

SKiiP 28ANB16V1



MiniSKiiP[®] 2

3-phase bridge rectifier +
brake chopper

SKiiP 28ANB16V1

Features

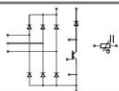
- Fast Trench IGBTs
- Robust and soft freewheeling diodes in CAL technology
- Highly reliable spring contacts for electrical connections
- UL recognised file no. E63532

Typical Applications*

- Input bridge for Inverter up to 39 kVA

Remarks

- V_{CEsat} , V_F = chip level value



ANB

Absolute Maximum Ratings		$T_s = 25^\circ\text{C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT - Chopper			
V_{CES}		1200	V
I_C	$T_s = 25 (70)^\circ\text{C}$	118 (88)	A
I_{CRM}		210	A
V_{GES}		± 20	V
T_J		-40 ... +150	$^\circ\text{C}$
Diode - Chopper			
I_F	$T_s = 25 (70)^\circ\text{C}$	118 (88)	A
I_{FRM}		210	A
T_J		-40 ... +150	$^\circ\text{C}$
Diode - Rectifier			
V_{RRM}		1600	V
I_F	$T_s = 70^\circ\text{C}$	83	A
I_{FSM}	$t_p = 10 \text{ ms, sin } 180^\circ, T_J = 25^\circ\text{C}$	1000	A
i^2t	$t_p = 10 \text{ ms, sin } 180^\circ, T_J = 25^\circ\text{C}$	6600	A^2s
T_J		-40 ... +150	$^\circ\text{C}$
Module			
I_{RMS}	per power terminal (20 A / spring)	120	A
T_{stg}		-40 ... +125	$^\circ\text{C}$
V_{load}	AC, 1 min.	2500	V

Characteristics		$T_s = 25^\circ\text{C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT - Chopper					
V_{CEsat}	$I_{Cnom} = 105 \text{ A}, T_J = 25 (125)^\circ\text{C}$		1,7 (2)	2,1 (2,4)	V
$V_{GE(TH)}$	$V_{GE} = V_{CE}, I_C = 3 \text{ mA}$	5	5,8	6,5	V
$V_{CE(TD)}$	$T_J = 25 (125)^\circ\text{C}$		1 (0,9)	1,2 (1,1)	V
r_T	$T_J = 25 (125)^\circ\text{C}$		6,7 (10)	8,6 (12)	m Ω
C_{iss}	$V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, f = 1 \text{ MHz}$		8,4		nF
C_{oss}	$V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, f = 1 \text{ MHz}$		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
$t_{i(on)}$	under following conditions		75		ns
t_r	$V_{CC} = 600 \text{ V}, V_{GE} = \pm 15 \text{ V}$		35		ns
$t_{i(off)}$	$I_{Cnom} = 105 \text{ A}, T_J = 125^\circ\text{C}$		465		ns
t_f	$R_{con} = R_{Coff} = 5 \Omega$		90		ns
E_{on}	inductive load		13,1		mJ
E_{off}			13		mJ
Diode - Chopper					
$V_F = V_{EC}$	$I_{Fnom} = 105 \text{ A}, T_J = 25 (125)^\circ\text{C}$		1,6 (1,6)	1,8 (1,8)	V
$V_{(TD)}$	$T_J = 25 (125)^\circ\text{C}$		1 (0,8)	1,1 (0,9)	V
r_T	$T_J = 25 (125)^\circ\text{C}$		5,7 (7,6)	6,7 (8,6)	m Ω
$R_{th(j-s)}$	per diode		0,55		K/W
I_{RRM}	under following conditions		175		A
C_{rr}	$I_{Fnom} = 105 \text{ A}, V_R = 600 \text{ V}$		26		μC
E_{rr}	$V_{GE} = 0 \text{ V}, T_J = 125^\circ\text{C}$		11,2		mJ
	$di_F/dt = 4000 \text{ A}/\mu\text{s}$				
Diode - Rectifier					
V_F	$I_{Fnom} = 75 \text{ A}, T_J = 25^\circ\text{C}$		1,2		V
$V_{(TD)}$	$T_J = 150^\circ\text{C}$		0,8		V
r_T	$T_J = 150^\circ\text{C}$		7		m Ω
$R_{th(j-s)}$	per diode		0,7		K/W
Temperature Sensor					
R_{ts}	3 %, $T_r = 25 (100)^\circ\text{C}$		1000(1670)		Ω
Mechanical Data					
w			65		g
M_b	Mounting torque		2	2,5	Nm

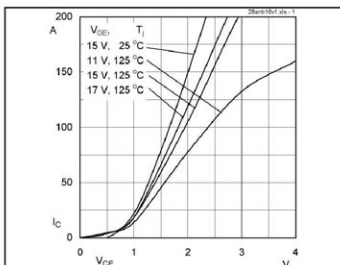


Fig. 1 Typ. output characteristic

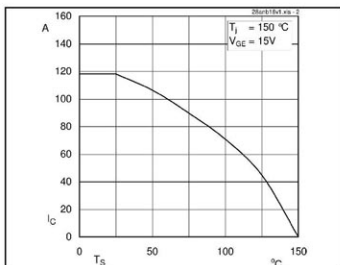


Fig. 2 Typ. rated current vs. temperature

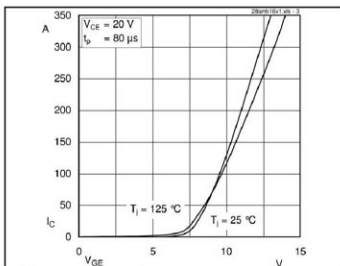


Fig. 3 Typ. transfer characteristic

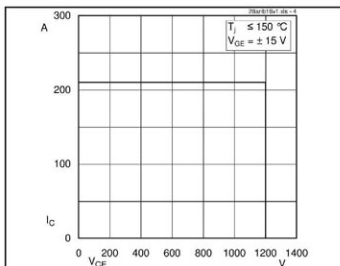


Fig. 4 Reverse bias safe operating area

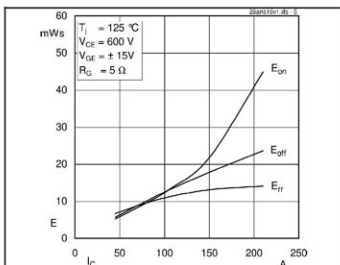


Fig. 5 Typ. Turn-on / off energy = $f(I_c)$

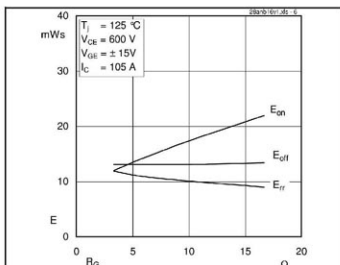
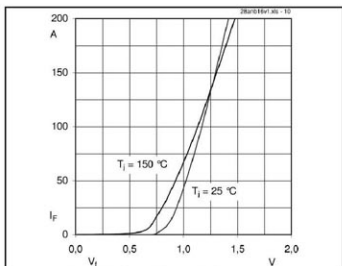
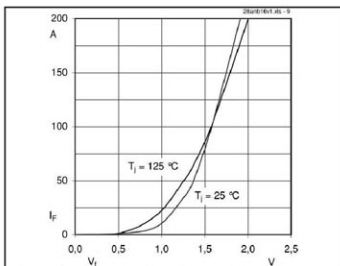
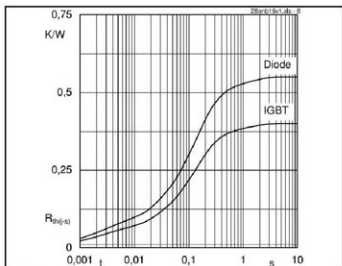
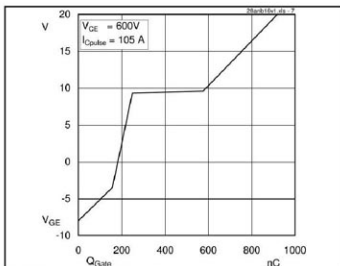
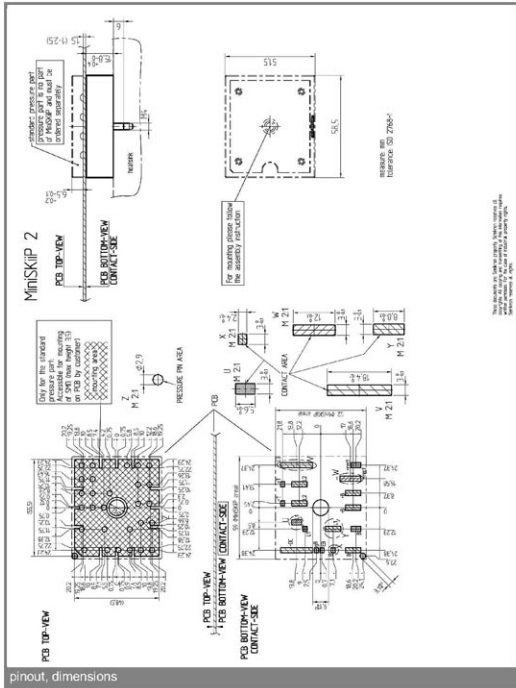
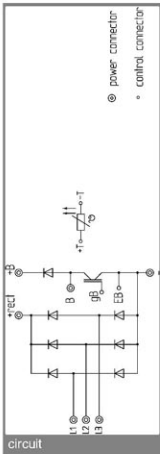


Fig. 6 Typ. Turn-on / off energy = $f(R_g)$





Not suitable for use in safety-critical systems or applications where failure of the device could lead to injury or death. For more information, please refer to the SKiiP 28ANB16V1 data sheet, version 4.0.

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.