

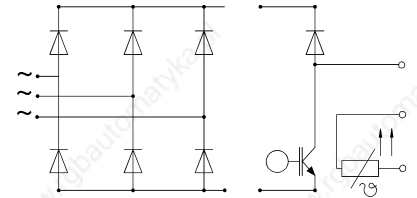
## SKiiP 82 ANB 15 T1

Absolute Maximum Ratings		Values	Units
Symbol	Conditions <sup>1)</sup>		
Bridge Rectifier			
$V_{RRM}$		1500	V
$I_D$	$T_{heatsink} = 80\text{ °C}$	100 <sup>3)</sup>	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 <sup>2</sup> s
IGBT Chopper			
$V_{CES}$		1200	V
$V_{GES}$		$\pm 20$	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 <sup>2)</sup>			
$V_{RRM}$		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 <sup>1)</sup>					
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						
$V_{CEsat}$	$I_C = 50\text{ A}, T_j = 25\text{ (125) °C}$	-	2,5(3,1)	3,0(3,7)	V	
$t_{d(on)}$	$V_{CC} = 600\text{ V}; V_{GE} = \pm 15\text{ V}$ $I_C = 50\text{ A}; T_j = 125\text{ °C}$ $R_{gon} = R_{goff} = 22\text{ Ω}$ 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 <sup>2)</sup> - Chopper						
$V_F$	$I_F = 25\text{ A}, T_j = 25\text{ (125) °C}$	-	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

- <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

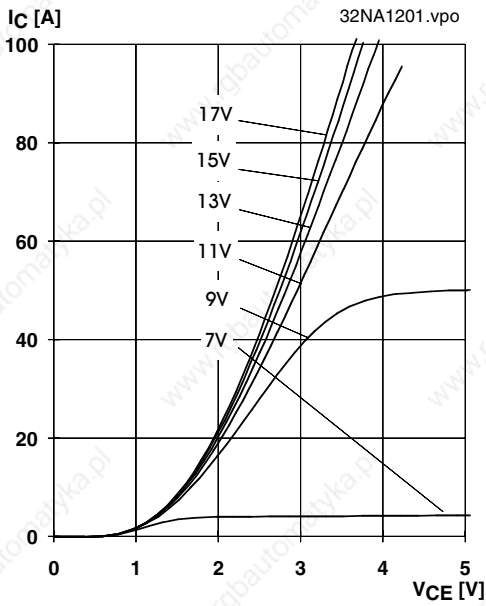


Fig. 1 Typ. output characteristic,  $t_p = 80 \mu s$ ;  $25 \text{ }^\circ\text{C}$

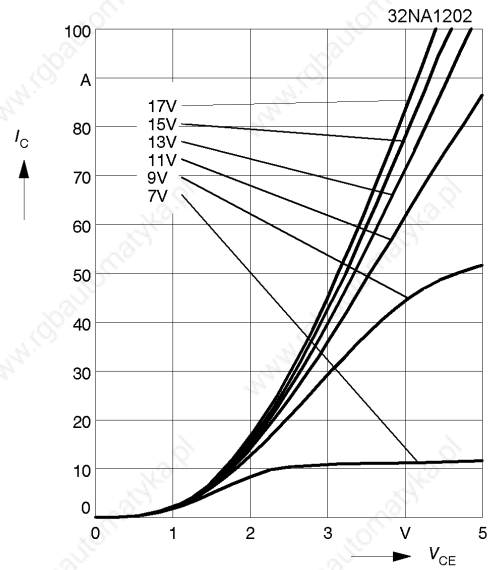


Fig. 2 Typ. output characteristic,  $t_p = 80 \mu s$ ;  $125 \text{ }^\circ\text{C}$

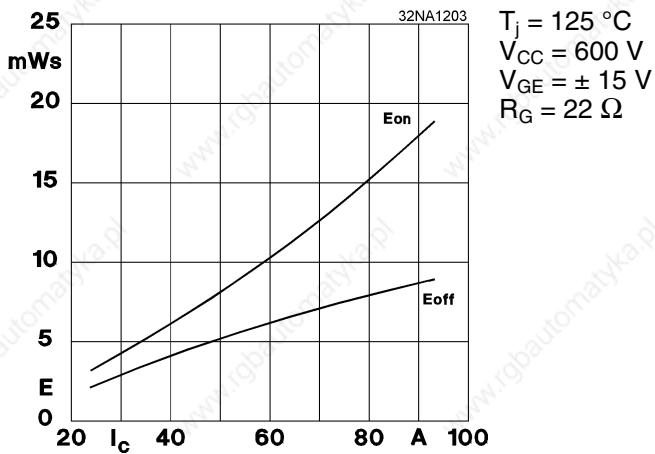


Fig. 3 Turn-on /-off energy =  $f(I_C)$

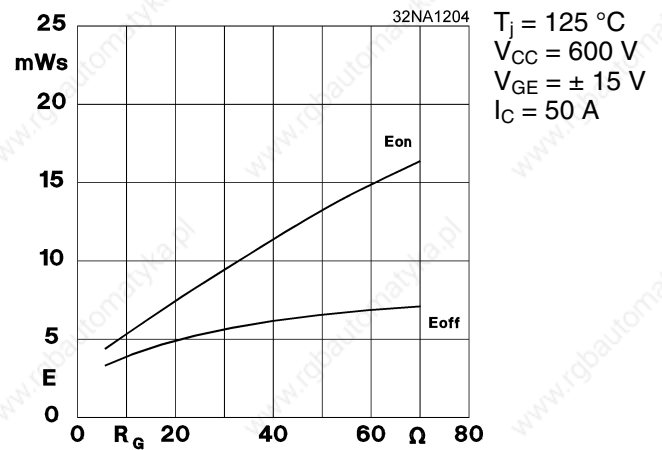


Fig. 4 Turn-on /-off energy =  $f(R_G)$

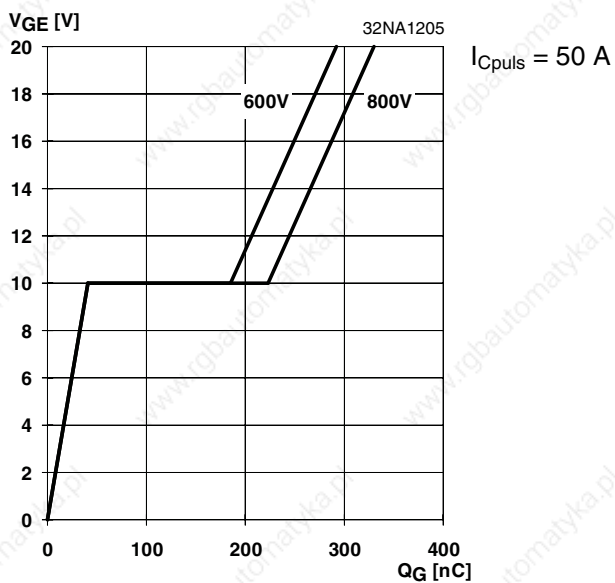


Fig. 5 Typ. gate charge characteristic

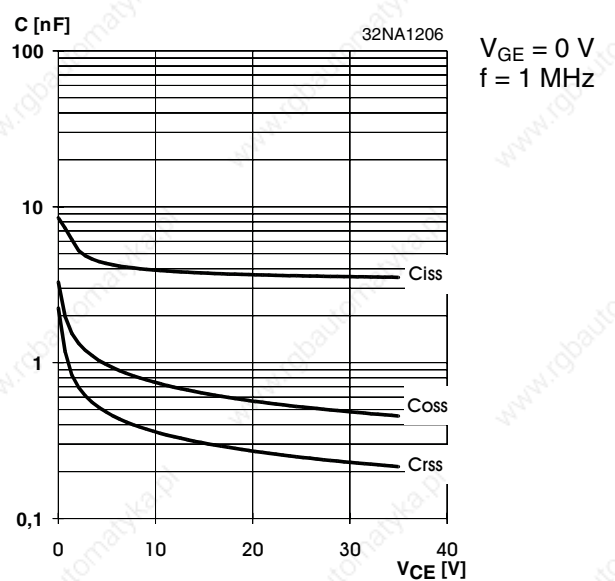


Fig. 6 Typ. capacitances vs.  $V_{CE}$