

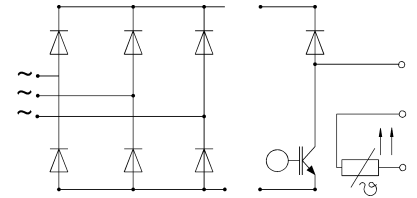
SKiiP 81 ANB 15 T1

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}	$t_p = 10\text{ ms}; \sin. 180^\circ, T_j = 25\text{ °C}$	1000	A
I^2t	$t_p = 10\text{ ms}; \sin. 180^\circ, T_j = 25\text{ °C}$	5000	A ² s
IGBT Chopper			
V_{CES}		1200	V
V_{GES}		± 20	V
I_C	$T_{heatsink} = 25 / 80\text{ °C}$	33 / 22	A
I_{CM}	$t_p < 1\text{ ms}; T_{heatsink} = 25 / 80\text{ °C}$	66 / 44	A
Freewheeling Diode ²⁾			
V_{RRM}		1200	V
I_F	$T_{heatsink} = 25 / 80\text{ °C}$	24 / 17	A
I_{FM}	$t_p < 1\text{ ms}; T_{heatsink} = 25 / 80\text{ °C}$	48 / 34	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}	$I_C = 25\text{ A}; T_j = 25 (125)\text{ °C}$	-	2,5(3,1)	3,0(3,7)	V
$t_{d(on)}$	$V_{CC} = 600\text{ V}; V_{GE} = \pm 15\text{ V}$	-	75	-	ns
t_r	$I_C = 25\text{ A}; T_j = 125\text{ °C}$	-	65	-	ns
$t_{d(off)}$	$R_{gon} = R_{goff} = 47\text{ } \Omega$	-	400	-	ns
t_f	inductive load	-	50	-	ns
$E_{on} + E_{off}$		-	6,2	-	mJ
C_{ies}	$V_{CE} = 25\text{ V}; V_{GE} = 0\text{ V}, 1\text{ MHz}$	-	1,65	-	nF
R_{thjh}	per IGBT	-	-	1,0	K/W
Diode ²⁾ - Chopper					
$V_F = V_{EC}$	$I_F = 15\text{ A}; T_j = 25 (125)\text{ °C}$	-	2,0(1,8)	2,5(2,3)	V
V_{TO}	$T_j = 125\text{ °C}$	-	1,0	1,2	V
r_T	$T_j = 125\text{ °C}$	-	53	73	mΩ
I_{RRM}	$I_F = 15\text{ A}; V_R = -600\text{ V}$	-	16	-	A
Q_{rr}	$di_F/dt = -400\text{ A}/\mu\text{s}$	-	2,7	-	μC
E_{off}	$V_{GE} = 0\text{ V}, T_j = 125\text{ °C}$	-	0,6	-	mJ
R_{thjh}	per diode	-	-	1,7	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 81 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

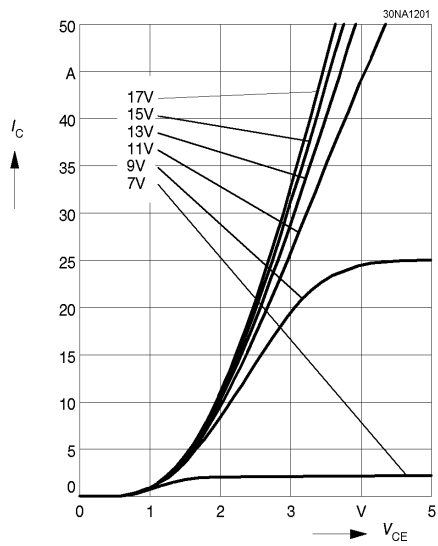


Fig. 1 Typ. output characteristic, $t_p = 80 \mu s$; $25 \text{ }^\circ\text{C}$

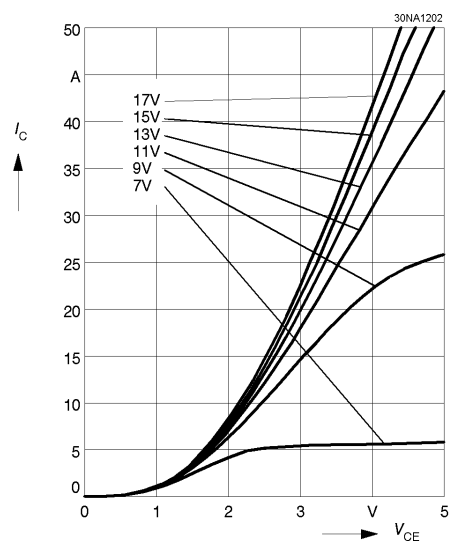


Fig. 2 Typ. output characteristic, $t_p = 80 \mu s$; $125 \text{ }^\circ\text{C}$

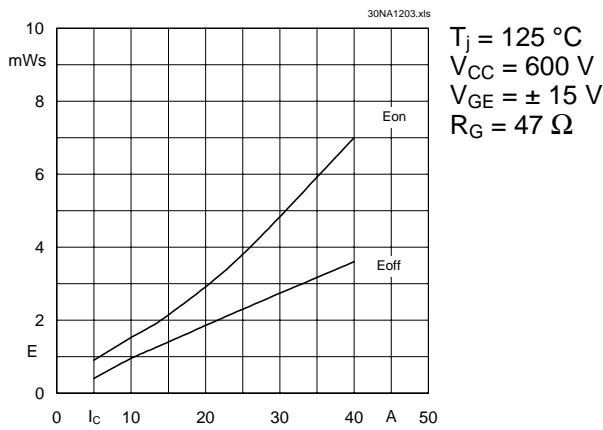


Fig. 3 Turn-on /-off energy = $f(I_C)$

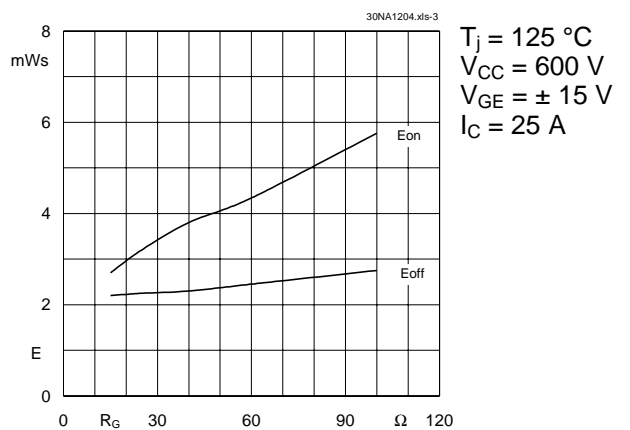


Fig. 4 Turn-on /-off energy = $f(R_G)$

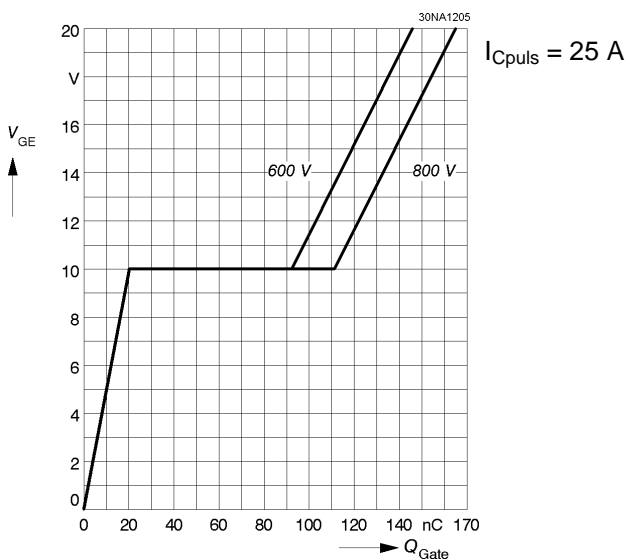


Fig. 5 Typ. gate charge characteristic

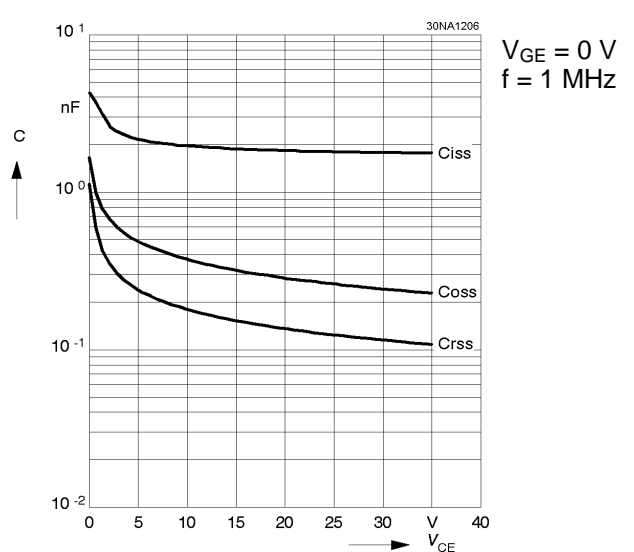


Fig. 6 Typ. capacitances vs. V_{CE}