## SKiiP 02NEB066V3



1-phase bridge rectifier + brake chopper + 3-phase bridge inverter SKiiP 02NEB066V3

### **Features**

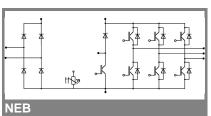
- Trench IGBTs
- Robust and soft freewheeling diodes in CAL technology
- Highly reliable spring contacts for electrical connections
- UL reognised file no. E63532

### **Typical Applications\***

- Inverter up to 5 kVA
- Typical motor power 2,2 kW

#### Remarks

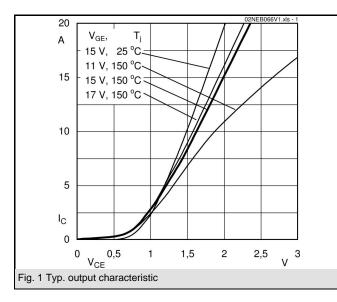
- · Case temperature limited to  $T_C$ = 125°C max.
- Product reliability results are valid
- for T<sub>j</sub>= 150°C SC data:  $t_p \le 6 \ \mu s$ ; V<sub>GE</sub>  $\le$ 15 V; T<sub>j</sub> = 150°C; V<sub>CC</sub> = 360 V V<sub>CEsat</sub>, V<sub>F</sub> = chip level value

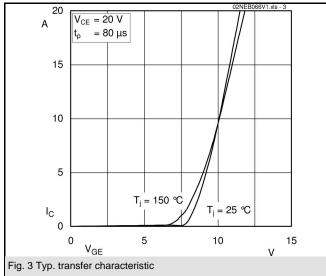


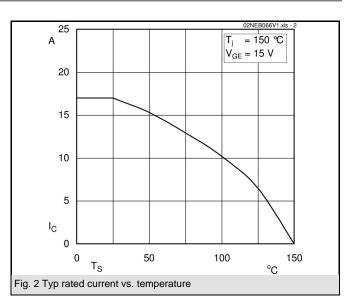
Absolute Maximum Ratings		T <sub>S</sub> = 25°C, unless otherwis	$T_S$ = 25°C, unless otherwise specified				
Symbol	Conditions	Values	Units				
IGBT - Inverter, Chopper							
V <sub>CES</sub>		600	V				
I <sub>C</sub>	T <sub>s</sub> = 25 (70) °C, T <sub>j</sub> = 150 °C	19 (14)	А				
I <sub>C</sub>	$T_s = 25 (70) °C, T_j = 175 °C$	20 (16)	А				
I <sub>CRM</sub>	t <sub>p</sub> = 1 ms	20	А				
V <sub>GES</sub>		±20	V				
Diode - Inverter, Chopper							
I <sub>F</sub>	T <sub>s</sub> = 25 (70) °C, T <sub>i</sub> = 150 °C	20 (15)	А				
I <sub>F</sub>	T <sub>s</sub> = 25 (70) °C, T <sub>j</sub> = 175 °C	20 (18)	А				
I <sub>FRM</sub>	t <sub>p</sub> = 1 ms	20	А				
Diode - Rectifier							
V <sub>RRM</sub>		800	V				
I <sub>F</sub>	T <sub>s</sub> = 70 °C	35	А				
I <sub>FSM</sub>	t <sub>p</sub> = 10 ms, sin 180 °, T <sub>j</sub> = 25 °C	220	А				
i²t	t <sub>p</sub> = 10 ms, sin 180 °, T <sub>j</sub> = 25 °C	240	A²s				
I <sub>tRMS</sub>	per power terminal (20 A / spring)	20	А				
Tj	IGBT, Diode	-40+175	°C				
T <sub>stg</sub>		-40+125	°C				
V <sub>isol</sub>	AC, 1 min.	2500	V				
<b>Characteristics</b> $T_{a} = 25^{\circ}$ C unless otherwise specified							

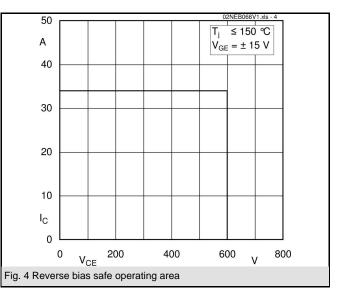
Characteristics		$T_S$ = 25°C, unless otherwise specified						
Symbol	Conditions	min.	typ.	max.	Units			
IGBT - Inverter, Chopper								
V <sub>CE(sat)</sub>	I <sub>Cnom</sub> = 10 A, T <sub>j</sub> = 25 (150) °C		1,45 (1,65)	1,85 (2,05)	V			
V <sub>GE(th)</sub>	$V_{GE} = V_{CE}, I_C = 1 \text{ mA}$		5,8		V			
V <sub>CE(TO)</sub>	T <sub>j</sub> = 25 (150) °C		0,9 (0,7)	1,1 (1)	V			
r <sub>CE</sub>	$T_j = 25 (150) °C$		60 (100)	80 (110)	mΩ			
C <sub>ies</sub>	$V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, \text{ f} = 1 \text{ MHz}$		0,58		nF			
C <sub>oes</sub>	$V_{GE} = 25 V, V_{GE} = 0 V, f = 1 MHz$		0,12		nF			
C <sub>res</sub>	$V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, f = 1 \text{ MHz}$		0,04		nF			
R <sub>CC'+EE'</sub>	spring contact-chip T <sub>s</sub> = 25 (150 )°C				mΩ			
R <sub>th(j-s)</sub>	per IGBT		2		K/W			
t <sub>d(on)</sub>	under following conditions		25		ns			
t <sub>r</sub>	$V_{CC} = 300 \text{ V}, V_{GE} = \pm 15 \text{ V}$		25		ns			
t <sub>d(off)</sub>	$I_{Cnom} = 10 \text{ A}, T_{j} = 150 \text{ °C}$		190		ns			
t <sub>f</sub>	$R_{Gon} = R_{Goff} = 39 \Omega$		40		ns			
$E_{on} \left( E_{off} \right)$	inductive load		0,5 (0,3)		mJ			
Diode - Inverter, Chopper								
$V_F = V_{EC}$	I <sub>F</sub> = 10 A, T <sub>i</sub> = 25 (150) °C		1,3 (1,3)	1,6 (1,6)	V			
V <sub>(TO)</sub>	T <sub>i</sub> = 25 (150) °C		0,9 (0,8)	1 (0,9)	V			
r <sub>T</sub>	T <sub>j</sub> = 25 (150) °C		40 (50)	60 (70)	mΩ			
R <sub>th(j-s)</sub>	per diode		2,46		K/W			
I <sub>RRM</sub>	under following conditions		15,8		А			
Q <sub>rr</sub>	I <sub>Fnom</sub> = 10 A, V <sub>R</sub> = 300 V		1,5		μC			
Err	V <sub>GE</sub> = 0 V, T <sub>j</sub> = 150°C		0,5		mJ			
	di <sub>F</sub> /dt = 810 A/µs							
Diode - R	Diode - Rectifier							
V <sub>F</sub>	I <sub>Fnom</sub> = 15 A, T <sub>i</sub> = 25 °C		1,1		V			
V <sub>(TO)</sub>	T <sub>i</sub> = 150 °C		0,8		V			
r <sub>T</sub>	T <sub>i</sub> = 150 °C		20		mΩ			
R <sub>th(j-s)</sub>	per diode		1,5		K/W			
	Temperature Sensor							
R <sub>ts</sub>	3 %, T <sub>r</sub> = 25 (100) °C		1000(1670)		Ω			
Mechanical Data								
w			21,5		g			
M <sub>s</sub>	Mounting torque	2		2,5	Nm			

# SKIIP 02NEB066V3



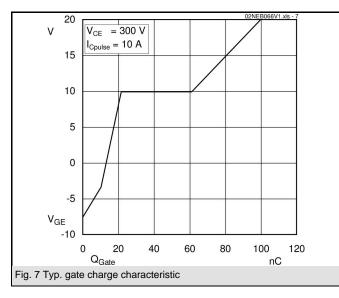


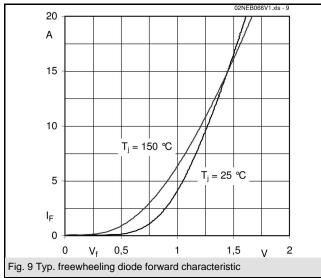


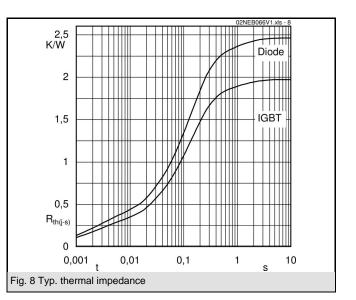


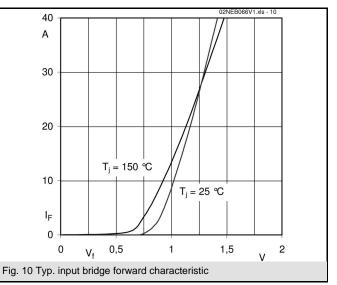
© by SEMIKRON

## SKiiP 02NEB066V3



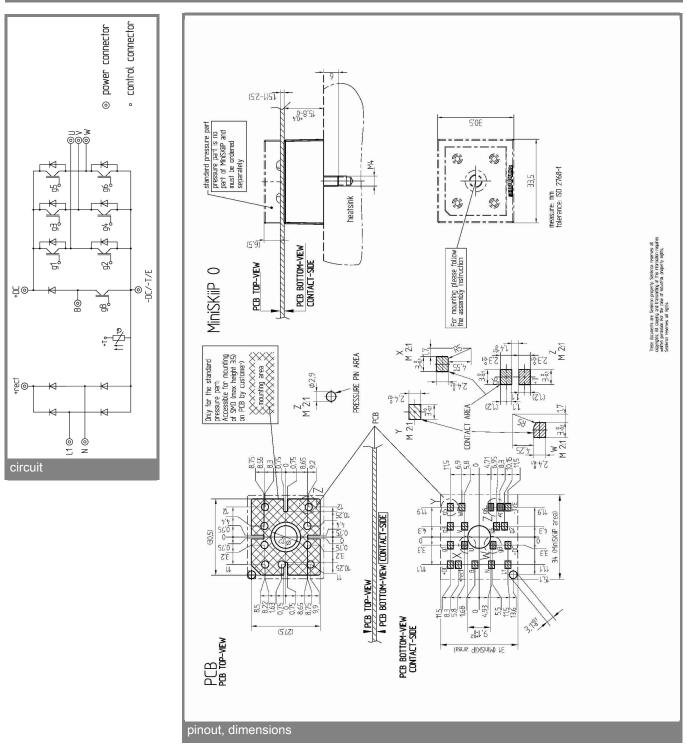






© by SEMIKRON

## SKiiP 02NEB066V3



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.

Downloaded from Elcodis.com electronic components distributor