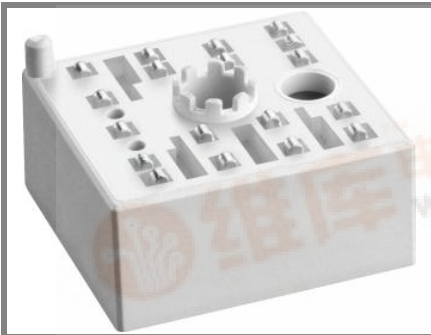


SKiIP 03NEB066V3



MiniSKiIP® 0

1-phase bridge rectifier +
brake chopper + 3-phase
bridge inverter
SKiIP 03NEB066V3

Features

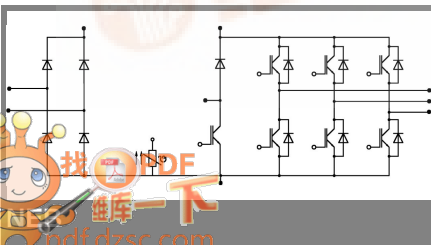
- Trench IGBTs
- Robust and soft freewheeling diodes in CAL technology
- Highly reliable spring contacts for electrical connections
- UL recognised file no. E63532

Typical Applications

- Inverter up to 5,6 kVA
- Typical motor power 3,0 kW

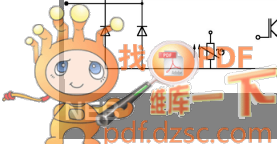
Remarks

- Case temperature limited to $T_C = 125^\circ\text{C}$ max.
- Product reliability results are valid for $T_J = 150^\circ\text{C}$
- SC data: $t_p \leq 6 \mu\text{s}$; $V_{GE} \leq 15 \text{ V}$; $T_J = 150^\circ\text{C}$; $V_{CC} = 360 \text{ V}$
- V_{CEsat} , V_F = chip level value

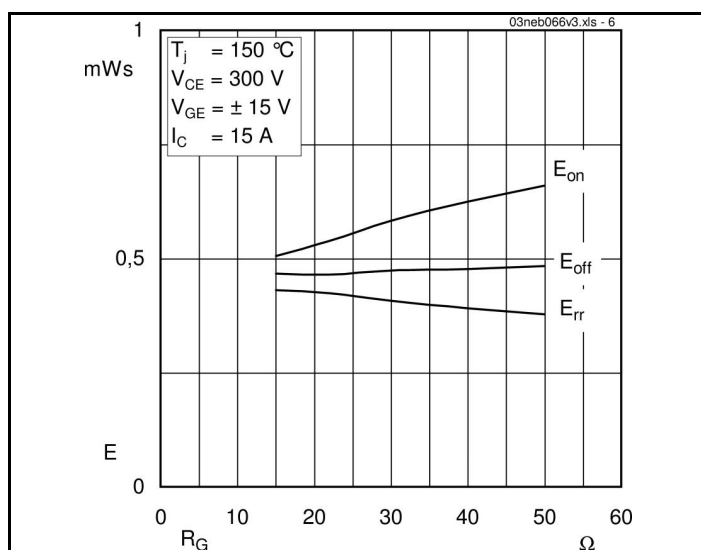
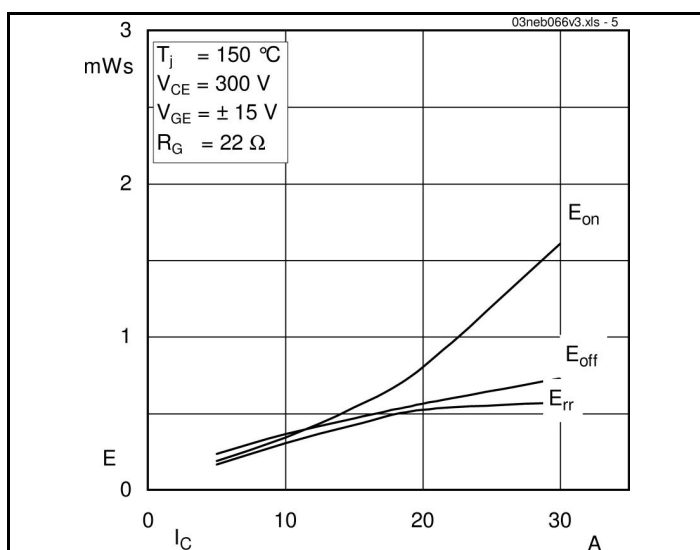
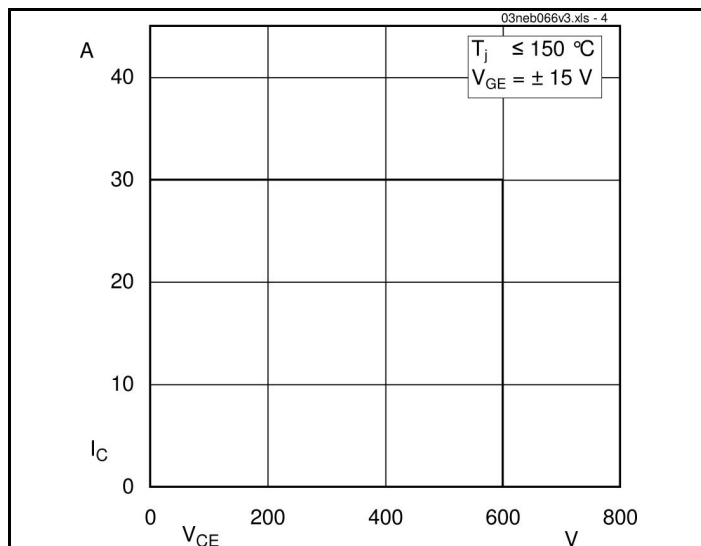
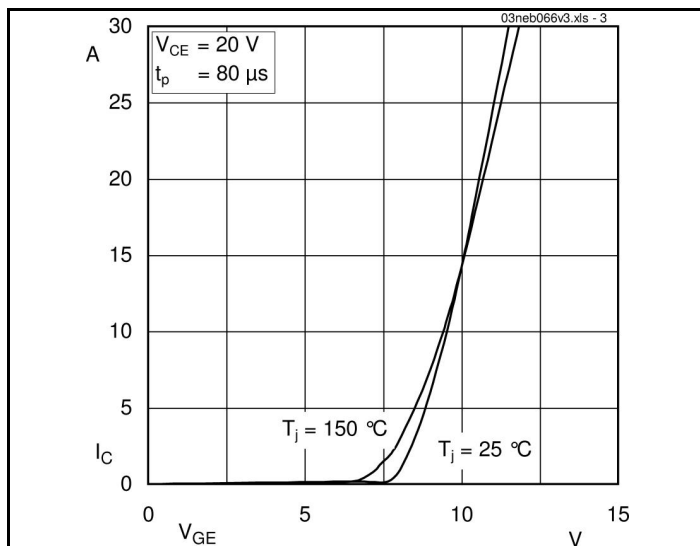
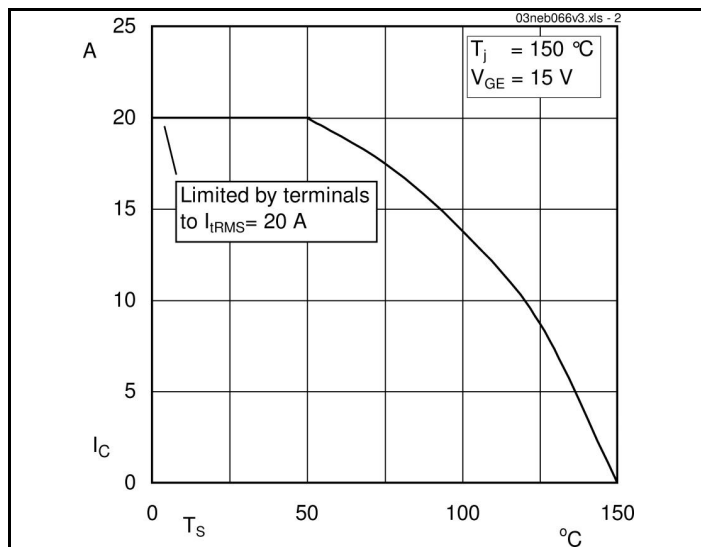
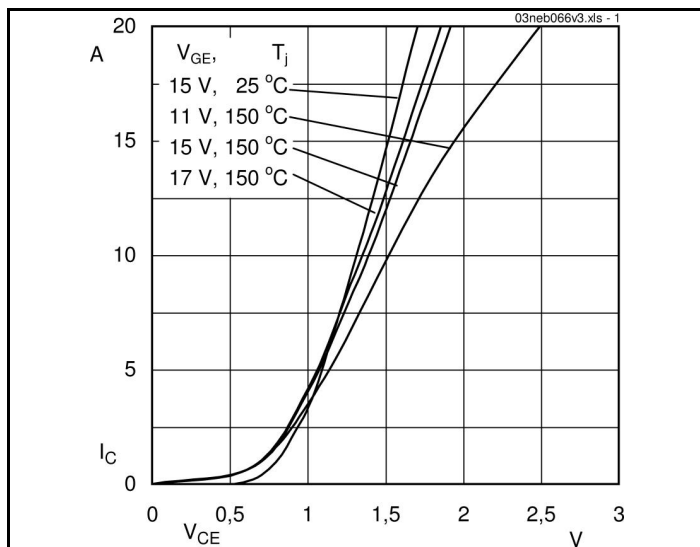


Absolute Maximum Ratings		$T_s = 25^\circ\text{C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT - Inverter, Chopper			
V_{CES}		600	V
I_C	$T_s = 25 (70)^\circ\text{C}$, $T_J = 150^\circ\text{C}$	25 (17)	A
I_C	$T_s = 25 (70)^\circ\text{C}$, $T_J = 175^\circ\text{C}$	27 (21)	A
I_{CRM}	$t_p = 1 \text{ ms}$	30	A
V_{GES}		± 20	V
Diode - Inverter, Chopper			
I_F	$T_s = 25 (70)^\circ\text{C}$, $T_J = 150^\circ\text{C}$	24 (16)	A
I_F	$T_s = 25 (70)^\circ\text{C}$, $T_J = 175^\circ\text{C}$	28 (21)	A
I_{FRM}	$t_p = 1 \text{ ms}$	30	A
Diode - Rectifier			
V_{RRM}		800	V
I_F	$T_s = 70^\circ\text{C}$	35	A
I_{FSM}	$t_p = 10 \text{ ms}$, $\sin 180^\circ$, $T_J = 25^\circ\text{C}$	220	A
i^2t	$t_p = 10 \text{ ms}$, $\sin 180^\circ$, $T_J = 25^\circ\text{C}$	240	A ² s
I_{HRMS}	per power terminal (20 A / spring)	20	A
T_J	IGBT, Diode	-40...+175	$^\circ\text{C}$
T_{stg}		-40...+125	$^\circ\text{C}$
V_{isol}	AC, 1 min.	2500	V

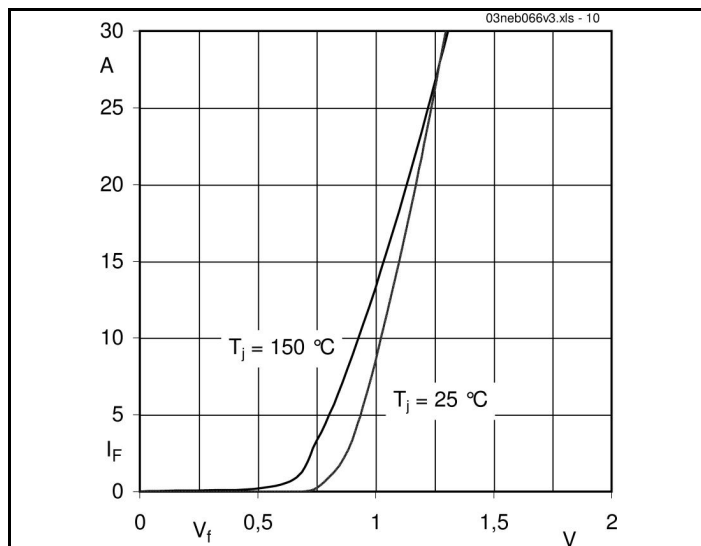
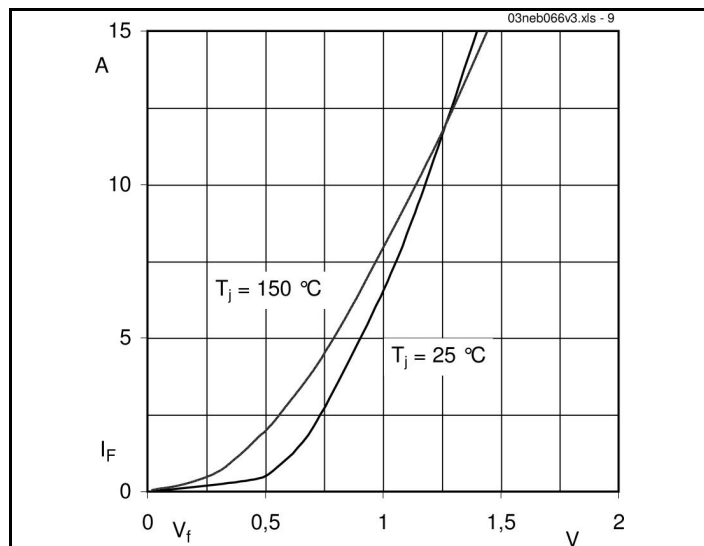
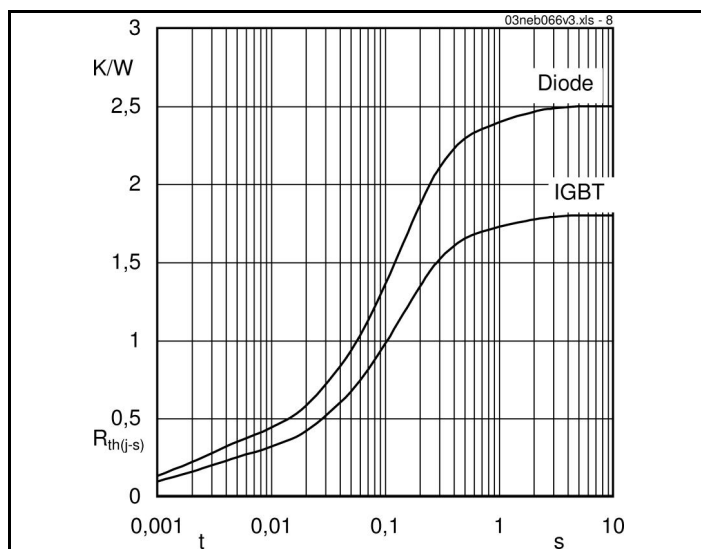
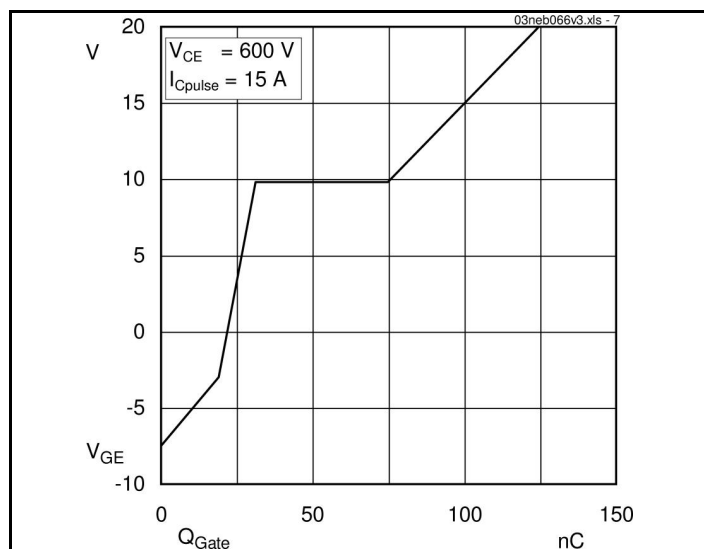
Characteristics		$T_s = 25^\circ\text{C}$, unless otherwise specified		
Symbol	Conditions	min.	typ.	max.
IGBT - Inverter, Chopper				
$V_{CE(sat)}$	$I_{Cnom} = 15 \text{ A}$, $T_J = 25 (150)^\circ\text{C}$		1,45 (1,65)	1,85 (2,05)
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 1 \text{ mA}$		5,8	
$V_{CE(TO)}$	$T_J = 25 (150)^\circ\text{C}$		0,9 (0,85)	1 (0,9)
r_{CE}	$T_J = 25 (150)^\circ\text{C}$		40 (57)	60 (80)
C_{ies}	$V_{CE} = 25 \text{ V}$, $V_{GE} = 0 \text{ V}$, $f = 1 \text{ MHz}$		0,86	
C_{oes}	$V_{CE} = 25 \text{ V}$, $V_{GE} = 0 \text{ V}$, $f = 1 \text{ MHz}$		0,18	
C_{res}	$V_{CE} = 25 \text{ V}$, $V_{GE} = 0 \text{ V}$, $f = 1 \text{ MHz}$		0,12	
$R_{CC+EE'}$	spring contact-chip $T_s = 25 (150)^\circ\text{C}$			
$R_{th(j-s)}$	per IGBT		1,8	
$t_{d(on)}$	under following conditions		20	
t_r	$V_{CC} = 300 \text{ V}$, $V_{GE} = \pm 15 \text{ V}$		30	
$t_{d(off)}$	$I_{Cnom} = 15 \text{ A}$, $T_J = 150^\circ\text{C}$		155	
t_f	$R_{Gon} = R_{Goff} = 22 \Omega$		45	
$E_{on} (E_{off})$	inductive load		0,6 (0,5)	
Diode - Inverter, Chopper				
$V_F = V_{EC}$	$I_F = 15 \text{ A}$, $T_J = 25 (150)^\circ\text{C}$		1,4 (1,4)	1,7 (1,7)
$V_{(TO)}$	$T_J = 25 (150)^\circ\text{C}$		1 (0,9)	1,1 (1)
r_T	$T_J = 25 (150)^\circ\text{C}$		27 (34)	40 (47)
$R_{th(j-s)}$	per diode		2,5	
I_{RRM}	under following conditions		19,8	
Q_{rr}	$I_{Fnom} = 15 \text{ A}$, $V_R = 300 \text{ V}$		1,9	
E_{rr}	$V_{GE} = 0 \text{ V}$, $T_J = 150^\circ\text{C}$		0,5	
	$di_F/dt = 930 \text{ A}/\mu\text{s}$			
Diode - Rectifier				
V_F	$I_{Fnom} = 15 \text{ A}$, $T_J = 25^\circ\text{C}$		1,1	
$V_{(TO)}$	$T_J = 150^\circ\text{C}$		0,8	
r_T	$T_J = 150^\circ\text{C}$		20	
$R_{th(j-s)}$	per diode		1,5	
Temperature Sensor				
R_{ts}	3 %, $T_r = 25 (100)^\circ\text{C}$		1000(1670)	
Mechanical Data				
w			21,5	
M_s	Mounting torque	2	2,5	



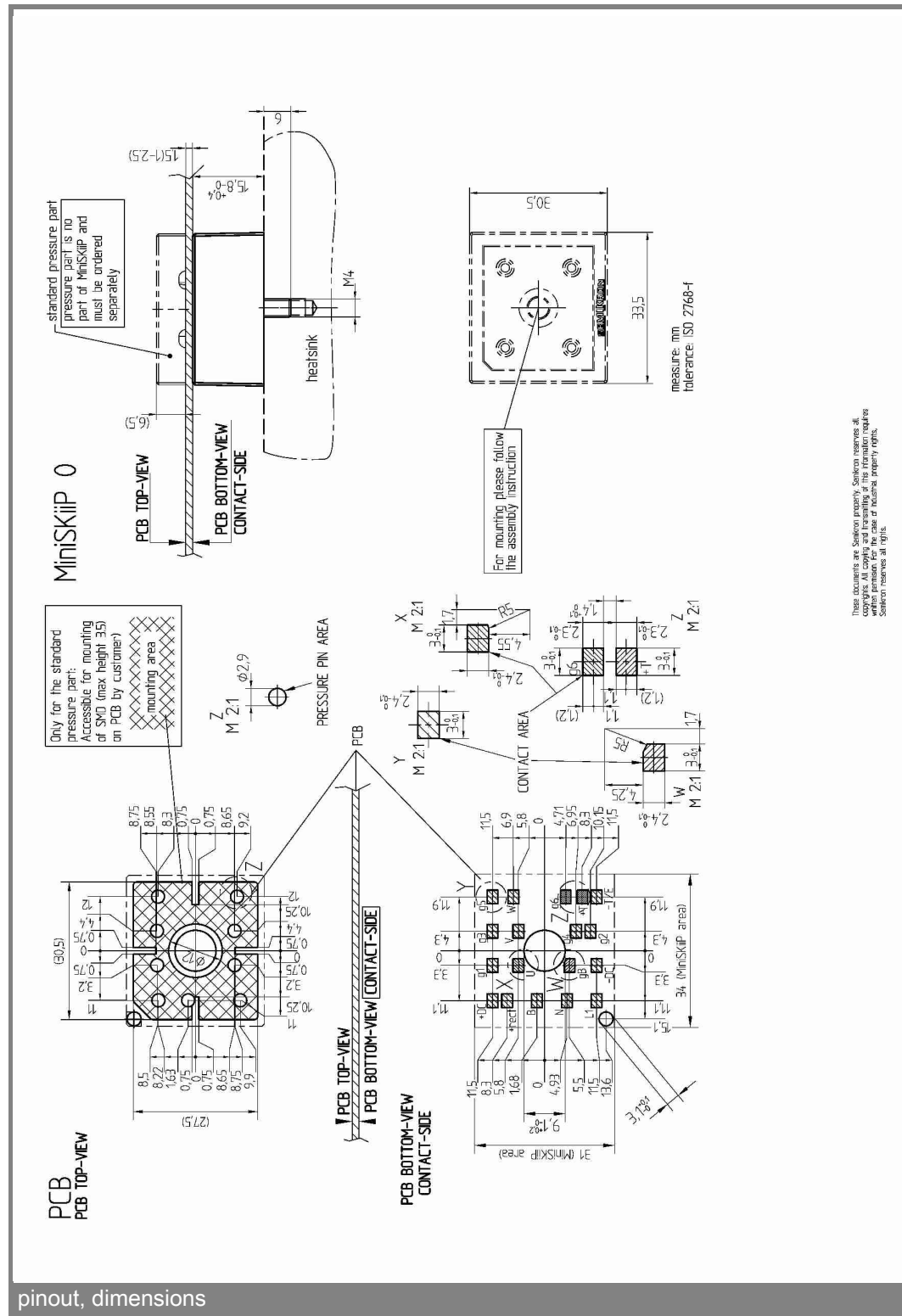
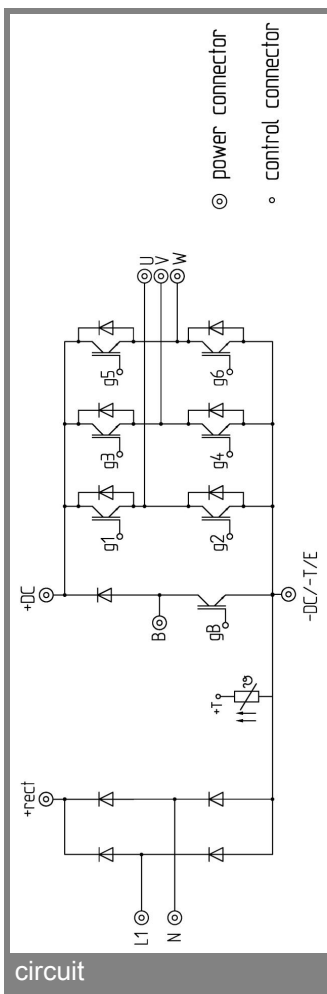
SKiiP 03NEB066V3



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

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