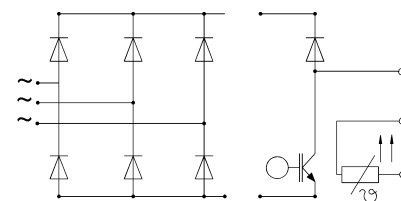


SKiiP 83 ANB 15 T1

MiniSKiiP 8 SEMIKRON integrated intelligent Power SKiiP 83 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⁾ $T_{\text{heatsink}} = 25\text{ °C}$, unless otherwise specified
²⁾ CAL = Controlled Axial Lifetime Technology (soft and fast recovery)
³⁾ limited by spring contact

Absolute Maximum Ratings			
Symbol	Conditions ¹⁾	Values	Units
Bridge Rectifier			
V _{RRM}	T _{heatsink} = 80 °C	1500	V
I _D		100 ³⁾	A
I _{FSM}		1600	A
I _{2t}		12000	A²s
IGBT Chopper			
V _{CES}	T _{heatsink} = 25 / 80 °C	1200	V
V _{GES}		± 20	V
I _C		95 / 65	A
I _{CM}		190 / 130	A
Freewheeling Diode ²⁾			
V _{RRM}	T _{heatsink} = 25 / 80 °C	1200	V
I _F		38 / 26	A
I _{FM}		76 / 52	A
T _j	Diode & IGBT	– 40 ... + 150	°C
T _{stg}		– 40 ... + 125	°C
V _{isol}	AC, 1 min.	2500	V

Characteristics					
Symbol	Conditions ¹⁾	min.	typ.	max.	Units
Diode - Rectifier					
V _F	I _F = 100 A T _j = 125 °C	–	1,15	–	V
V _{TO}	T _j = 125 °C	–	0,8	–	V
r _T	T _j = 125 °C	–	3,5	–	mΩ
R _{thjh}	per diode	–	–	0,7	K/W
IGBT - Chopper					
V _{CEsat}	I _C = 75 A T _j = 25 (125) °C	–	2,5(3,1)	3,0(3,7)	V
t _{d(on)}	} V _{CC} = 600 V; V _{GE} = ± 15 V I _C = 75 A; T _j = 125 °C R _{gon} = R _{goff} = 15 Ω inductive load	–	35	–	ns
t _r		–	70	–	ns
t _{d(off)}		–	450	–	ns
t _f		–	70	–	ns
E _{on} + E _{off}		–	18	–	mJ
C _{ies}	V _{CE} = 25 V; V _{GE} = 0 V, 1 MHz	–	5,0	–	nF
R _{thjh}	per IGBT	–	–	0,35	K/W
Diode ²⁾ - Chopper					
V _F = V _{EC}	I _F = 25 A T _j = 25 (125) °C	–	2,0(1,8)	2,5(2,3)	V
V _{TO}	T _j = 125 °C	–	1,0	1,2	V
r _T	T _j = 125 °C	–	32	44	mΩ
I _{RRM}	} I _F = 25 A; V _R = – 600 V di _F /dt = – 500 A/μs V _{GE} = 0 V, T _j = 125 °C	–	25	–	A
Q _{rr}		–	4,5	–	μC
E _{off}		–	1,0	–	mJ
R _{thjh}		per diode	–	–	1,2
Temperature Sensor					
R _{TS}	T = 25 / 100 °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		

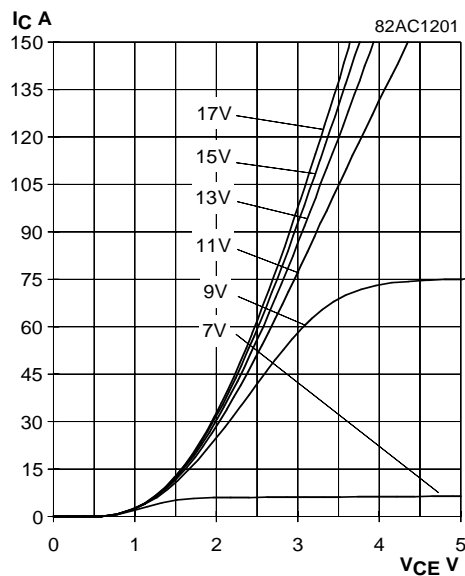


Fig. 1 Typ. output characteristic, $t_p = 80 \mu s$; $25^\circ C$

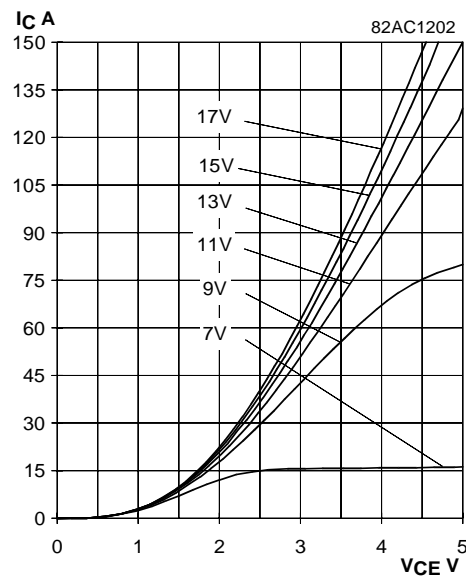


Fig. 2 Typ. output characteristic, $t_p = 80 \mu s$; $125^\circ C$

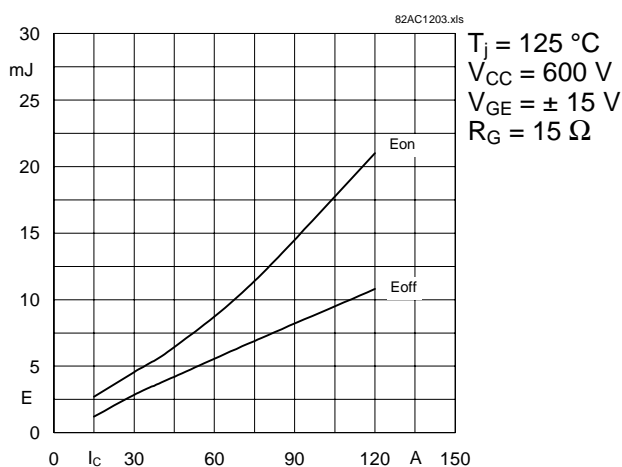


Fig. 3 Turn-on /-off energy = $f(I_C)$

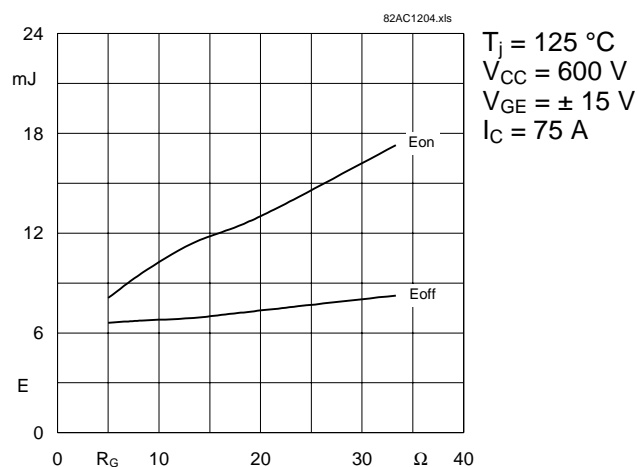


Fig. 4 Turn-on /-off energy = $f(R_G)$

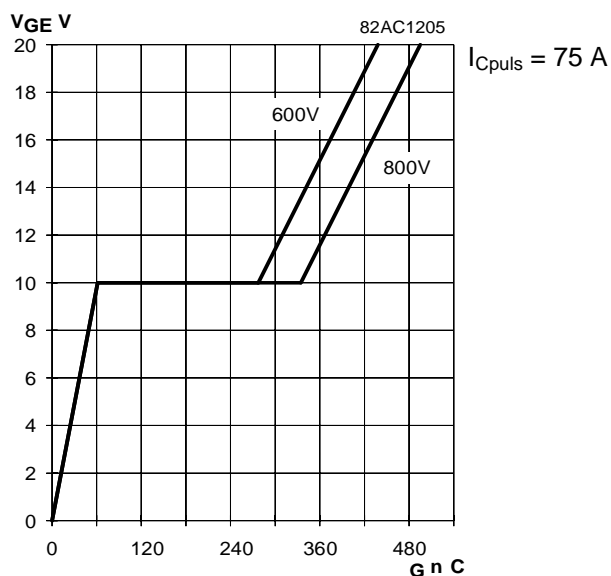


Fig. 5 Typ. gate charge characteristic

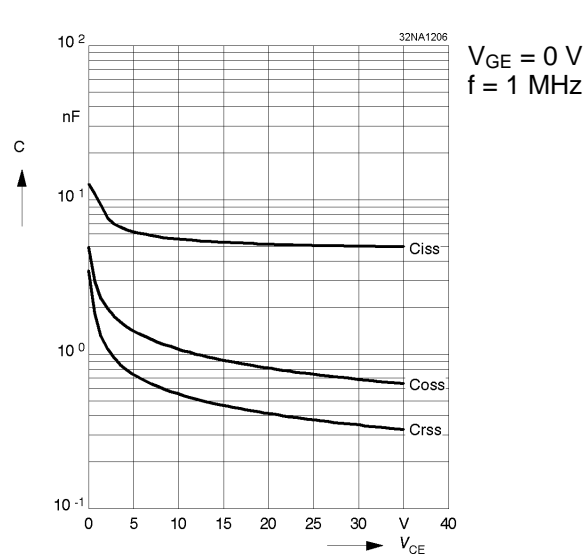


Fig. 6 Typ. capacitances vs. V_{CE}