

MiniSKiiP® 2

3-phase bridge rectifier +
brake chopper + 3-phase
bridge inverter
SKiiP 23NAB126V10

Preliminary Data

Features

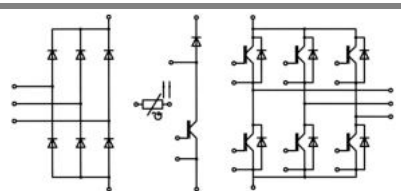
- Fast Trench IGBTs
- Robust and soft freewheeling diodes in CAL technology
- Highly reliable spring contacts for electrical connections
- UL recognised file no. E63532

Typical Applications*

- Inverter up to 14 kVA
- Typical motor power 7,5 kW

Remarks

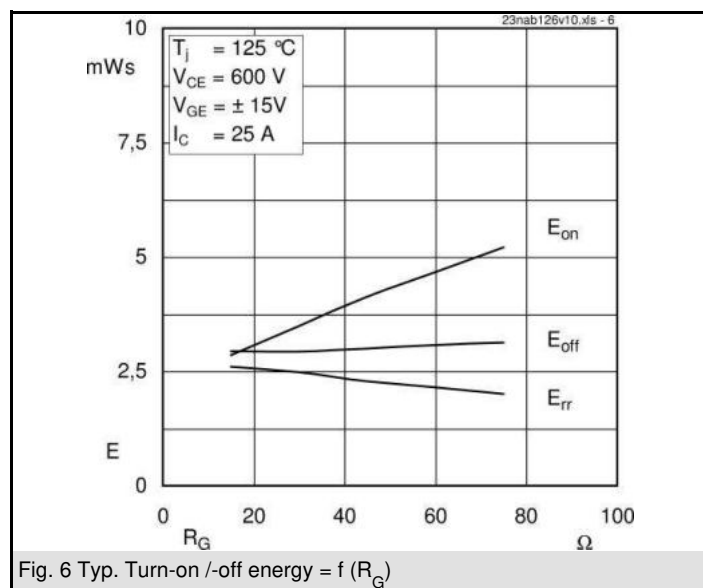
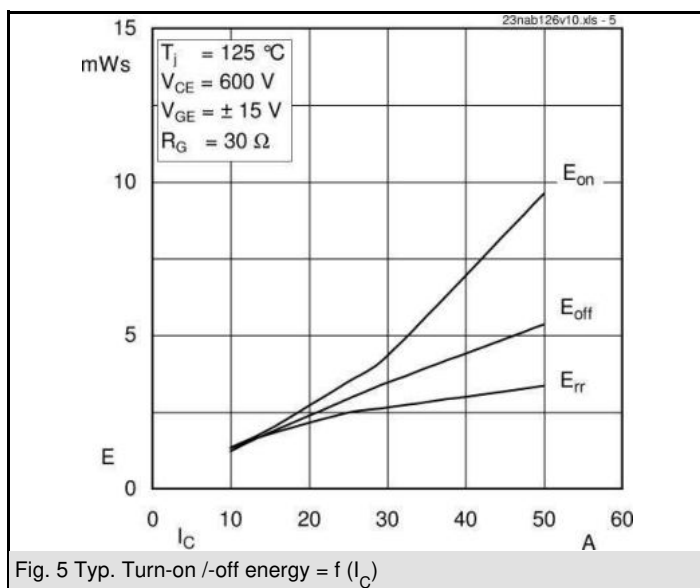
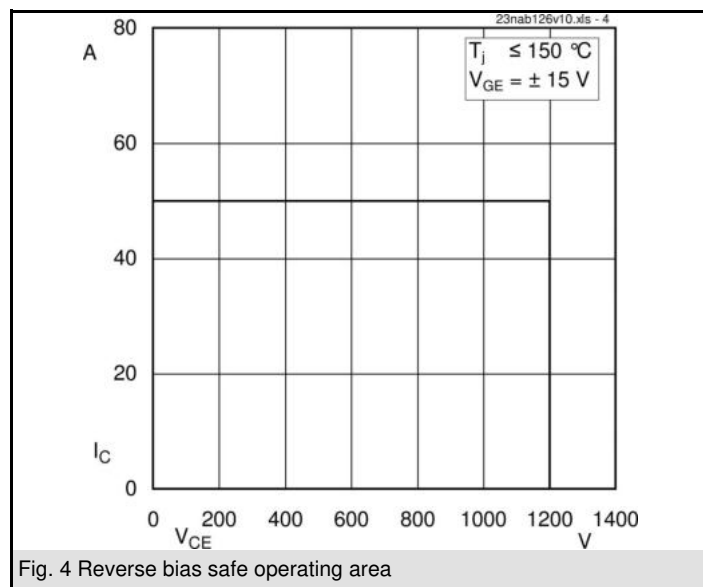
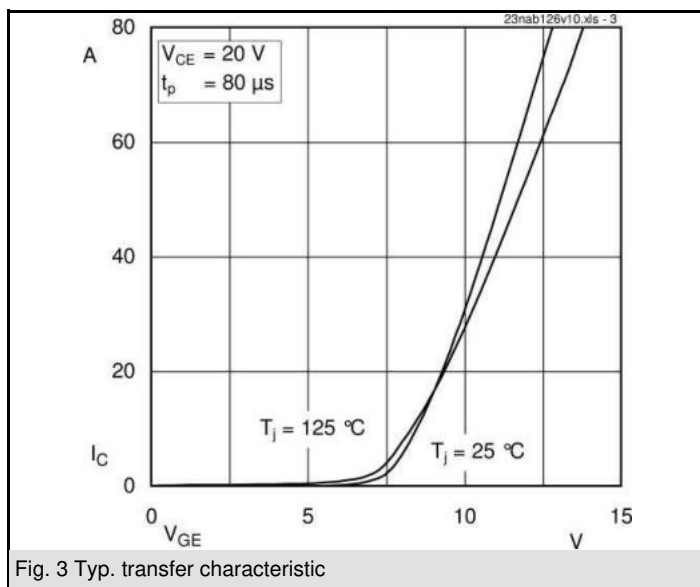
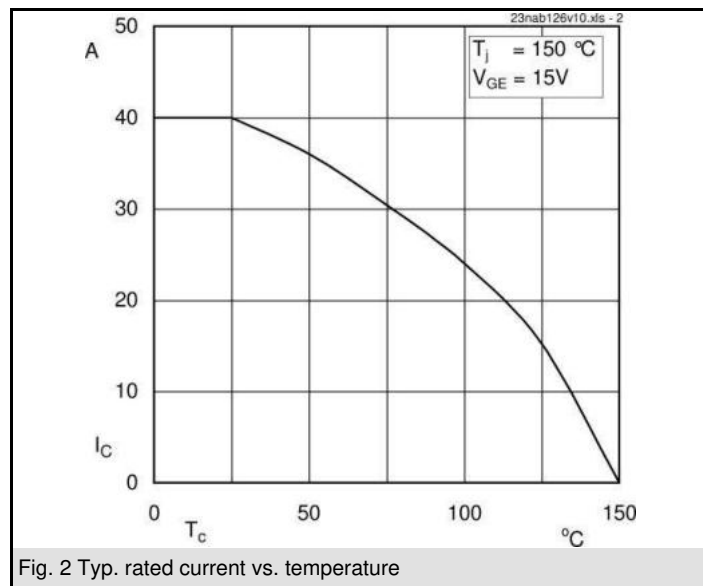
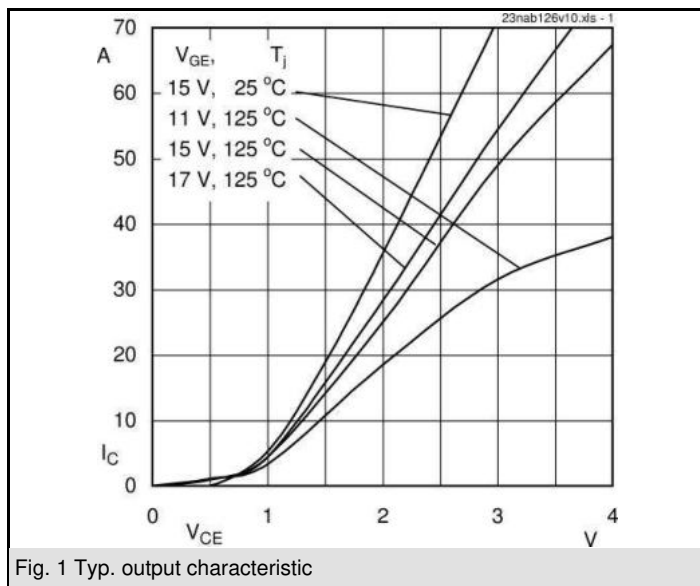
- V_{CEsat} , V_F = chip level value

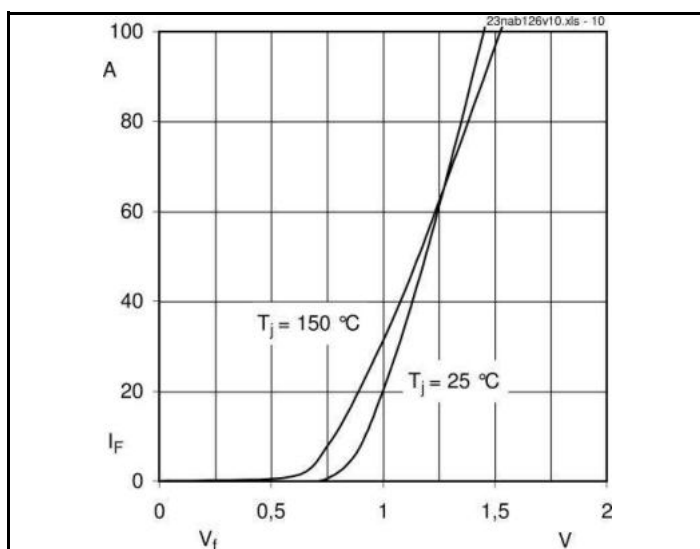
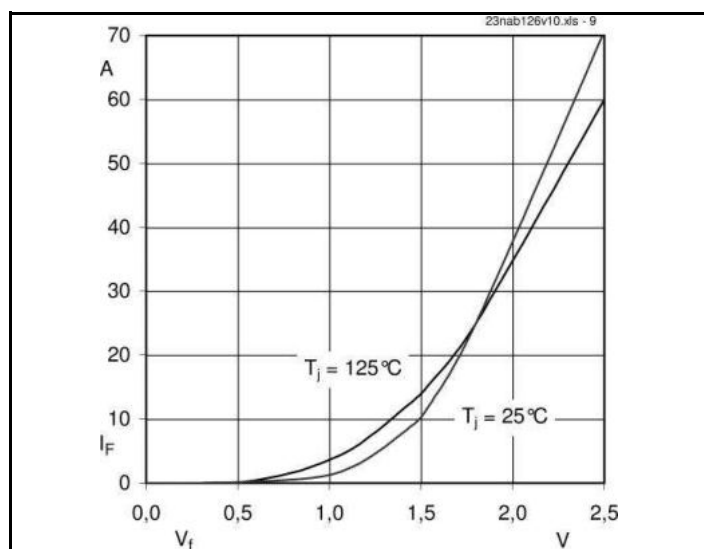
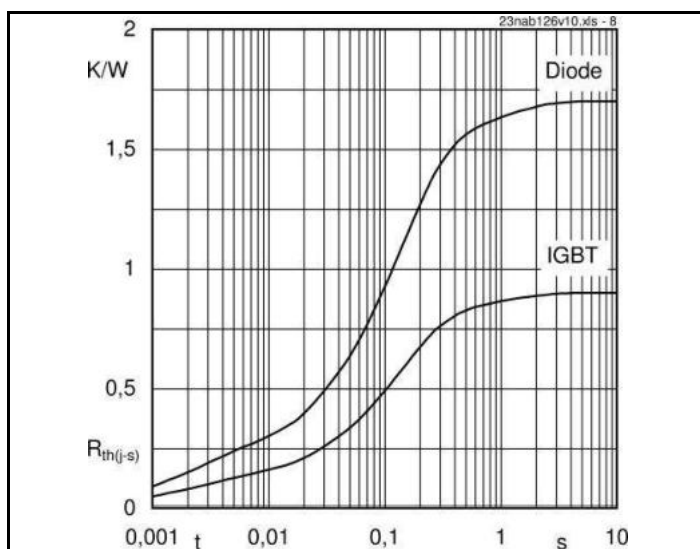
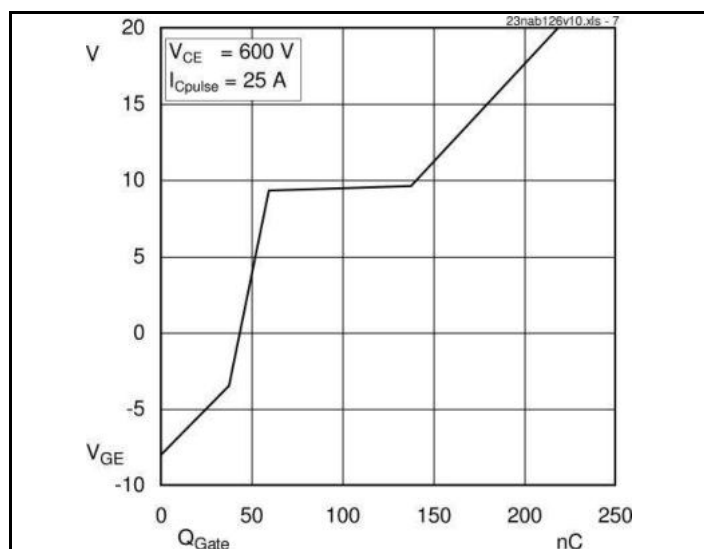


NAB

Absolute Maximum Ratings		T _s = 25 °C, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT - Inverter, Chopper			
V _{CES}	T _s = 25 (70) °C	1200	V
I _C		41 (31)	A
I _{CRM}		50	A
V _{GES}		± 20	V
T _j		- 40 ... + 150	°C
Diode - Inverter, Chopper			
I _F	T _s = 25 (70) °C	30 (22)	A
I _{FRM}		50	A
T _j		- 40 ... + 150	°C
Diode - Rectifier			
V _{RRM}	T _s = 70 °C	1600	V
I _F		61	A
I _{FSM}		700	A
i ² t		2400	A ² s
T _j		- 40 ... + 150	°C
Module			
I _{tRMS}	per power terminal (20 A / spring)	40	A
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 _{Cnom} = 25 A, T _j = 25 (125) °C	5	1,7 (2)	2,1 (2,4)	V
V _{GE(th)}	V _{GE} = V _{CE} , I _C = 1 mA		5,8	6,5	V
V _{CE(TO)}	T _j = 25 (125) °C		1 (0,9)	1,2 (1,1)	V
r _T	T _j = 25 (125) °C		28 (44)	36 (52)	mΩ
C _{ies}	V _{CE} = 25 V, V _{GE} = 0 V, f = 1 MHz		1,8		nF
C _{oes}	V _{CE} = 25 V, V _{GE} = 0 V, f = 1 MHz		0,3		nF
C _{res}	V _{CE} = 25 V, V _{GE} = 0 V, f = 1 MHz		0,2		nF
R _{th(j-s)}	per IGBT		0,9		K/W
t _{d(on)}	under following conditions V _{CC} = 600 V, V _{GE} = ± 15 V I _{Cnom} = 25 A, T _j = 125 °C R _{Gon} = R _{Goff} = 30 Ω inductive load		85		ns
t _r			30		ns
t _{d(off)}			465		ns
t _f			100		ns
E _{on}			3,5		mJ
E _{off}			3		mJ
Diode - Inverter, Chopper					
V _F = V _{EC}	I _{Fnom} = 25 A, T _j = 25 (125) °C		1,8 (1,8)	2,1 (2,2)	V
V _(TO)	T _j = 25 (125) °C		1 (0,8)	1,1 (0,9)	V
r _T	T _j = 25 (125) °C		32 (40)	40 (52)	mΩ
R _{th(j-s)}	per diode		1,7		K/W
I _{RRM}	under following conditions I _{Fnom} = 25 A, V _R = 600 V V _{GE} = 0 V, T _j = 125 °C di _F /dt = 1140 A/μs		33		A
Q _{rr}			5,7		μC
E _{rr}			2,5		mJ
Diode - Rectifier					
V _F	I _{Fnom} = 35 A, T _j = 25 °C		1,1		V
V _(TO)	T _j = 150 °C		0,8		V
r _T	T _j = 150 °C		11		mΩ
R _{th(j-s)}	per diode		0,9		K/W
Temperature Sensor					
R _{ts}	3 %, T _r = 25 (100) °C		1000(1670)		Ω
Mechanical Data					
w			65		g
M _s	Mounting torque	2		2,5	Nm







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