

MiniSKiiP[®] 1

3-phase bridge rectifier + brake chopper + 3-phase bridge inverter SKIIP 11NAB126V1

Features

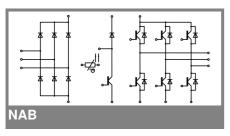
- Fast Trench IGBTs
- Robust and soft freewheeling diodes in CAL technology
- Highly reliable spring contacts for electrical connections
- UL recognised file no. E63532

Typical Applications*

- Inverter up to 8 kVA
- Typical motor power 4 kW

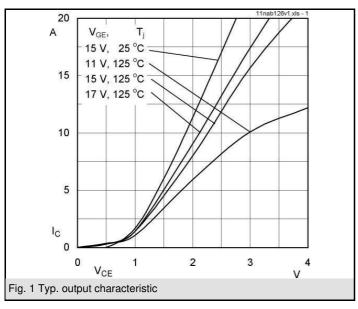
Remarks

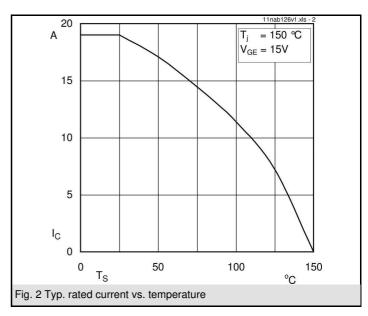
• V_{CEsat} , V_F = chip level value

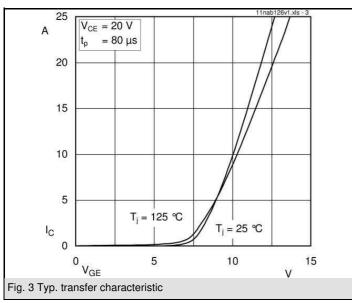


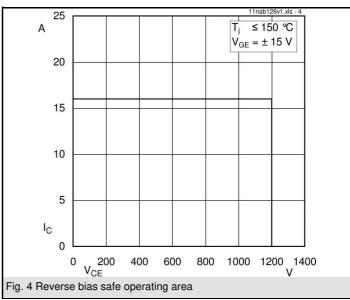
Absolute Maximum Ratings T _s = 25 °C, unless otherwise specified								
Symbol	Conditions	Values	Units					
IGBT - Inverter, Chopper								
V_{CES}		1200	V					
I _C	T _s = 25 (70) °C	16 (15)	Α					
I _{CRM}		16	Α					
V_{GES}		± 20	V					
T _j		- 40 + 150	°C					
Diode - Inverter, Chopper								
I _F	$T_s = 25 (70) ^{\circ}C$	14 (11)	Α					
I _{FRM}		16	Α					
T_j		- 40 + 150	°C					
Diode - R	ectifier	•	•					
V_{RRM}		1600	V					
I _F	T _s = 70 °C	35	Α					
I _{FSM}	t _p = 10 ms, sin 180 °, T _i = 25 °C	220	Α					
i²t	$t_{\rm D}^{\rm r}$ = 10 ms, sin 180 °, $T_{\rm i}$ = 25 °C	240	A²s					
T_j	,	- 40 + 150	°C					
Module	•	·						
I _{tRMS}	per power terminal (20 A / spring)	20	Α					
T _{stg}		- 40 + 125	°C					
V _{isol}	AC, 1 min.	2500	V					

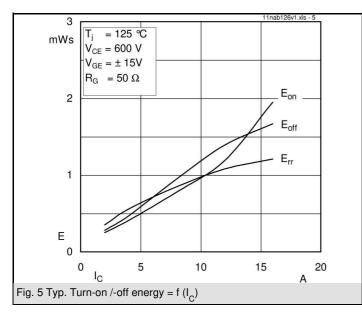
Characteristics		$T_s = 25 ^{\circ}C$	T _s = 25 °C, unless otherwise specified				
Symbol	Conditions	min.	typ.	max.	Units		
IGBT - Inverter, Chopper							
V_{CEsat}	I _{Cnom} = 8 A, T _j = 25 (125) °C		1,7 (2)	2,1 (2,4)	V		
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 0.3 \text{ mA}$	5	5,8	6,5	V		
V _{CE(TO)}	$T_j = 25 (125) ^{\circ}C$		1 (0,9)	1,2 (1,1)	V		
r _T	$T_j = 25 (125) ^{\circ}C$		87 (138)	113 (162)	mΩ		
C _{ies}	$V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, f = 1 \text{ MHz}$		0,7		nF		
C _{oes}	$V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, f = 1 \text{ MHz}$		0,1		nF		
C _{res}	$V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, f = 1 \text{ MHz}$		0,1		nF		
$R_{th(j-s)}$	per IGBT		1,5		K/W		
$t_{d(on)}$	under following conditions		35		ns		
t _r	$V_{CC} = 600 \text{ V}, V_{GE} = \pm 15 \text{ V}$		25		ns		
$t_{d(off)}$	$I_{Cnom} = 8 \text{ A}, T_j = 125^{\circ}\text{C}$		365		ns		
t _f	$R_{Gon} = R_{Goff} = 50 \Omega$		105		ns		
E _{on}	inductive load		0,8		mJ		
E_{off}			1		mJ		
Diode - Ir	verter, Chopper						
$V_F = V_{EC}$	I _{Fnom} = 8 A, T _i = 25 (125) °C		1,9 (2)	2,2 (2,4)	V		
V _(TO)	T _i = 25 (125) °C		1 (0,8)	1,1 (0,9)	V		
r _T	T _j = 25 (125) °C		112 (150)	138 (187)	mΩ		
$R_{th(j-s)}$	per diode		2,5		K/W		
I _{RRM}	under following conditions		12		Α		
Q_{rr}	I _{Fnom} = 8 A, V _R = 600 V		1,8		μC		
E _{rr}	V _{GE} = 0 V, T _i = 125 °C		0,9		mJ		
	$di_F/dt = 520 \text{ A/}\mu\text{s}$						
Diode - R	ectifier						
V_{F}	I _{Fnom} = 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		
	ture 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		

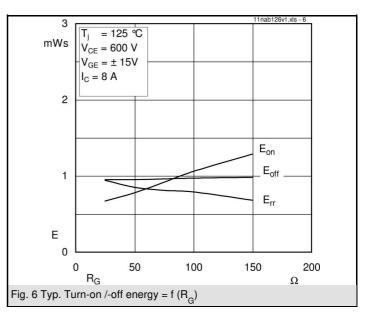


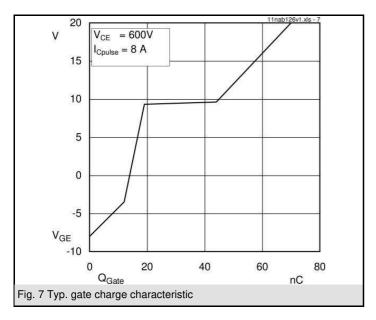


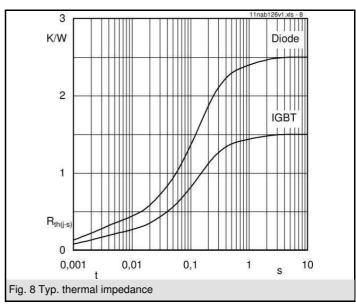


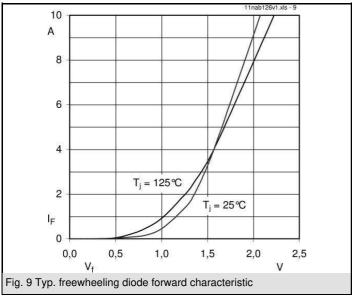


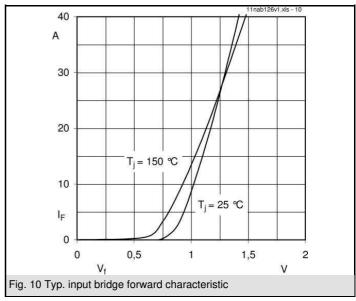


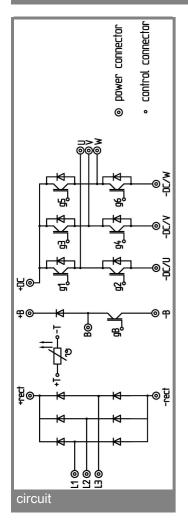


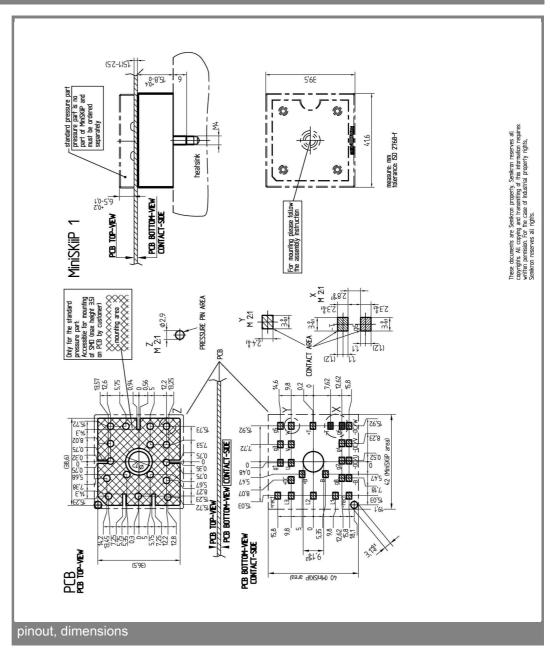












This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

4 02-05-2007 SCT © by SEMIKRON

^{*} The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.