

MiniSKiiP[®] 3

3-phase bridge inverter

SKiiP 38AC126V2

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*

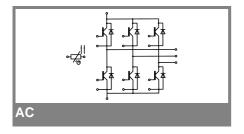
- Inverter up to 39 kVA
- Typical motor power 22 kW

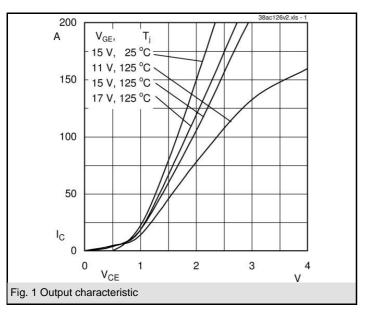
Remarks

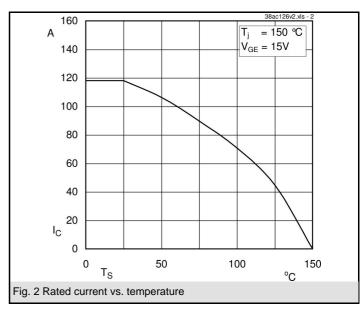
• V_{CEsat} , V_F= chip level value

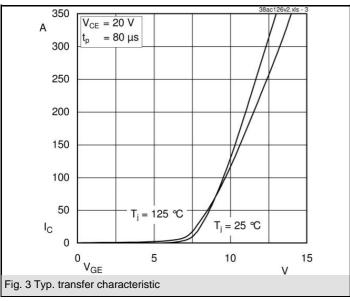
Absolute	Maximum Ratings	T _s = 25 °C, unless otherwise sp	ecified				
Symbol	Conditions	Values	Units				
IGBT - Inverter							
V _{CES} I _C I _{CRM} V _{GES}	$T_s = 25 (70) ^{\circ}\text{C}$ $t_p \le 1 \text{ms}$	1200 118 (88) 210 ± 20	V A A V				
T_j		- 40 + 150	°C				
Diode - Inverter							
I _F I _{FRM} T _j	$T_s = 25 (70) ^{\circ}\text{C}$ $t_p \le 1 \text{ms}$	118 (88) 210 - 40 + 150	A A °C				
$\begin{matrix} I_{\text{tRMS}} \\ T_{\text{stg}} \\ V_{\text{isol}} \end{matrix}$	per power terminal (20 A / spring) $T_{op} \leq T_{stg}$ AC, 1 min.	160 - 40 + 125 2500	A °C V				

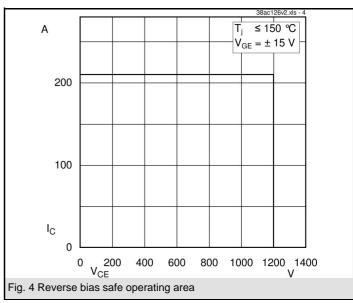
Character	istics	Γ _s = 25 °C	= 25 °C, unless otherwise specified					
	Conditions	min.	typ.	max.	Units			
IGBT - Inverter								
V _{CEsat}	I _{Cnom} = 105 A, T _i = 25 (125) °C		1,7 (2)	2,1 (2,4)	V			
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 3$ mA	5	5,8	6,5	V			
V _{CE(TO)}	T _j = 25 (125) °C		1 (0,9)	,	V			
r _T	$T_j = 25 (125) ^{\circ}C$		6,7 (10)	8,6 (12)	mΩ			
C _{ies}	$V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, f = 1 \text{ MHz}$		8,4		nF -			
C _{oes}	$V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, f = 1 \text{ MHz}$		1,5		nF			
C _{res}	$V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, f = 1 \text{ MHz}$		1,1		nF			
R _{th(j-s)}	per IGBT		0,4		K/W			
t _{d(on)}	under following conditions		75		ns			
t _r	$V_{CC} = 600 \text{ V}, V_{GE} = \pm 15 \text{ V}$		35		ns			
t _{d(off)}	I _{Cnom} = 105 A, T _j = 125 °C		465		ns			
t _f	$R_{Gon} = R_{Goff} = 5 \Omega$		90		ns			
E _{on}	inductive load		13,1		mJ			
E _{off}			13		mJ			
Diode - Inverter								
$V_F = V_{EC}$	$I_{Fnom} = 105 \text{ A}, T_j = 25 (125) ^{\circ}\text{C}$		1,6 (1,6)		V			
V _(TO)	T _j = 25 (125) °C		1 (0,8)		V			
r _T	$T_j = 25 (125) ^{\circ}C$		5,7 (7,6)	6,7 (8,6)	mΩ			
$R_{th(j-s)}$	per diode		0,55		K/W			
I _{RRM}	under following conditions		175		Α			
Q_{rr}	I _{Fnom} = 105 A, V _R = 600 V		26		μC			
E _{rr}	V _{GE} = 0 V, T _j = 125 °C		11,2		mJ			
	$di_F/dt = 4000 \text{ A/}\mu\text{s}$							
Temperature Sensor								
R _{ts}	3 %, T _r = 25 (100) °C		1000(1670)		Ω			
Mechanical Data								
m			95		g			
M_s	Mounting torque	2		2,5	Nm			

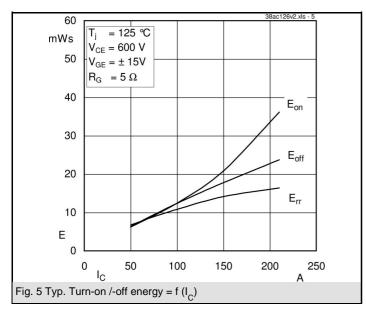


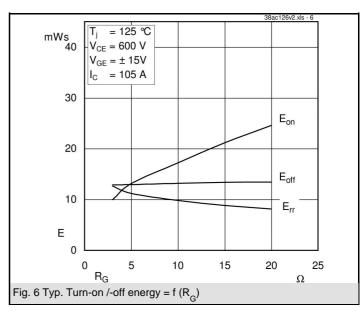


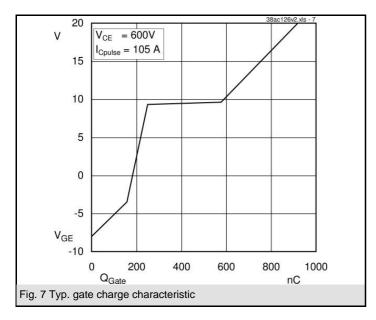


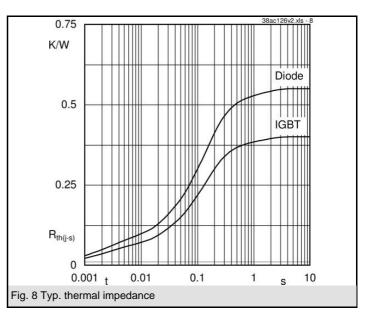


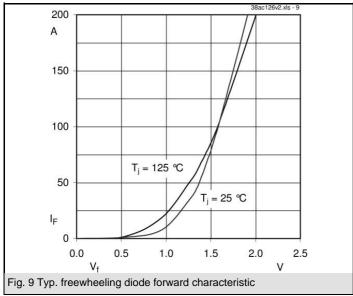


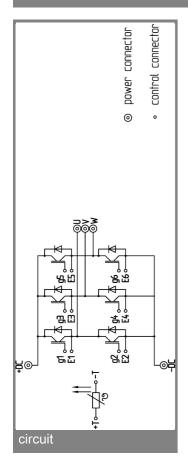


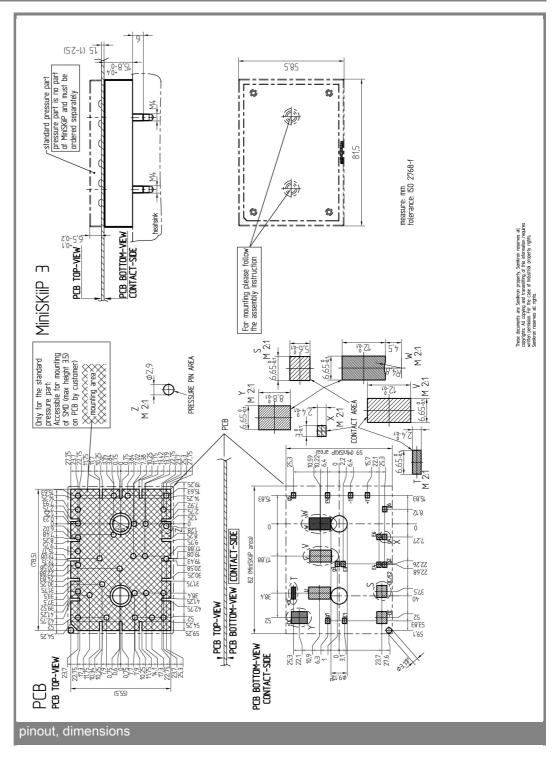












This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

^{*} 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.