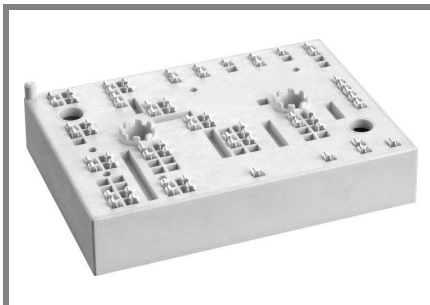


SKiiP 39ANB16V1



MiniSKiiP® 3

3-phase bridge rectifier +
brake chopper

SKiiP 39ANB16V1

Features

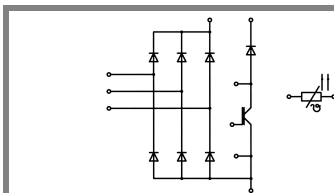
- Fast Trench IGBTs
- Robust and soft freewheeling diodes in CAL technology
- Highly reliable spring contacts for electrical connections
- UL recognised file no. E63532

Typical Applications*

- Input bridge for Inverter up to 45 kVA

Remarks

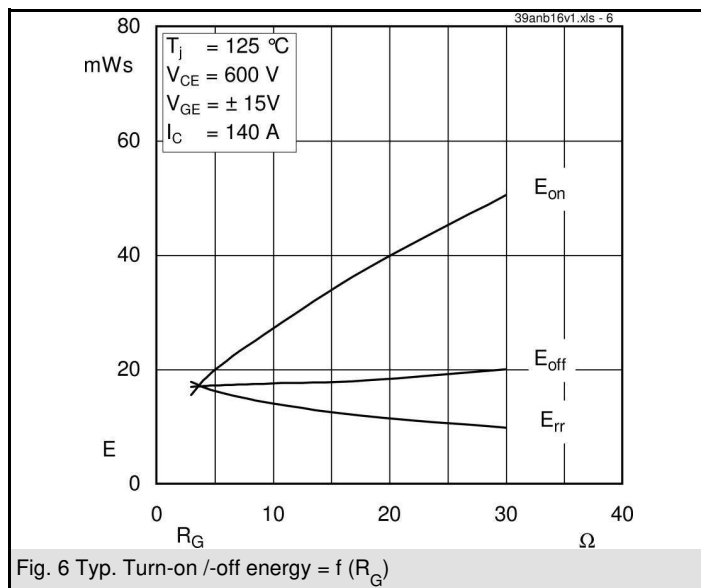
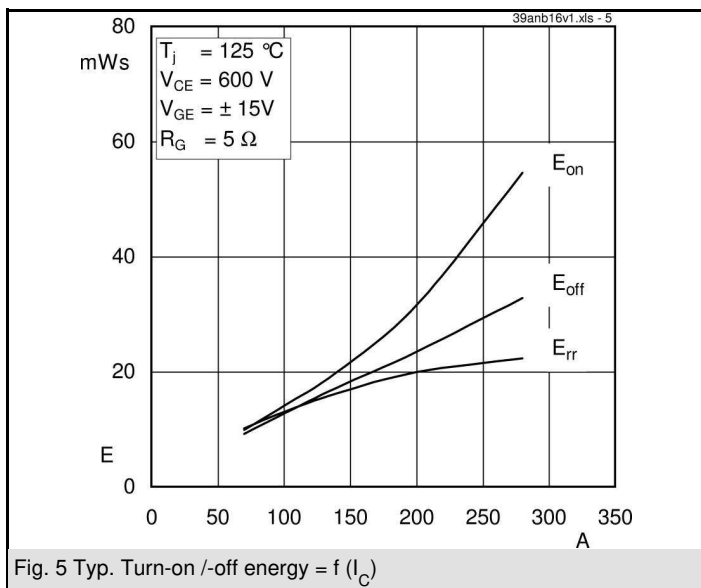
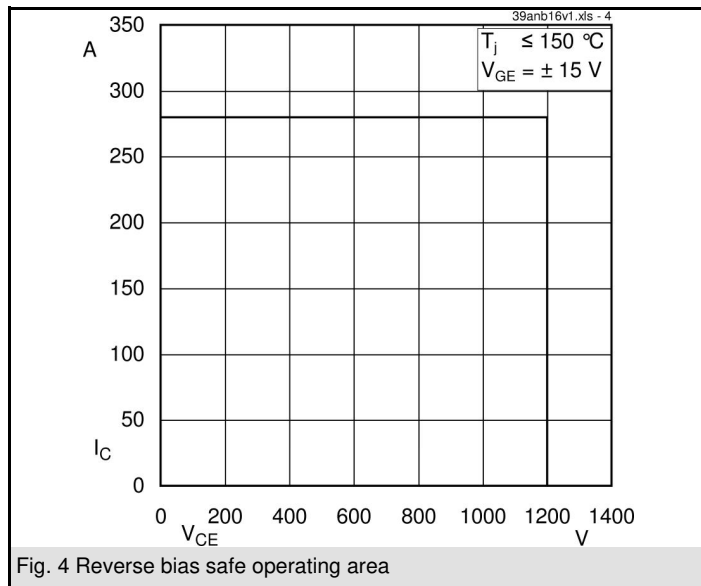
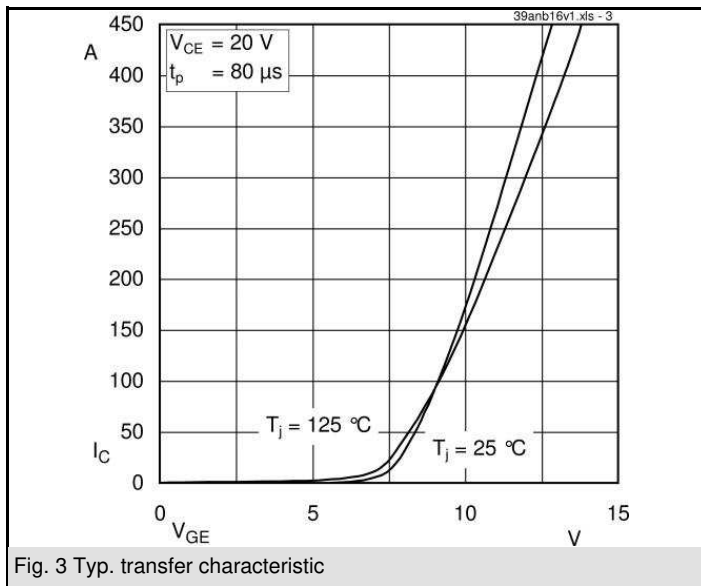
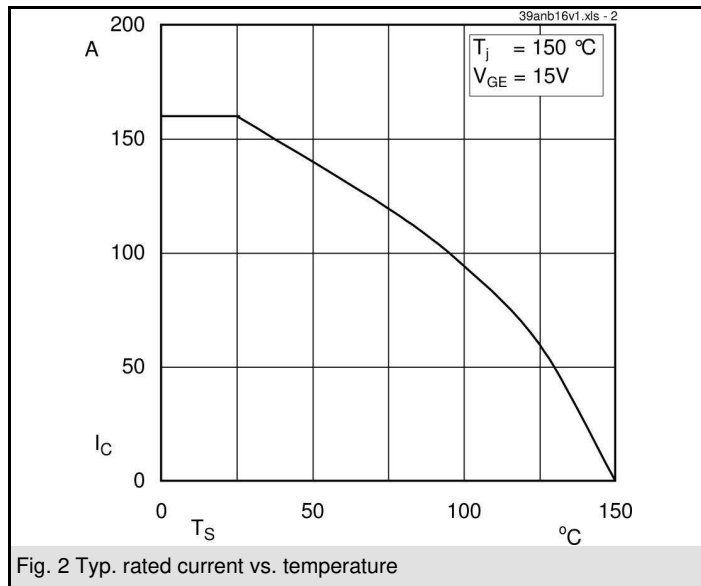
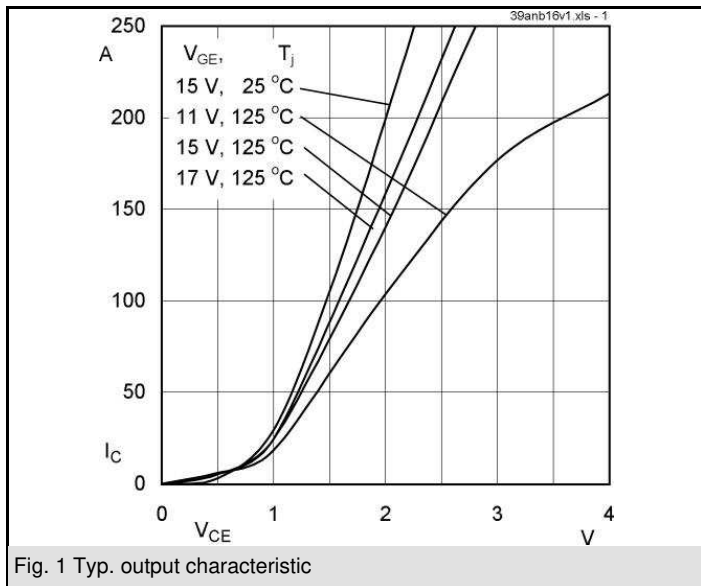
- V_{CEsat} , V_F = chip level value

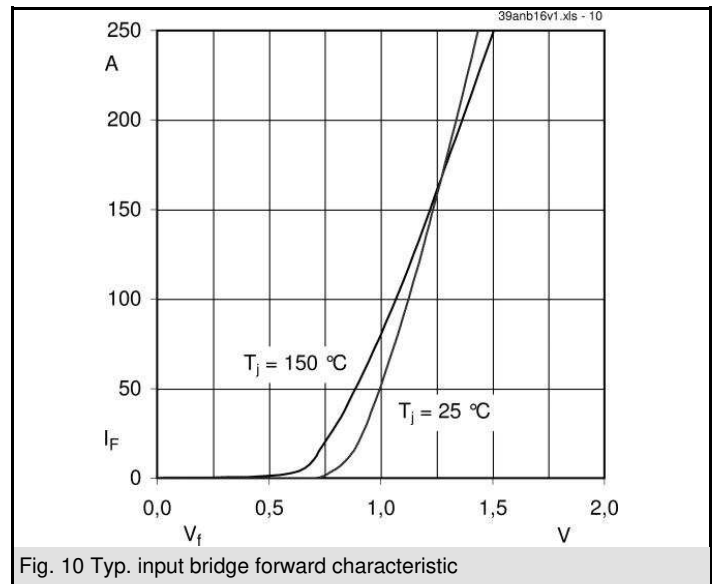
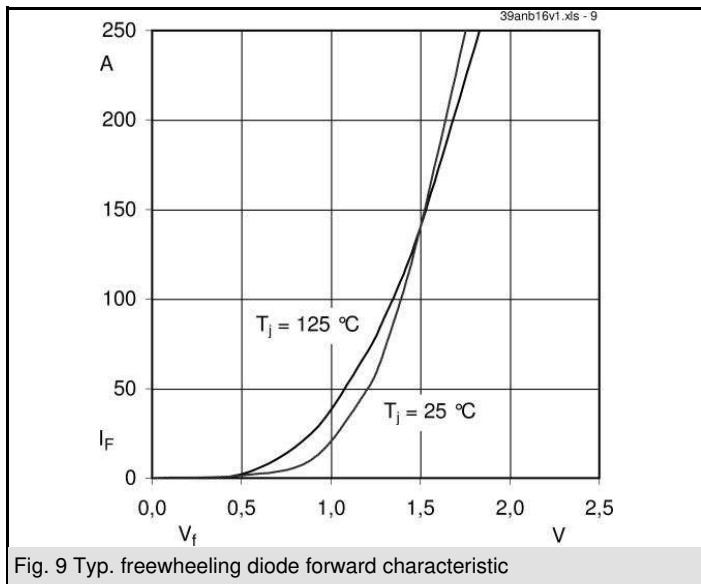
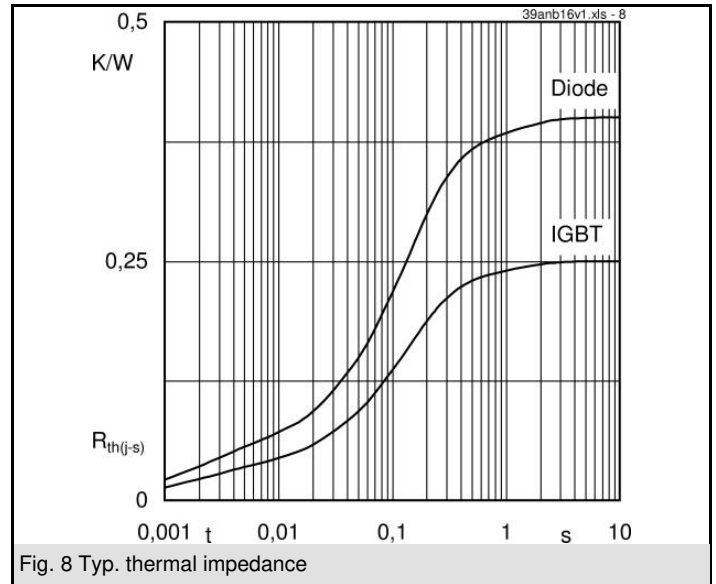
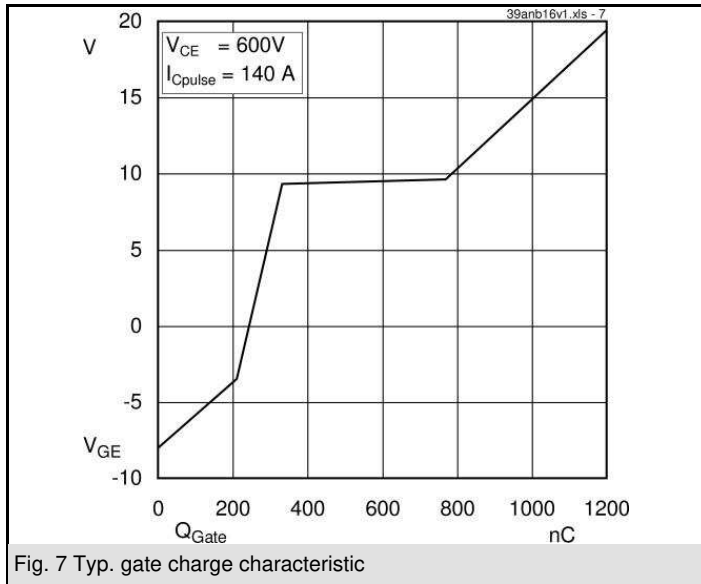


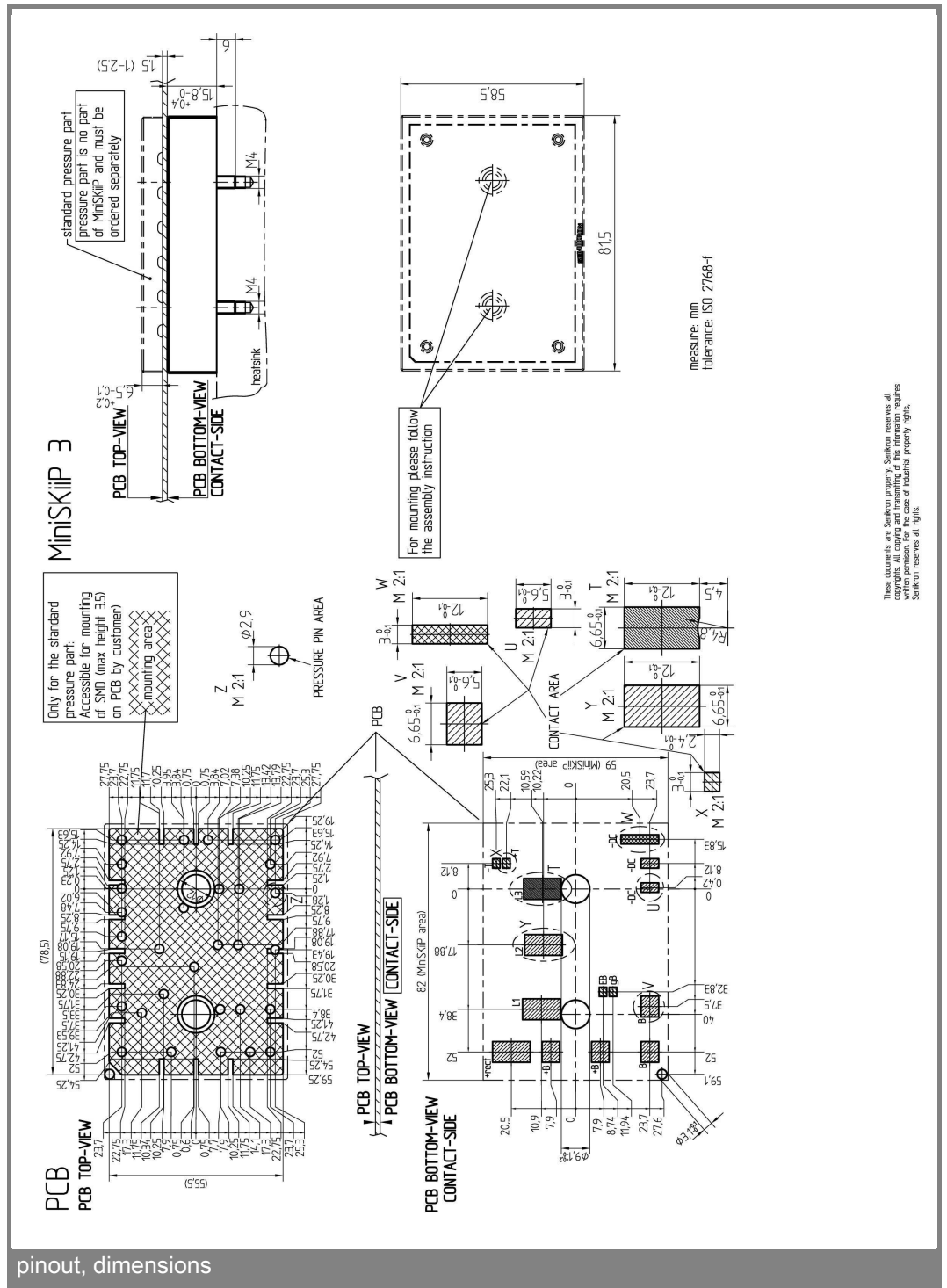
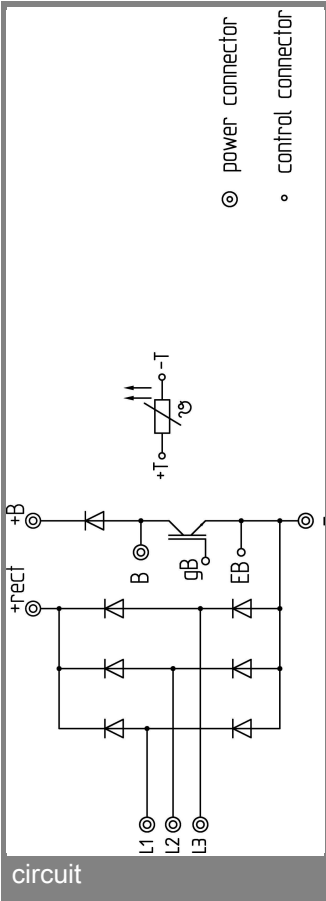
ANB

Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified		
Symbol	Conditions	Values	Units	
IGBT - Inverter, Chopper				
V_{CES}	$T_s = 25\text{ (70) °C}$	1200	V	
I_C		157 (118)	A	
I_{CRM}		280	A	
V_{GES}		± 20	V	
T_j		- 40 ... + 150	°C	
Diode - Inverter, Chopper				
I_F	$T_s = 25\text{ (70) °C}$	167 (124)	A	
I_{FRM}		280	A	
T_j		- 40 ... + 150	°C	
Diode - Rectifier				
V_{RRM}	$T_s = 70\text{ °C}$	1600	V	
I_F		124	A	
I_{FSM}		$t_p = 10\text{ ms, sin } 180\text{ °, } T_j = 25\text{ °C}$	1600	A
i^2t		$t_p = 10\text{ ms, sin } 180\text{ °, } T_j = 25\text{ °C}$	14500	A ² s
T_j		- 40 ... + 150	°C	
Module				
I_{RMS}	per power terminal (20 A / spring)	160	A	
T_{stg}		- 40 ... + 125	°C	
V_{isol}	AC, 1 min.	2500	V	

Characteristics		$T_s = 25\text{ °C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT - Inverter, Chopper					
V_{CEsat}	$I_{Cnom} = 140\text{ A, } T_j = 25\text{ (125) °C}$		1,7 (2)	2,1 (2,4)	V
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = 6\text{ mA}$	5	5,8	6,5	V
$V_{CE(TO)}$	$T_j = 25\text{ (125) °C}$		1 (0,9)	1,2 (1,1)	V
r_T	$T_j = 25\text{ (125) °C}$		5 (7,9)	6,4 (9,3)	mΩ
C_{ies}	$V_{CE} = 25\text{ V, } V_{GE} = 0\text{ V, } f = 1\text{ MHz}$		11,2		nF
C_{oes}	$V_{CE} = 25\text{ V, } V_{GE} = 0\text{ V, } f = 1\text{ MHz}$		1,9		nF
C_{res}	$V_{CE} = 25\text{ V, } V_{GE} = 0\text{ V, } f = 1\text{ MHz}$		1,5		nF
$R_{th(j-s)}$	per IGBT		0,3		K/W
$t_{d(on)}$	under following conditions		80		ns
t_r	$V_{CC} = 600\text{ V, } V_{GE} = \pm 15\text{ V}$		40		ns
$t_{d(off)}$	$I_{Cnom} = 140\text{ A, } T_j = 125\text{ °C}$		500		ns
t_f	$R_{Gon} = R_{Goff} = 5\text{ Ω}$		100		ns
E_{on}	inductive load		19,9		mJ
E_{off}			17,2		mJ
Diode - Inverter, Chopper					
$V_F = V_{EC}$	$I_{Fnom} = 140\text{ A, } T_j = 25\text{ (125) °C}$		1,5 (1,5)	1,7 (1,7)	V
$V_{(TO)}$	$T_j = 25\text{ (125) °C}$		1 (0,8)	1,1 (0,9)	V
r_T	$T_j = 25\text{ (125) °C}$		3,6 (5)	4,3 (5,7)	mΩ
$R_{th(j-s)}$	per diode		0,4		K/W
I_{RRM}	under following conditions		210		A
Q_{rr}	$I_{Fnom} = 140\text{ A, } V_R = 600\text{ V}$		38		μC
E_{rr}	$V_{GE} = 0\text{ V, } T_j = 125\text{ °C}$		16,2		mJ
	$di_F/dt = 4300\text{ A/μs}$				
Diode - Rectifier					
V_F	$I_{Fnom} = 90\text{ A, } T_j = 25\text{ °C}$		1,2		V
$V_{(TO)}$	$T_j = 150\text{ °C}$		0,8		V
r_T	$T_j = 150\text{ °C}$		4		mΩ
$R_{th(j-s)}$	per diode		0,5		K/W
Temperature Sensor					
R_{ts}	3 %, $T_r = 25\text{ (100) °C}$		1000(1670)		Ω
Mechanical Data					
w			95		g
M_s	Mounting torque	2		2,5	Nm







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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.