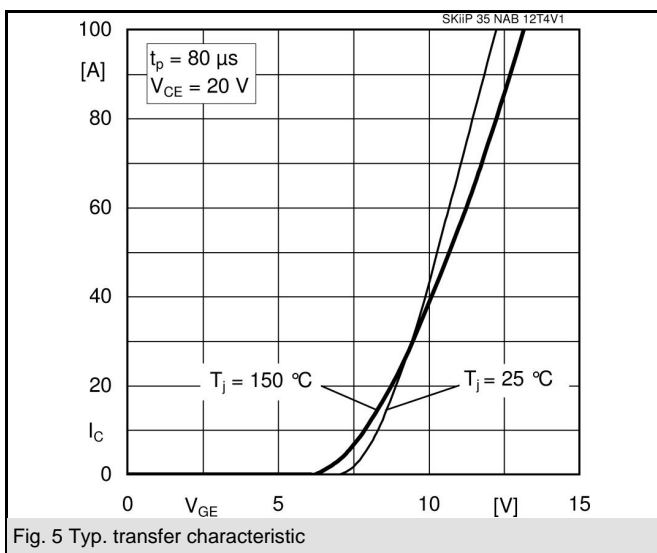
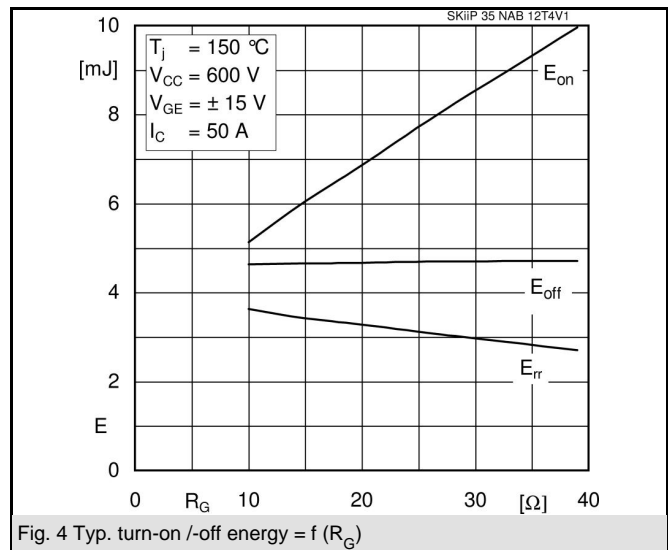
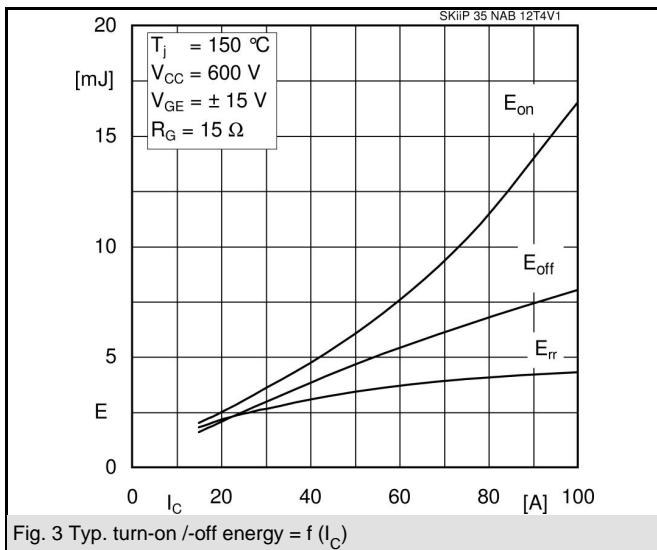
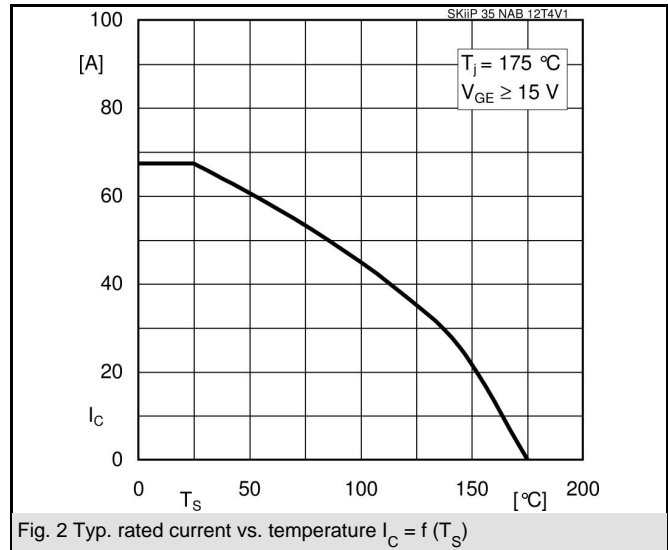
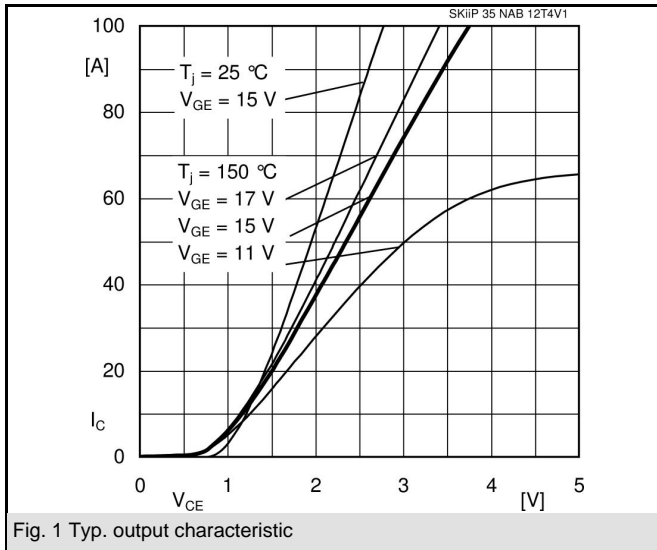
- V_{CEsat} , V_F = chip level value
- product reliability results valid for $T_j \leq 150$

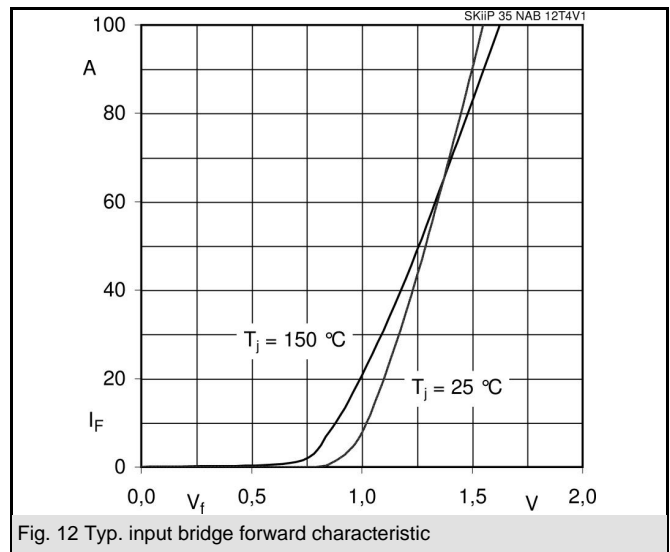
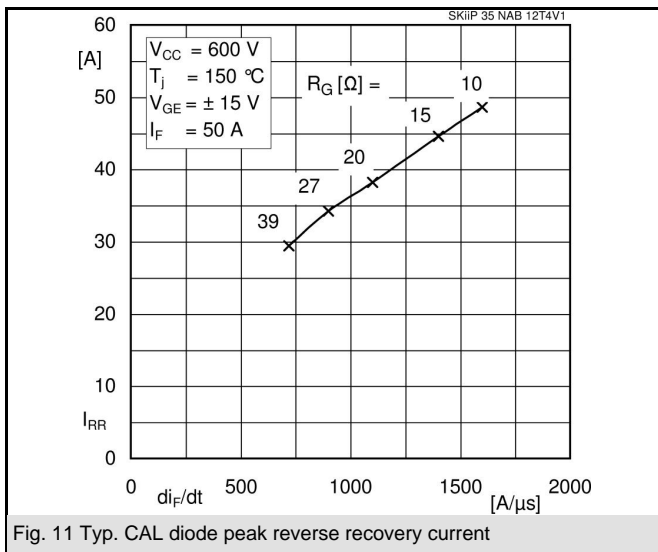
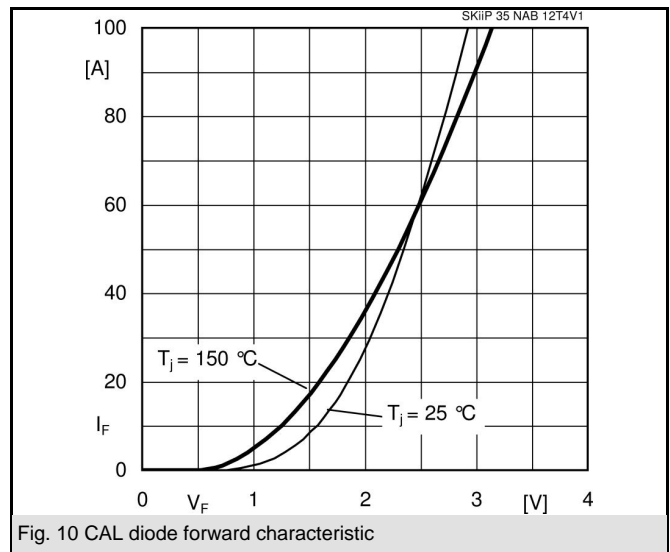
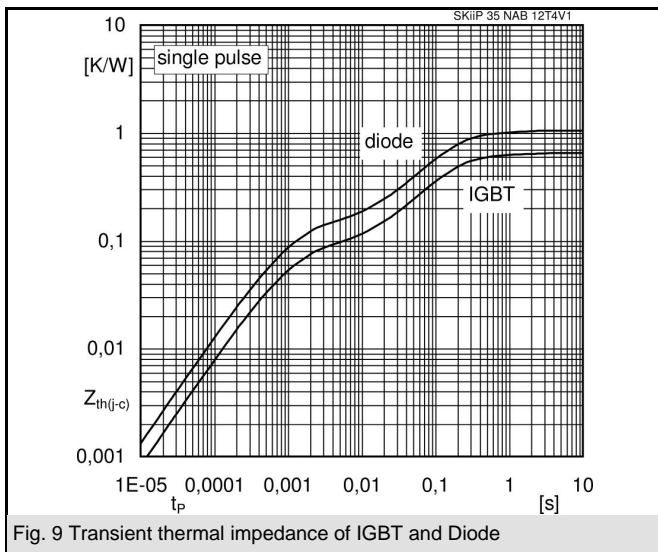
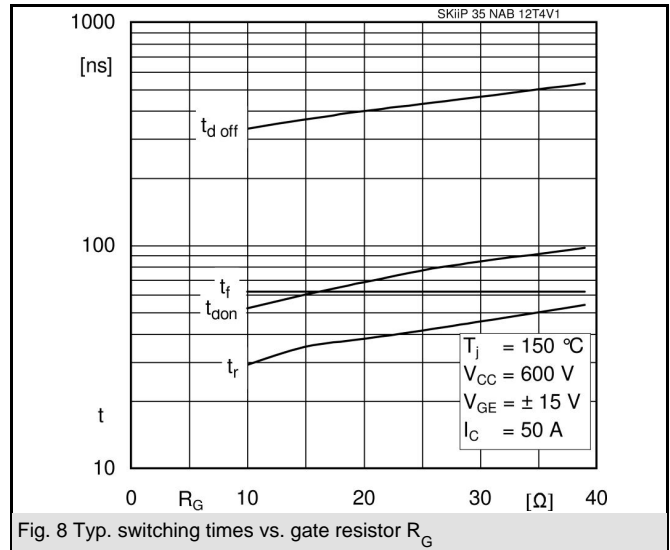
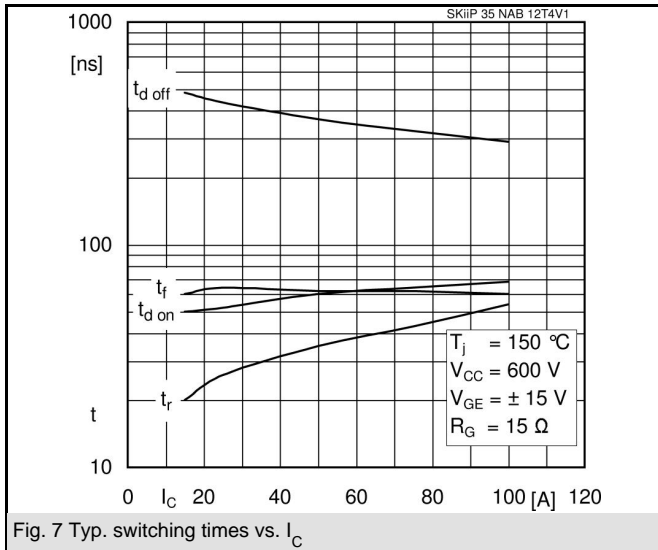


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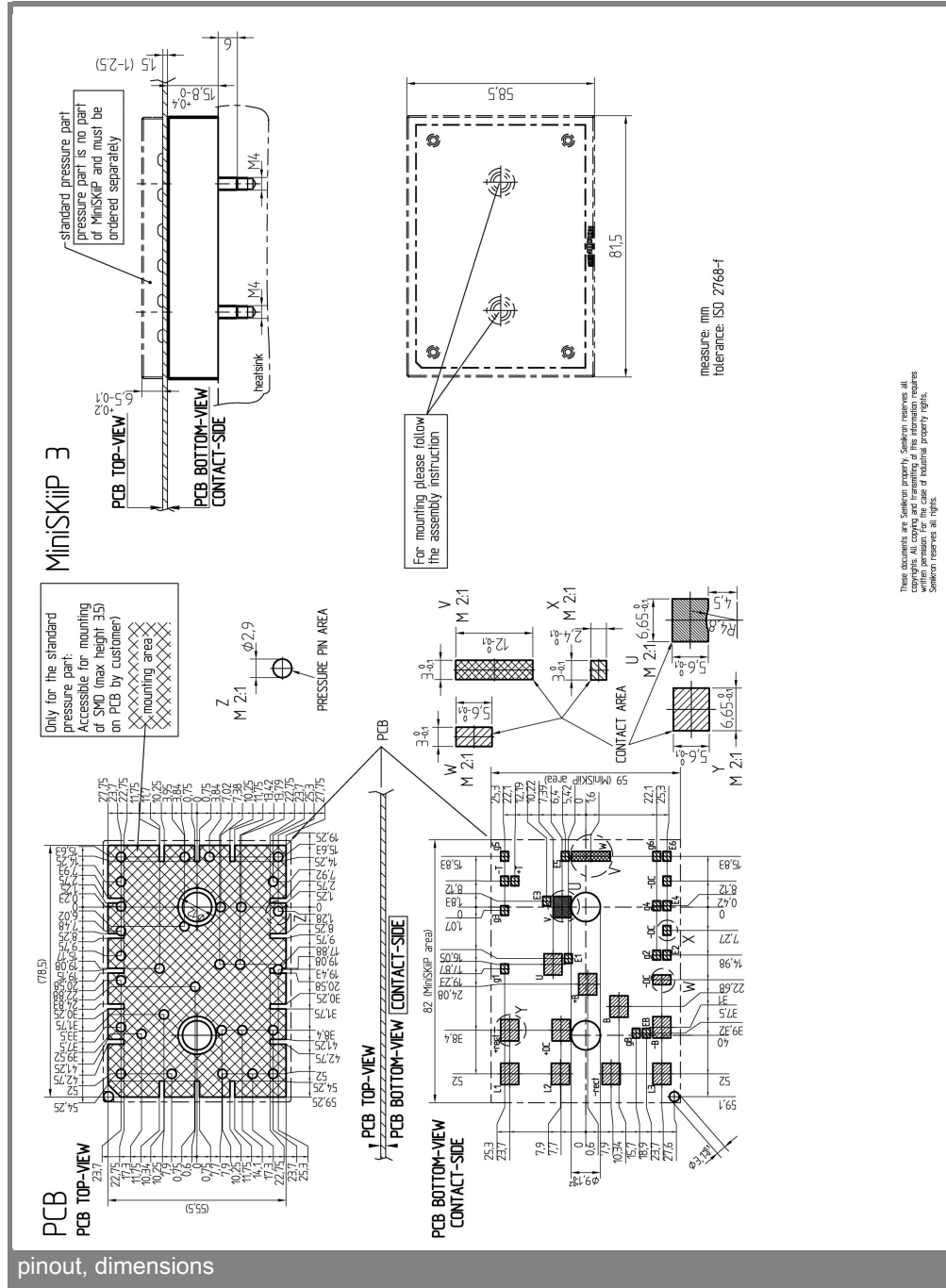
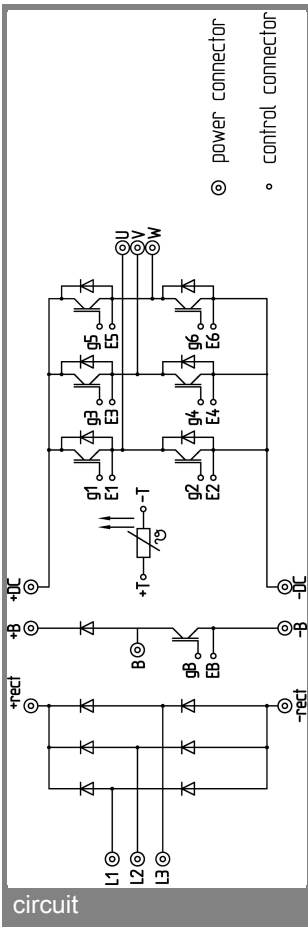
Absolute Maximum Ratings		$T_s = 25^\circ\text{C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT - Inverter, Chopper			
V_{CES}	$T_s = 25 (70)^\circ\text{C}$	1200	V
I_C		67 (52)	A
I_{CRM}		150	A
V_{GES}		± 20	V
T_j		- 40 ... + 175	$^\circ\text{C}$
Diode - Inverter, Chopper			
I_F	$T_s = 25 (70)^\circ\text{C}$	60 (48)	A
I_{FRM}		150	A
T_j		- 40 ... + 175	$^\circ\text{C}$
Diode - Rectifier			
V_{RRM}	$T_s = 70^\circ\text{C}$	1600	V
I_F		61	A
I_{FSM}		700	A
i^2t		2400	A^2s
T_j		- 40 ... + 150	$^\circ\text{C}$
Module			
I_{RMS}	per power terminal (20 A / spring)	80	A
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}	$I_{Cnom} = 50\text{ A}, T_j = 25 (150)^\circ\text{C}$		1,85 (2,25)	2,05 (2,45)	V
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = 2\text{ mA}$	5	5,8	6,5	V
$V_{CE(TO)}$	$T_j = 25 (150)^\circ\text{C}$		0,8 (0,7)	0,9 (0,8)	V
r_T	$T_j = 25 (150)^\circ\text{C}$		21 (31)	23 (33)	m Ω
C_{ies}	$V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1\text{ MHz}$		2,77		nF
C_{oes}	$V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1\text{ MHz}$		0,21		nF
C_{res}	$V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1\text{ MHz}$		0,16		nF
$R_{th(j-s)}$	per IGBT		0,71		K/W
$t_{d(on)}$	under following conditions $V_{CC} = 600\text{ V}, V_{GE} = \pm 15\text{ V}$		60		ns
t_r			35		ns
$t_{d(off)}$	$I_{Cnom} = 50\text{ A}, T_j = 150^\circ\text{C}$ $R_{Gon} = R_{Goff} = 15\ \Omega$		370		ns
t_f			60		ns
E_{on}	inductive load		6		mJ
E_{off}			4,7		mJ
Diode - Inverter, Chopper					
$V_F = V_{EC}$	$I_{Fnom} = 50\text{ A}, T_j = 25 (150)^\circ\text{C}$		2,25 (2,2)	2,55 (2,5)	V
$V_{(TO)}$	$T_j = 25 (150)^\circ\text{C}$		1,3 (0,9)	1,5 (1,1)	V
r_T	$T_j = 25 (150)^\circ\text{C}$		19 (26)	21 (28)	m Ω
$R_{th(j-s)}$	per diode		0,95		K/W
I_{RRM}	under following conditions		45		A
Q_{rr}	$I_{Fnom} = 50\text{ A}, V_R = 600\text{ V}$		8,6		μC
E_{rr}	$V_{GE} = 0\text{ V}, T_j = 150^\circ\text{C}$ $di_F/dt = 1400\text{ A}/\mu\text{s}$		3,4		mJ
Diode - Rectifier					
V_F	$I_{Fnom} = 35\text{ A}, T_j = 25^\circ\text{C}$		1,1		V
$V_{(TO)}$	$T_j = 150^\circ\text{C}$		0,8		V
r_T	$T_j = 150^\circ\text{C}$		11		m Ω
$R_{th(j-s)}$	per diode		0,9		K/W
Temperature Sensor					
R_{ts}	3 %, $T_r = 25 (100)^\circ\text{C}$		1000(1670)		Ω
Mechanical Data					
w			95		g
M_s	Mounting torque	2		2,5	Nm





SKiiP 35NAB12T4V1



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