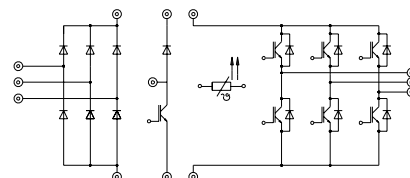


Absolute Maximum Ratings			
Symbol	Conditions ¹⁾	Values	Units
Inverter			
V _{CES}		1200	V
V _{GES}		± 20	V
I _C	T _{heatsink} = 25 / 80 °C	65 / 45	A
I _{CM}	t _p < 1 ms; T _{heatsink} = 25 / 80 °C	130 / 90	A
I _F = -I _C	T _{heatsink} = 25 / 80 °C	60 / 40	A
I _{FM} = -I _{CM}	t _p < 1 ms; T _{heatsink} = 25 / 80 °C	120 / 80	A
Bridge Rectifier			
V _{RRM}		1500	V
I _D	T _{heatsink} = 80 °C	35	A
I _{FSM}	t _p = 10 ms; sin. 180 °, T _j = 25 °C	700	A
I ² t	t _p = 10 ms; sin. 180 °, T _j = 25 °C	2400	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					
V _{CEsat}	I _C = 50 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 = 50 A; T _j = 125 °C R _{gon} = R _{goff} = 22 Ω inductive load	—	44	100	ns
t _r		—	56	100	ns
t _{d(off)}		—	380	500	ns
t _f		—	70	100	ns
E _{on} + E _{off}		—	13	—	mJ
C _{ies}	V _{CE} = 25 V; V _{GE} = 0 V, 1 MHz	—	3,3	—	nF
R _{thjh}	per IGBT	—	—	0,5	K/W
IGBT - Chopper *					
V _{CEsat}	I _C = 25 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 = 25 A; T _j = 125 °C R _{gon} = R _{goff} = 47 Ω inductive load	—	75	150	ns
t _r		—	65	130	ns
t _{d(off)}		—	400	600	ns
t _f		—	50	100	ns
E _{on} + E _{off}		—	6,2	—	mJ
C _{ies}	V _{CE} = 25 V; V _{GE} = 0 V, 1 MHz	—	1,65	—	nF
R _{thjh}	per IGBT	—	—	1,0	K/W
Diode ²⁾ - Inverter & Chopper					
V _F = V _{EC}	I _F = 50 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	—	16	22	mΩ
I _{RRM}	} I _F = 50 A, V _R = − 600 V di _F /dt = − 800 A/μs V _{GE} = 0 V, T _j = 125 °C	—	40	—	A
Q _{rr}		—	8,0	—	μC
E _{off}		—	2,0	—	mJ
R _{thjh}	per diode	—	—	1,0	K/W
Diode - Rectifier					
V _F	I _F = 35 A T _j = 25 °C	—	1,2	—	V
R _{thjh}	per diode	—	—	1,6	K/W
Temperature Sensor					
R _{TS}	T = 25 / 100 °C		1000 / 1670		Ω
Mechanical Data					
M ₁	Mounting torque	2	—	2,5	Nm
Case			M3		

MiniSKiiP 3 SEMIKRON integrated intelligent Power SKiiP 32 NAB 12 T1 3-phase bridge rectifier + braking chopper 3-phase bridge inverter

Case M3



UL recognized file no. E63532

Options

- also available with powerful chopper. For characteristics please refer to Inverter IGBT

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

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

* For diagrams of the Chopper IGBT please refer to SKiiP 30 NAB 12 T10

This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.

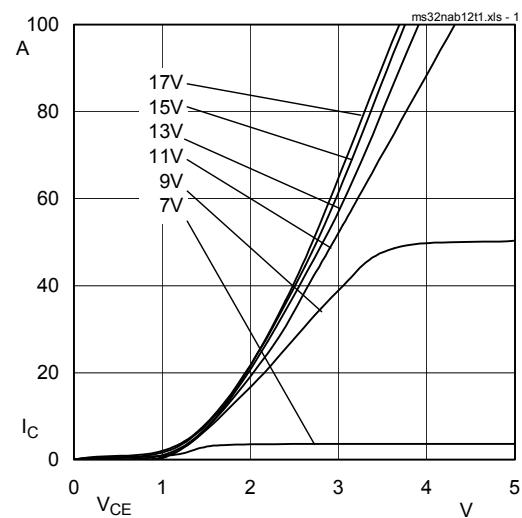


Fig. 1 Typ. output characteristic, t_p = 80 μs; 25 °C

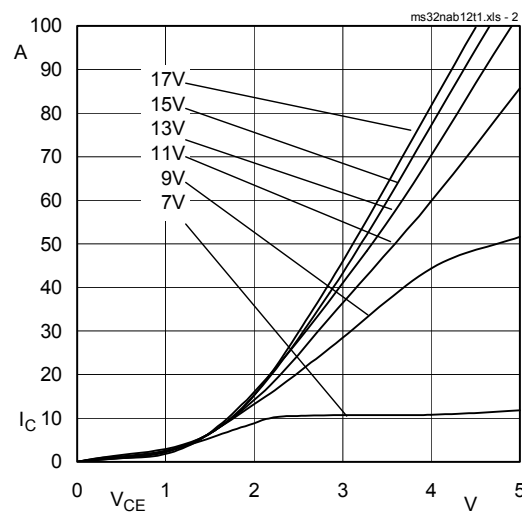


Fig. 2 Typ. output characteristic, t_p = 80 μs; 125 °C

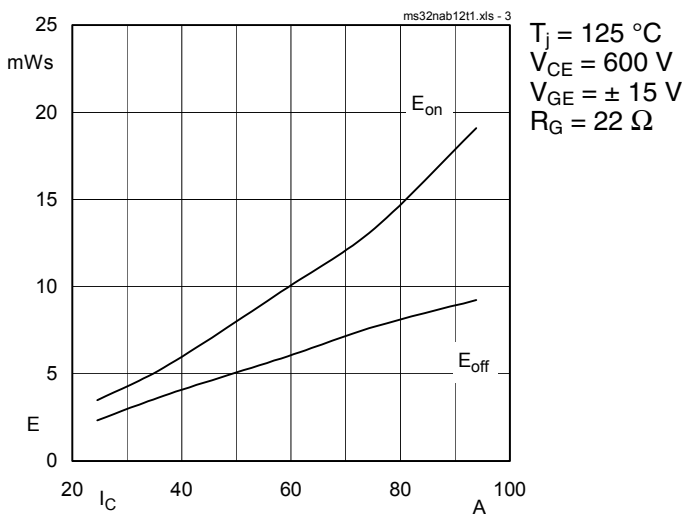


Fig. 3 Turn-on /-off energy = f (I_C)

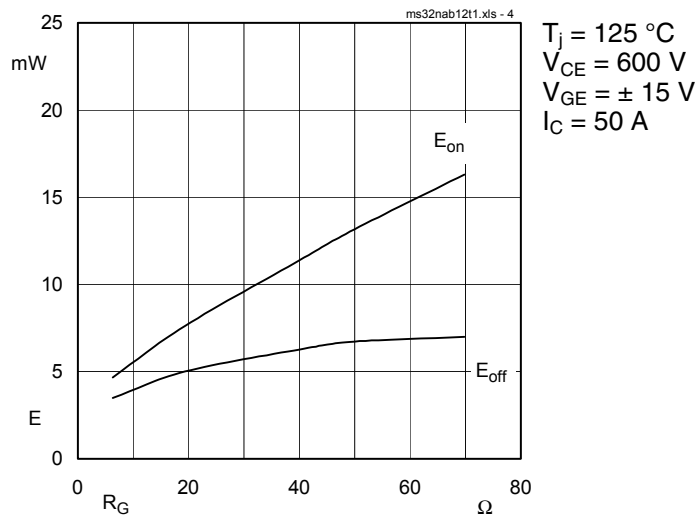


Fig. 4 Turn-on /-off energy = f (R_G)

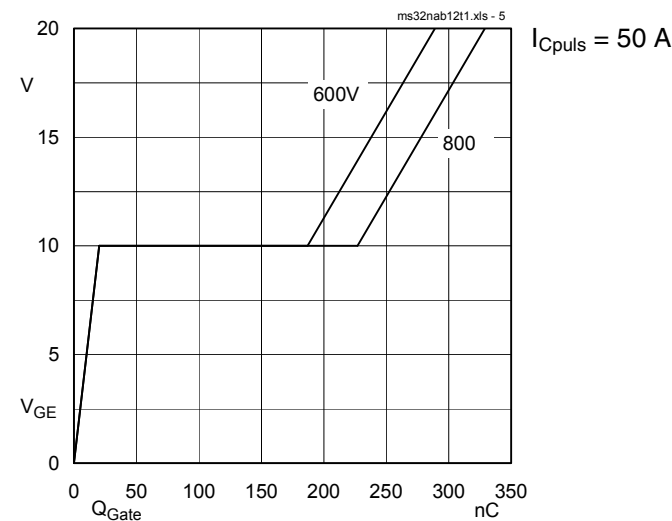


Fig. 5 Typ. gate charge characteristic

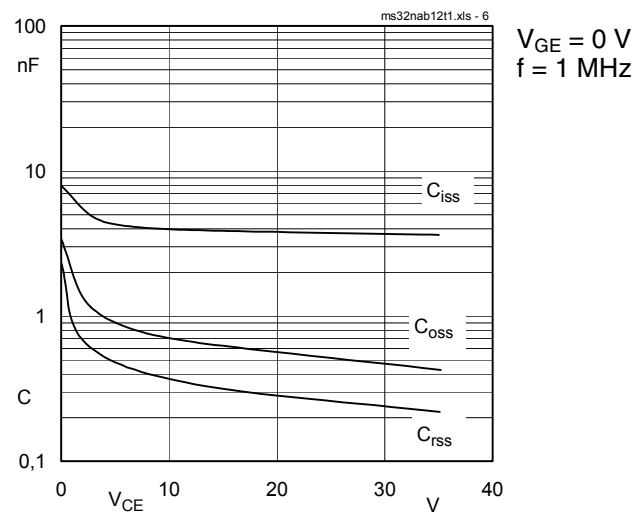


Fig. 6 Typ. capacitances vs. V_{CE}