

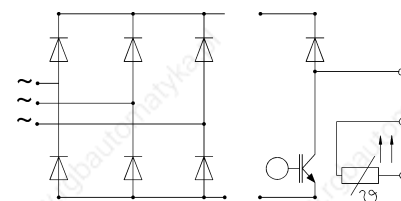
## SKiiP 82 ANB 15 T1

Absolute Maximum Ratings			
Symbol	Conditions <sup>1)</sup>	Values	Units
Bridge Rectifier			
V <sub>RRM</sub>		1500	V
I <sub>D</sub>	T <sub>heatsink</sub> = 80 °C	100 <sup>3)</sup>	A
I <sub>FSM</sub>	t <sub>p</sub> = 10 ms; sin. 180 °, T <sub>j</sub> = 25 °C	1000	A
I <sup>2</sup> t	t <sub>p</sub> = 10 ms; sin. 180 °, T <sub>j</sub> = 25 °C	5000	A²s
IGBT Chopper			
V <sub>CES</sub>		1200	V
V <sub>GES</sub>		± 20	V
I <sub>C</sub>	T <sub>heatsink</sub> = 25 / 80 °C	58 / 40	A
I <sub>CM</sub>	t <sub>p</sub> < 1 ms; T <sub>heatsink</sub> = 25 / 80 °C	116 / 80	A
Freewheeling Diode <sup>2)</sup>			
V <sub>RRM</sub>		1200	V
I <sub>F</sub>	T <sub>heatsink</sub> = 25 / 80 °C	38 / 26	A
I <sub>FM</sub>	t <sub>p</sub> < 1 ms; T <sub>heatsink</sub> = 25 / 80 °C	76 / 52	A
T <sub>j</sub>	Diode & IGBT	– 40 ... + 150	°C
T <sub>stg</sub>		– 40 ... + 125	°C
V <sub>isol</sub>	AC, 1 min.	2500	V

Characteristics					
Symbol	Conditions <sup>1)</sup>	min.	typ.	max.	Units
Diode - Rectifier					
V <sub>F</sub>	I <sub>F</sub> = 75 A      T <sub>j</sub> = 125 °C	–	1,15	–	V
V <sub>TO</sub>	T <sub>j</sub> = 125 °C	–	0,8	–	V
r <sub>T</sub>	T <sub>j</sub> = 125 °C	–	4,5	–	mΩ
R <sub>thjh</sub>	per diode	–	–	1,0	K/W
IGBT - Chopper					
V <sub>CEsat</sub>	I <sub>C</sub> = 50 A      T <sub>j</sub> = 25 (125) °C	–	2,5(3,1)	3,0(3,7)	V
t <sub>d(on)</sub>	} V <sub>CC</sub> = 600 V; V <sub>GE</sub> = ± 15 V I <sub>C</sub> = 50 A; T <sub>j</sub> = 125 °C R <sub>gon</sub> = R <sub>goff</sub> = 22 Ω inductive load	–	44	–	ns
t <sub>r</sub>		–	56	–	ns
t <sub>d(off)</sub>		–	380	–	ns
t <sub>f</sub>		–	70	–	ns
E <sub>on</sub> + E <sub>off</sub>		–	13	–	mJ
C <sub>ies</sub>	V <sub>CE</sub> = 25 V; V <sub>GE</sub> = 0 V, 1 MHz	–	3,3	–	nF
R <sub>thjh</sub>	per IGBT	–	–	0,5	K/W
Diode <sup>2)</sup> - Chopper					
V <sub>F</sub>	I <sub>F</sub> = 25 A      T <sub>j</sub> = 25 (125) °C	–	2,0(1,8)	2,5(2,3)	V
V <sub>TO</sub>	T <sub>j</sub> = 125 °C	–	1,0	1,2	V
r <sub>T</sub>	T <sub>j</sub> = 125 °C	–	32	44	mΩ
I <sub>RRM</sub>	} I <sub>F</sub> = 25 A; V <sub>R</sub> = – 600 V di <sub>F</sub> /dt = – 500 A/μs V <sub>GE</sub> = 0 V, T <sub>j</sub> = 125 °C	–	25	–	A
Q <sub>rr</sub>		–	4,5	–	μC
E <sub>off</sub>		–	1,0	–	mJ
R <sub>thjh</sub>		per diode	–	–	1,2
Temperature Sensor					
R <sub>TS</sub>	T = 25 / 100 °C	1000 / 1670			Ω
Mechanical Data					
M <sub>1</sub>	mounting torque	2,5	–	3,5	Nm
Case	mechanical outline see pages B 16 –13 and B 16 – 14	M8a			

## MiniSKiiP 8 SEMIKRON integrated intelligent Power SKiiP 82 ANB 15 T1 3-phase bridge rectifier + IGBT braking chopper

Case M8a



UL recognized file no. E63532

- specification of temperature sensor see part A of data book '99
- common characteristics see page B 16 – 4 of data book '99

<sup>1)</sup>  $T_{heatsink} = 25\text{ °C}$ , unless otherwise specified

<sup>2)</sup> CAL = Controlled Axial Lifetime Technology (soft and fast recovery)

<sup>3)</sup> limited by spring contact

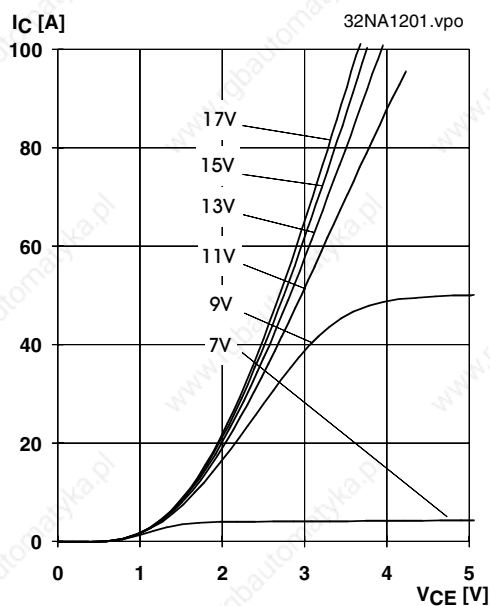


Fig. 1 Typ. output characteristic,  $t_p = 80 \mu s$ ;  $25^\circ C$

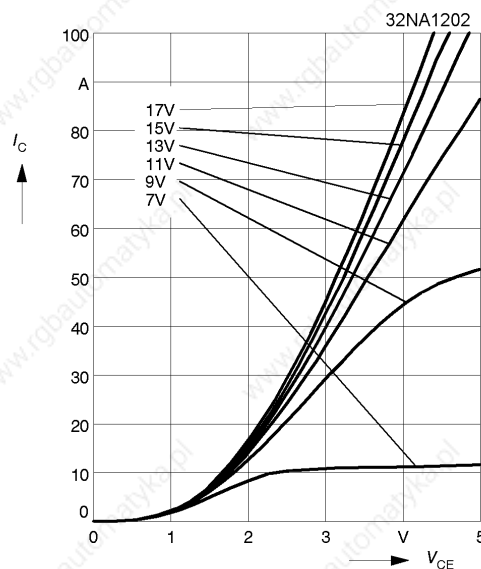


Fig. 2 Typ. output characteristic,  $t_p = 80 \mu s$ ;  $125^\circ C$

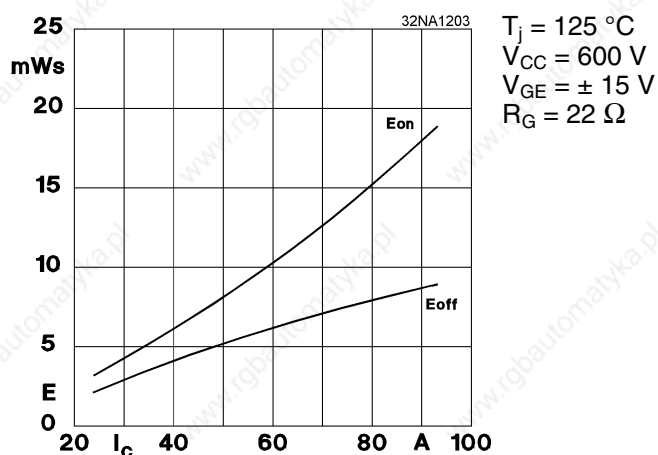


Fig. 3 Turn-on /-off energy =  $f(I_C)$

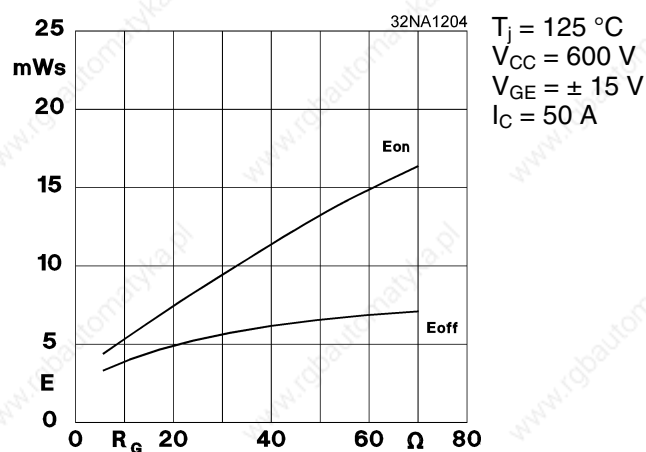


Fig. 4 Turn-on /-off energy =  $f(R_G)$

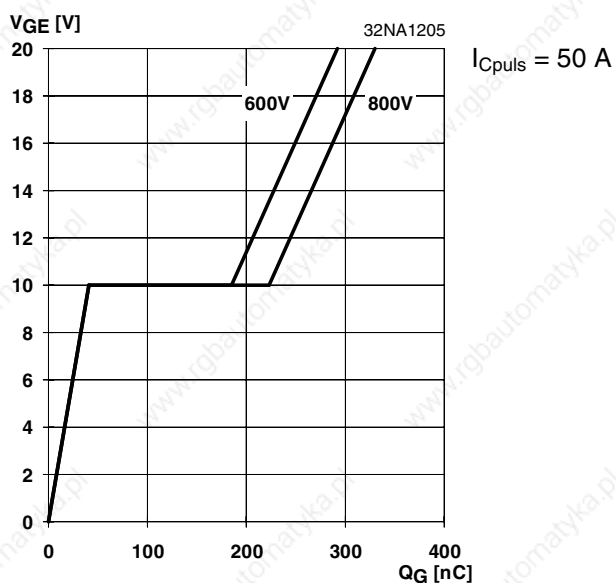


Fig. 5 Typ. gate charge characteristic

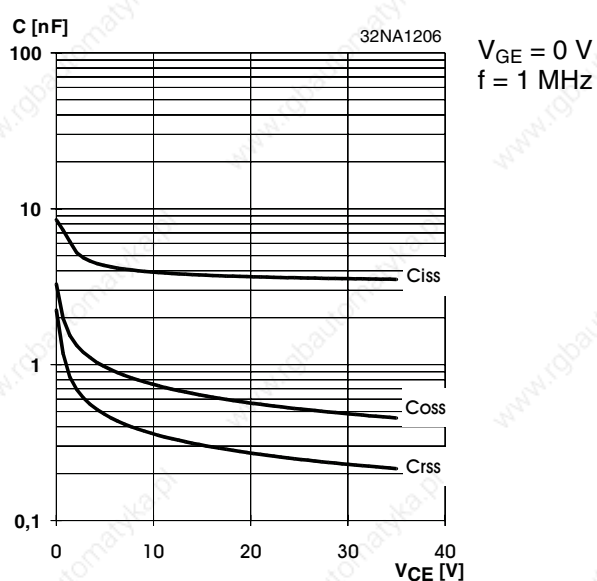


Fig. 6 Typ. capacitances vs.  $V_{CE}$