

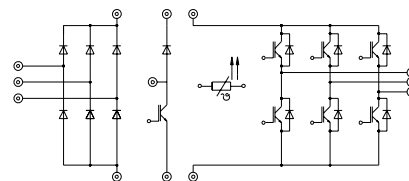
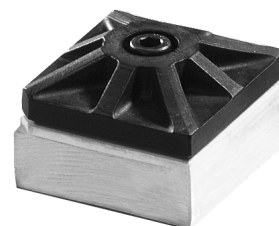
Absolute Maximum Ratings			
Symbol	Conditions ¹⁾	Values	Units
Inverter & Chopper			
V _{CES}		600	V
V _{GES}		± 20	V
I _C	T _{heatsink} = 25 / 80 °C	17 / 12	A
I _{CM}	t _p < 1 ms; T _{heatsink} = 25 / 80 °C	34 / 24	A
I _F = -I _C	T _{heatsink} = 25 / 80 °C	20 / 15	A
I _{FM} = -I _{CM}	t _p < 1 ms; T _{heatsink} = 25 / 80 °C	40 / 30	A
Bridge Rectifier			
V _{RRM}		800	V
I _D	T _{heatsink} = 80 °C	12 ³⁾	A
I _{FSM}	t _p = 10 ms; sin. 180 °, T _j = 25 °C	370	A
I ² t	t _p = 10 ms; sin. 180 °, T _j = 25 °C	680	A ² s
T _j		- 40 ... + 150	°C
T _{stg}		- 40 ... + 125	°C
V _{isol}	AC, 1 min.	2500	V

Characteristics					
Symbol	Conditions ¹⁾	min.	typ.	max.	Units
IGBT - Inverter & Chopper					
V _{CEsat}	I _C = 10 A T _j = 25 (125) °C	—	2,1(2,4)	2,6(2,9)	V
t _{d(on)}	} V _{CC} = 300 V; V _{GE} = ± 15 V I _C = 10 A; T _j = 125 °C R _{gon} = R _{goff} = 100 Ω inductive load	—	55	—	ns
t _r		—	40	—	ns
t _{d(off)}		—	270	—	ns
t _f		—	25	—	ns
E _{on} + E _{off}		—	1,0	—	mJ
C _{ies}	V _{CE} = 25 V; V _{GE} = 0 V, 1 MHz	—	0,57	—	nF
R _{thjh}	per IGBT	—	—	2,3	K/W
Diode ²⁾ - Inverter & Chopper					
V _F = V _{EC}	I _F = 10 A T _j = 25 (125) °C	—	1,45(1,4)	1,7(1,7)	V
V _{TO}	T _j = 125 °C	—	0,85	0,9	V
r _T	T _j = 125 °C	—	55	80	mΩ
I _{RRM}	} I _F = 10 A, V _R = − 300 V di _F /dt = − 200 A/μs V _{GE} = 0 V, T _j = 125 °C	—	6,5	—	A
Q _{rr}		—	1	—	μC
E _{off}		—	0,1	—	mJ
R _{thjh}		per diode	—	—	2,7
Diode - Rectifier					
V _F	I _F = 25 A T _j = 25 °C	—	1,2	—	V
R _{thjh}	per diode	—	—	1,7	K/W
Temperature Sensor					
R _{TS}	T = 25 / 100 °C	1000 / 1670			Ω
Mechanical Data					
M ₁	Mounting torque	2	—	2,5	Nm
Case			M1		

MiniSKiiP 1 SEMIKRON integrated intelligent Power SKiiP 11 NAB 063 T1

**3-phase bridge rectifier +
braking chopper +
3-phase bridge inverter**

Case M1



UL recognized file no. E63532

- fast NPT IGBTs

¹⁾ $T_{heatsink} = 25 \text{ }^{\circ}\text{C}$, unless otherwise specified

²⁾ CAL = Controlled Axial Lifetime Technology (soft and fast recovery)

³⁾ Limited by spring contact

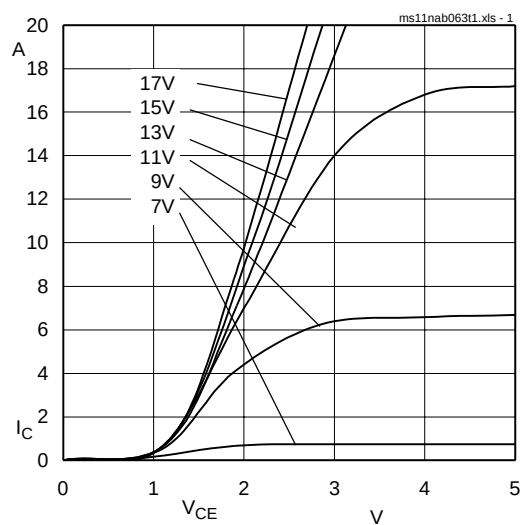


Fig. 1 Typ. output characteristic, t_p = 80 μs; 25 °C

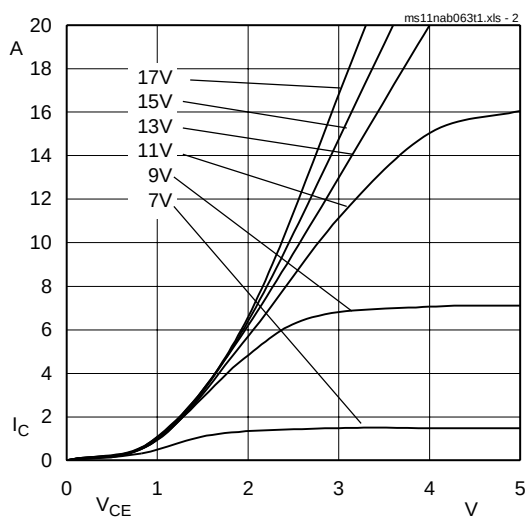


Fig. 2 Typ. output characteristic, t_p = 80 μs; 125 °C

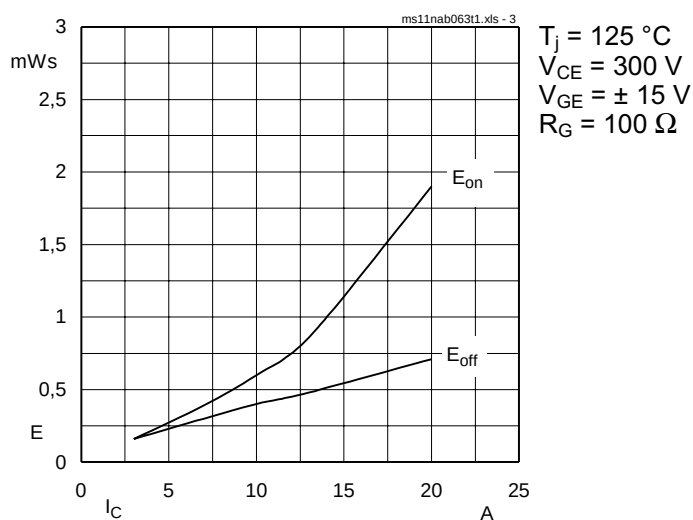


Fig. 3 Turn-on /-off energy = f (I_C)

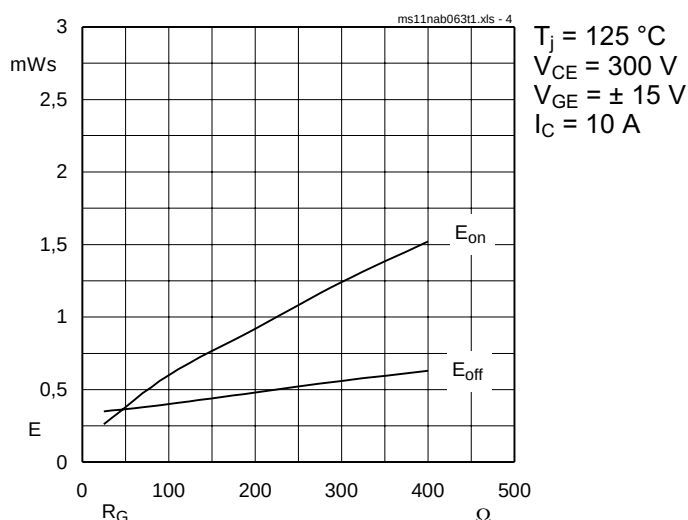


Fig. 4 Turn-on /-off energy = f (R_G)

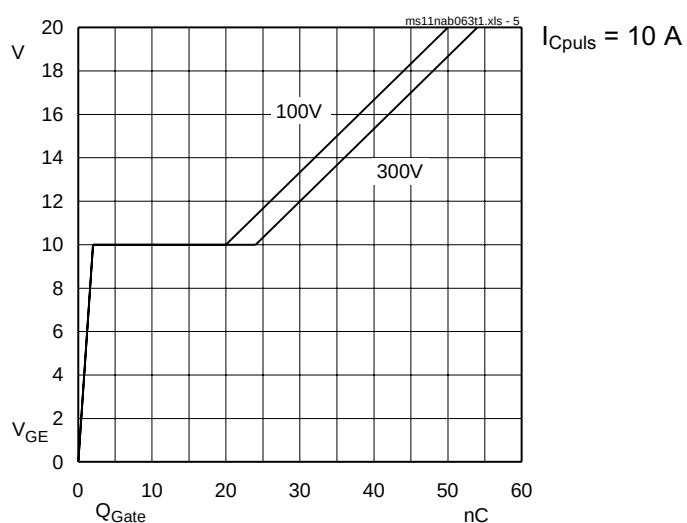


Fig. 5 Typ. gate charge characteristic

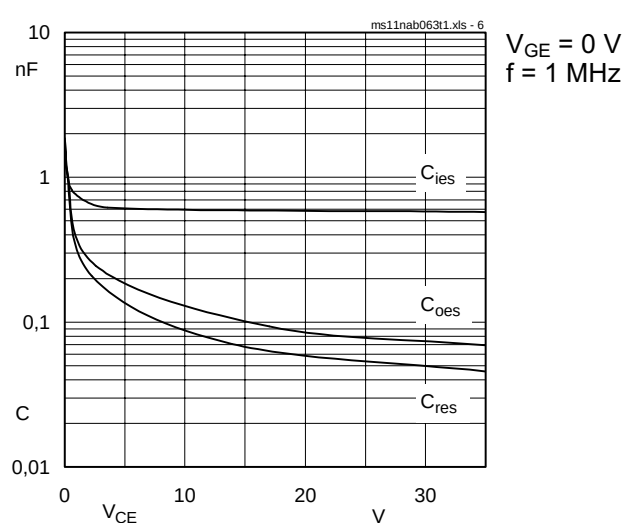


Fig. 6 Typ. capacitances vs. V_{CE}

2. Common characteristics of MiniSKiiP

MiniSKiiP 600 V

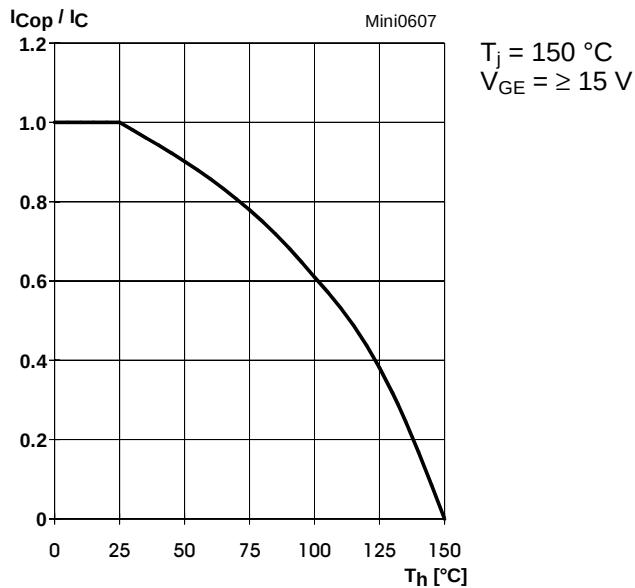


Fig. 7 Rated current of the IGBT $I_{Cop} / I_C = f(T_h)$

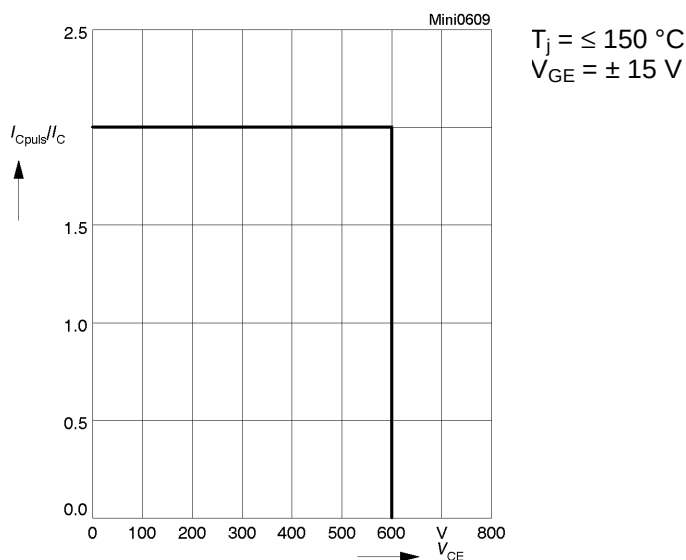


Fig. 9 Turn-off safe operating area (RBSOA) of the IGBT

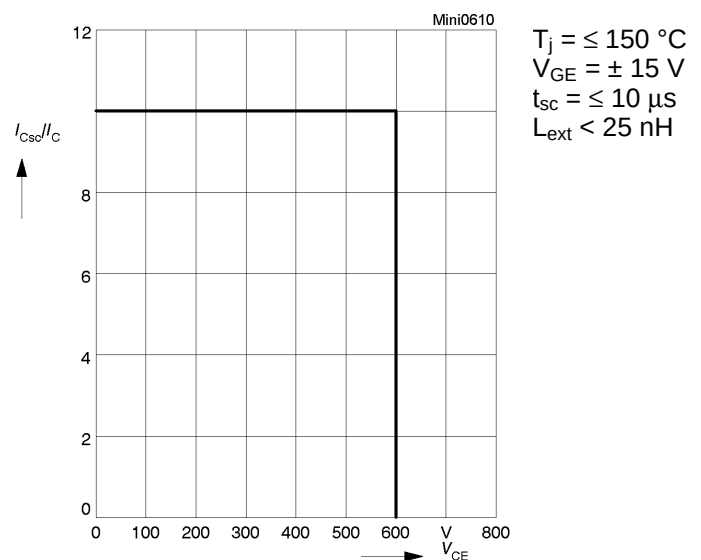


Fig. 10 Safe operating area at short circuit of the IGBT

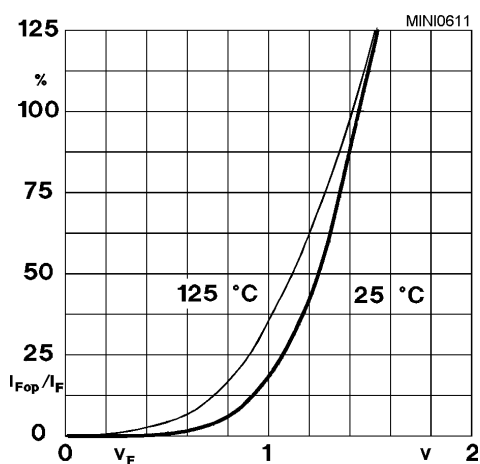


Fig. 11 Typ. freewheeling diode forward characteristic

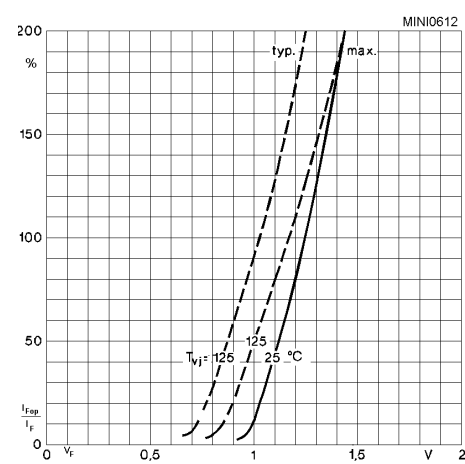
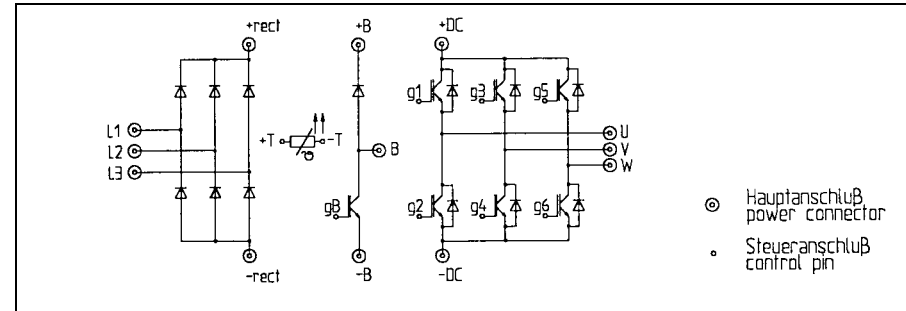


Fig. 12 Forward characteristic of the input bridge diode

MiniSKiiP 1

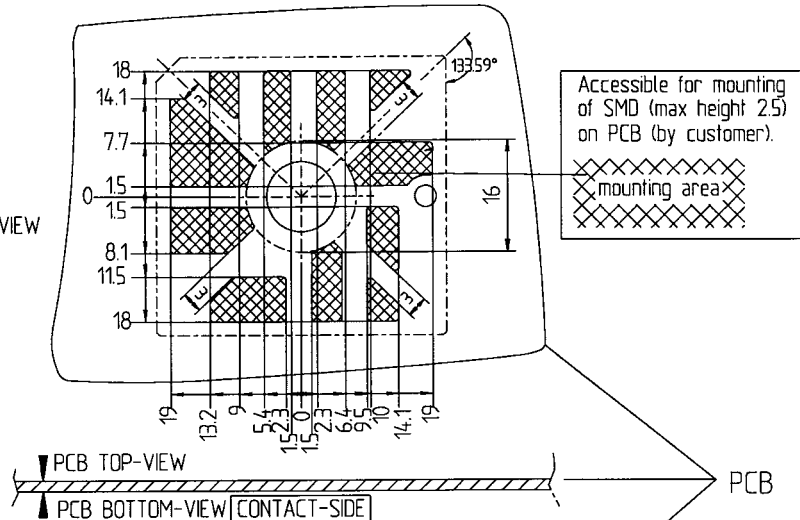
SKiiP 10 NAB 063 T1

SKiiP 11 NAB 063 T1



PCB

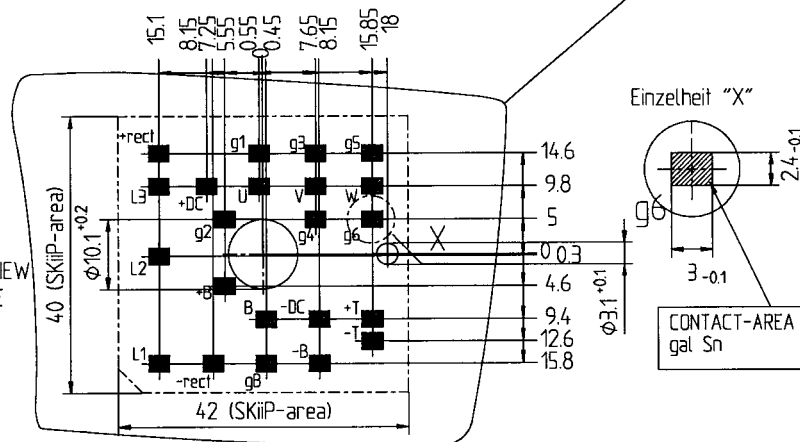
PCB TOP-VIEW



PCB TOP-VIEW

PCB BOTTOM-VIEW CONTACT-SIDE

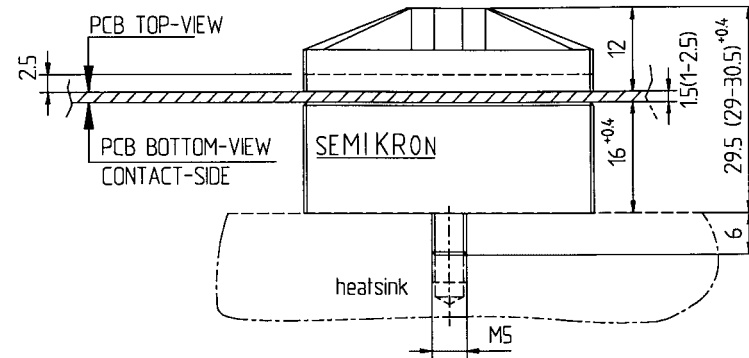
PCB

PCB BOTTOM-VIEW
CONTACT-SIDE

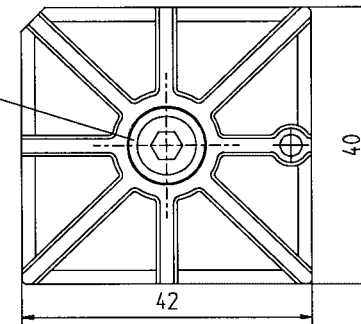
Einzelheit "X"

CONTACT-AREA
gal Sn

Mini-SKiiP 1



Bitte beachten Sie die
Montagevorschrift
For mounting please follow
the assembly instruction



Tolerance: ISO 2768-f