

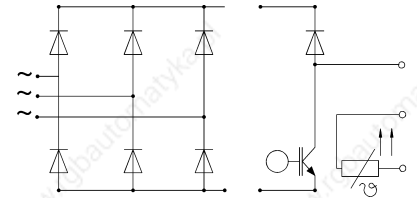
SKiiP 82 ANB 15 T1

Absolute Maximum Ratings		Values	Units
Symbol	Conditions ¹⁾		
Bridge Rectifier			
V_{RRM}		1500	V
I_D	$T_{heatsink} = 80\text{ °C}$	100 ³⁾	A
I_{FSM}	$t_p = 10\text{ ms}; \sin. 180\text{ °}, T_j = 25\text{ °C}$	1000	A
I^2t	$t_p = 10\text{ ms}; \sin. 180\text{ °}, T_j = 25\text{ °C}$	5000	A ² s
IGBT Chopper			
V_{CES}		1200	V
V_{GES}		± 20	V
I_C	$T_{heatsink} = 25 / 80\text{ °C}$	58 / 40	A
I_{CM}	$t_p < 1\text{ ms}; T_{heatsink} = 25 / 80\text{ °C}$	116 / 80	A
Freewheeling Diode ²⁾			
V_{RRM}		1200	V
I_F	$T_{heatsink} = 25 / 80\text{ °C}$	38 / 26	A
I_{FM}	$t_p < 1\text{ ms}; T_{heatsink} = 25 / 80\text{ °C}$	76 / 52	A
T_j	Diode & IGBT	-40 ... +150	°C
T_{stg}		-40 ... +125	°C
V_{isol}	AC, 1 min.	2500	V

Characteristics		min.	typ.	max.	Units	
Symbol	Conditions ¹⁾					
Diode - Rectifier						
V_F	$I_F = 75\text{ A}, T_j = 125\text{ °C}$	-	1,15	-	V	
V_{TO}	$T_j = 125\text{ °C}$	-	0,8	-	V	
r_T	$T_j = 125\text{ °C}$	-	4,5	-	mΩ	
R_{thjh}	per diode	-	-	1,0	K/W	
IGBT - Chopper						
V_{CEsat}	$I_C = 50\text{ A}, T_j = 25 (125)\text{ °C}$	-	2,5(3,1)	3,0(3,7)	V	
$t_{d(on)}$	$V_{CC} = 600\text{ V}; V_{GE} = \pm 15\text{ V}$ $I_C = 50\text{ A}; T_j = 125\text{ °C}$ $R_{gon} = R_{goff} = 22\text{ } \Omega$ inductive load	-	44	-	ns	
t_r		-	56	-	ns	
$t_{d(off)}$		-	380	-	ns	
t_f		-	70	-	ns	
$E_{on} + E_{off}$		-	13	-	mJ	
C_{ies}	$V_{CE} = 25\text{ V}; V_{GE} = 0\text{ V}, 1\text{ MHz}$	-	3,3	-	nF	
R_{thjh}	per IGBT	-	-	0,5	K/W	
Diode ²⁾ - Chopper						
V_F	$I_F = 25\text{ A}, T_j = 25 (125)\text{ °C}$	-	2,0(1,8)	2,5(2,3)	V	
V_{TO}	$T_j = 125\text{ °C}$	-	1,0	1,2	V	
r_T	$T_j = 125\text{ °C}$	-	32	44	mΩ	
I_{RRM}	$I_F = 25\text{ A}; V_R = -600\text{ V}$ $di_F/dt = -500\text{ A}/\mu\text{s}$ $V_{GE} = 0\text{ V}, T_j = 125\text{ °C}$	-	25	-	A	
Q_{rr}		-	4,5	-	μC	
E_{off}		-	1,0	-	mJ	
R_{thjh}		per diode	-	-	1,2	K/W
Temperature Sensor						
R_{TS}	$T = 25 / 100\text{ °C}$		1000 / 1670		Ω	
Mechanical Data						
M_1	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

- ¹⁾ $T_{heatsink} = 25\text{ °C}$, unless otherwise specified
- ²⁾ CAL = Controlled Axial Lifetime Technology (soft and fast recovery)
- ³⁾ limited by spring contact

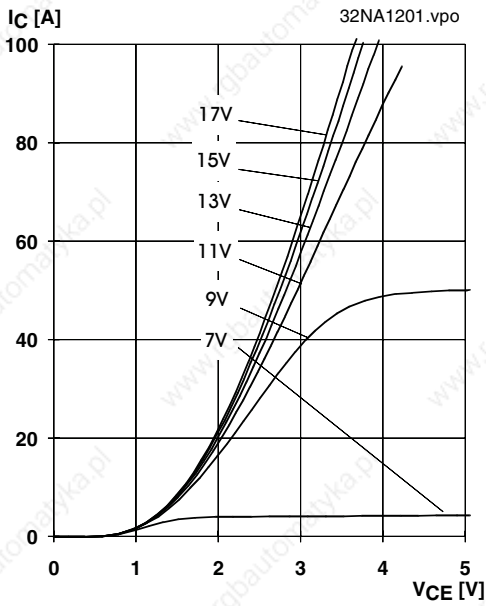


Fig. 1 Typ. output characteristic, $t_p = 80 \mu s$; $25 \text{ }^\circ\text{C}$

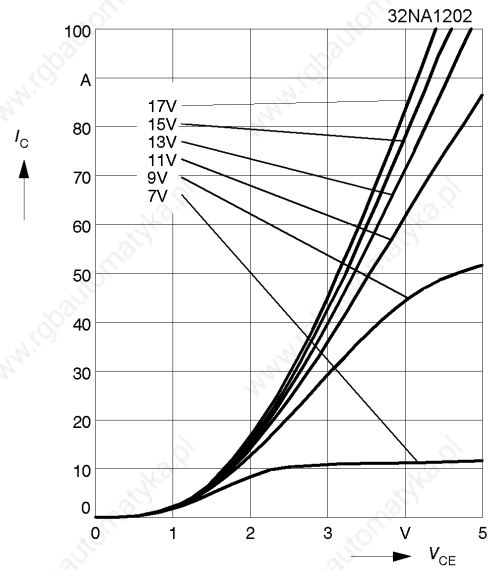


Fig. 2 Typ. output characteristic, $t_p = 80 \mu s$; $125 \text{ }^\circ\text{C}$

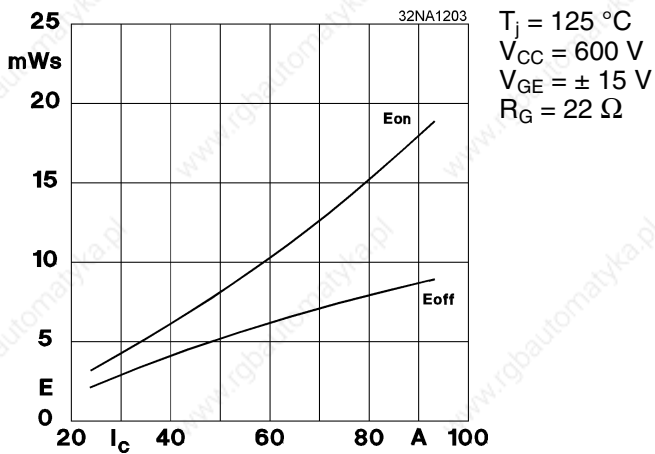


Fig. 3 Turn-on /-off energy = $f(I_C)$

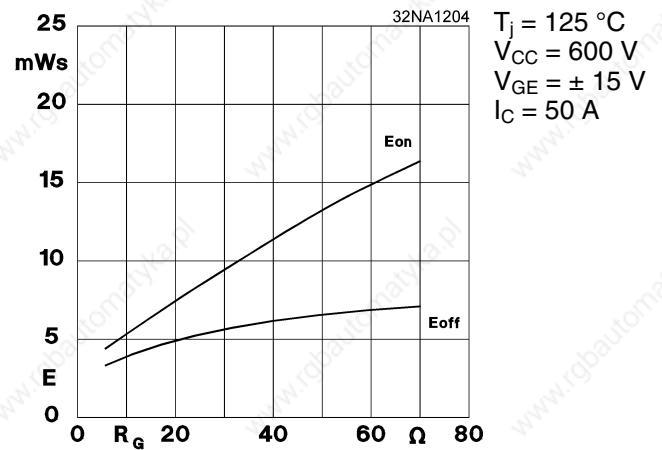


Fig. 4 Turn-on /-off energy = $f(R_G)$

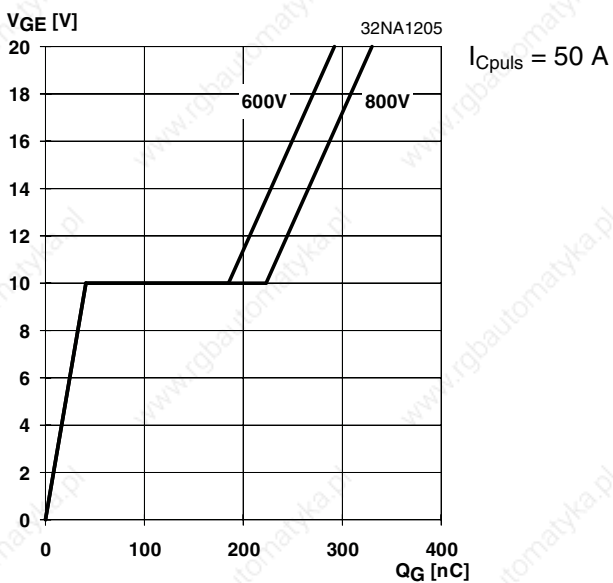


Fig. 5 Typ. gate charge characteristic

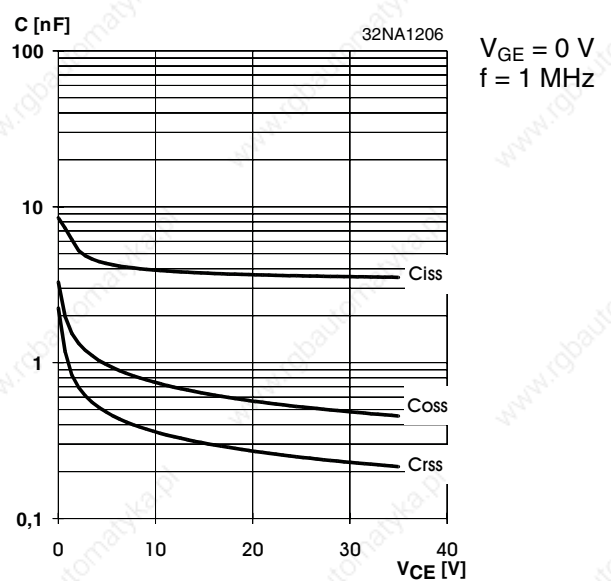


Fig. 6 Typ. capacitances vs. V_{CE}