

MiniSKiiP[®]1

3-phase bridge inverter

SKiiP 13AC126V20

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*

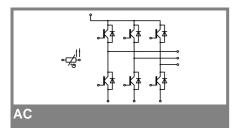
- Inverter up to 16kVA
- Typical motor power 7,5 kW

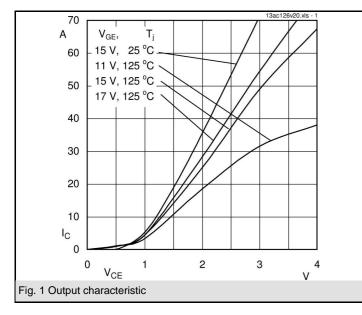
Remarks

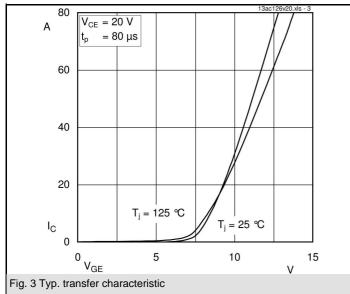
• V_{CEsat}, V_F = chip level value

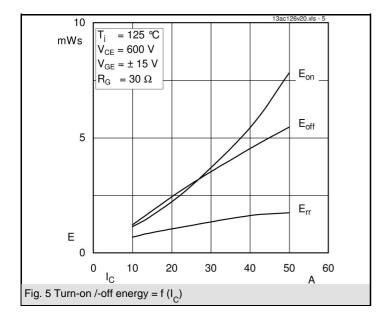
Absolute Maximum Ratings		T _S = 25 °C, unless otherwise specified						
Symbol	Conditions	Values	Units					
IGBT - Inverter								
V _{CES}		1200	V					
I _C	T _s = 25 (70) °C	41 (31)	А					
I _{CRM}	$t_p \le 1 \text{ ms}$	50	А					
V _{GES}		±20	V					
Т _ј		-40+150	°C					
Diode - Inverter								
I _F	T _s = 25 (70) °C	27 (21)	А					
I _{FRM}	t _p ≤ 1 ms	50	А					
Т _ј		-40+150	°C					
I _{tRMS}	per power terminal (20 A / spring)	40	А					
T _{stg}	$T_{op} \le T_{stg}$	-40+125	°C					
V _{isol}	AC, 1 min.	2500	V					

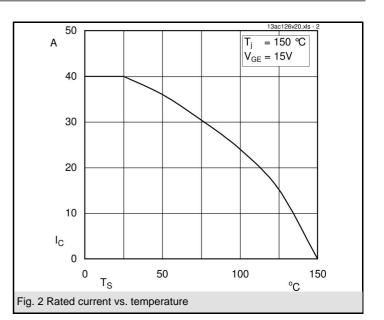
Characteristics		T _S = 25 °C,	T_S = 25 °C, unless otherwise specified					
Symbol	Conditions	min.	typ.	max.	Units			
IGBT - Inverter								
V _{CEsat}	I _{Cnom} = 25 A, T _i = 25 (125) °C		1,7 (2)	2,1 (2,4)	V			
V _{GE(th)}	$V_{GE} = V_{CE}, I_{C} = 1 \text{ mA}$	5	5,8	6,5	V			
V _{CE(TO)}	T _j = 25 (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		75		ns			
t, Ó	V_{CC} = 600 V, V_{GE} = ± 15 V		30		ns			
t _{d(off)}	I _{Cnom} = 25 A, T _j = 125 °C		475		ns			
t _r	$R_{Gon} = R_{Goff} = 30 \Omega$		85		ns			
E _{on}	inductive load		2,9		mJ			
E _{off}			3		mJ			
Diode - Ir	nverter							
V _F = V _{EC}	I _{Fnom} = 25 A, T _i = 25 (125) °C		2,4 (2,2)	2,9 (2,7)	V			
V _(TO)	T _i = 25 (125) °C		0,9 (0,6)	1,1 (0,8)	V			
r _T	T _i = 25 (125) °C		60 (64)	72 (76)	mΩ			
R _{th(j-s)}	per diode		1,5		K/W			
I _{RRM}	under following conditions		25		Α			
Q _{rr}	I _{Enom} = 25 A, V _R = 600 V		3,2		μC			
E _{rr}	V _{GE} = 0 V, T _i = 125 °C		1,2		mJ			
	di _F /dt = 1050 A/µs							
Tempera	ture Sensor	•						
R _{ts}	3 %, T _r = 25 (100) °C		1000(1670)		Ω			
Mechanie	cal Data	1			1			
m			35		g			
Ms	Mounting torque	2		2,5	Nm			

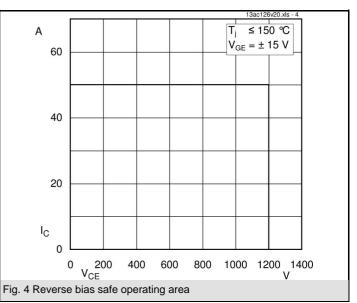


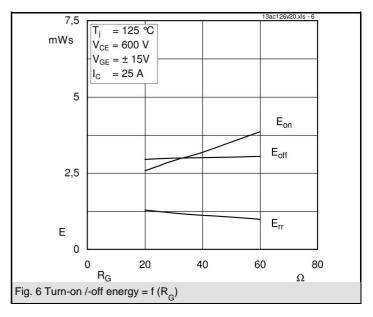


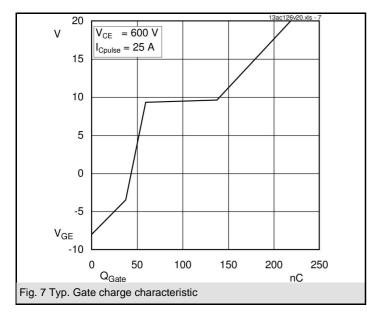


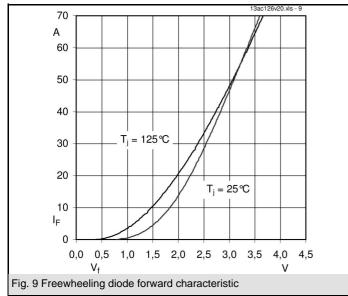


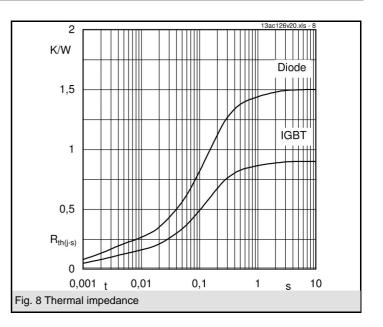


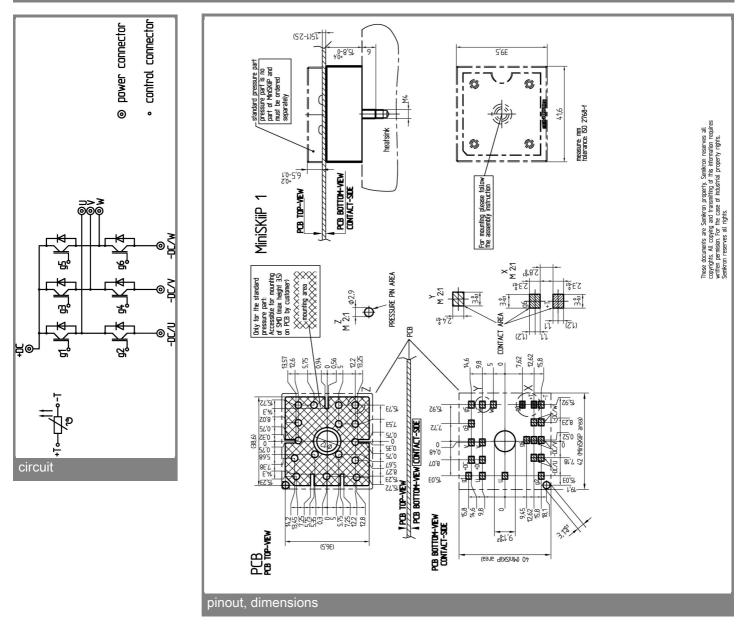












This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

* 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.