

DATASHEET

SEMIKRON

SKiiP 32NAB12T7

OTHER SYMBOLS:

SKiiP32NAB12T7, SKiiP 32NAB12T7

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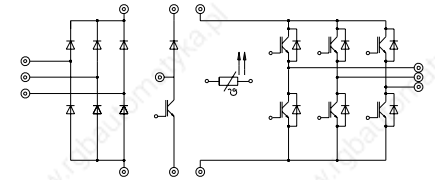
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Absolute Maximum Ratings			
Symbol	Conditions ¹⁾	Values	Units
Inverter			
V _{CES}		1200	V
V _{GES}		± 20	V
I _C	T _{heatsink} = 25 / 80 °C	65 / 45	A
I _{CM}	t _p < 1 ms; T _{heatsink} = 25 / 80 °C	130 / 90	A
I _F = -I _C	T _{heatsink} = 25 / 80 °C	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

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 °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

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	-	44	100	ns
t _r	I _C = 50 A; T _j = 125 °C	-	56	100	ns
t _{d(off)}	R _{gon} = R _{goff} = 22 Ω	-	380	500	ns
t _f	inductive load	-	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	-	75	150	ns
t _r	I _C = 25 A; T _j = 125 °C	-	65	130	ns
t _{d(off)}	R _{gon} = R _{goff} = 47 Ω	-	400	600	ns
t _f	inductive load	-	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	-	40	-	A
Q _{rr}	di _F /dt = - 800 A/μs	-	8,0	-	μC
E _{off}	V _{GE} = 0 V, T _j = 125 °C	-	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		

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

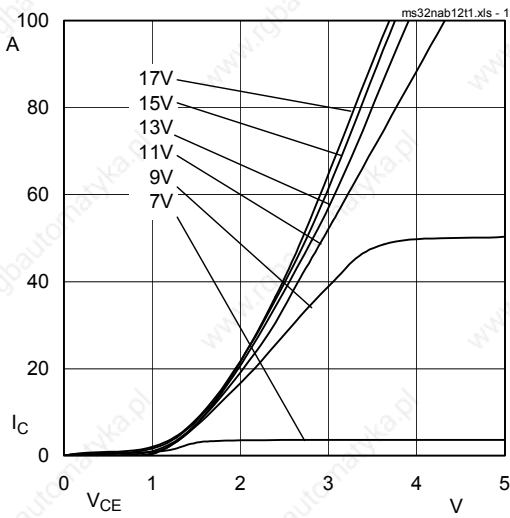


Fig. 1 Typ. output characteristic, $t_p = 80 \mu s$; $25 \text{ }^\circ\text{C}$

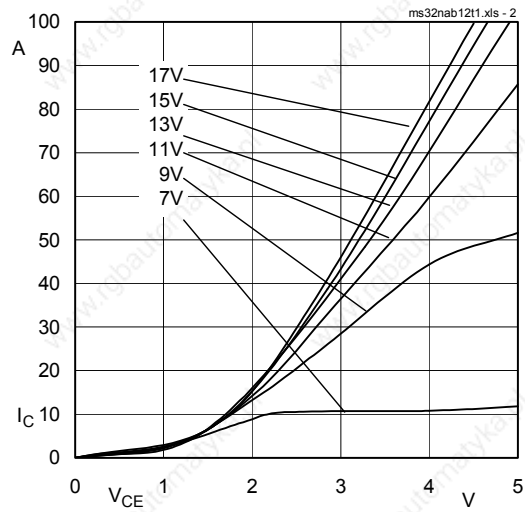


Fig. 2 Typ. output characteristic, $t_p = 80 \mu s$; $125 \text{ }^\circ\text{C}$

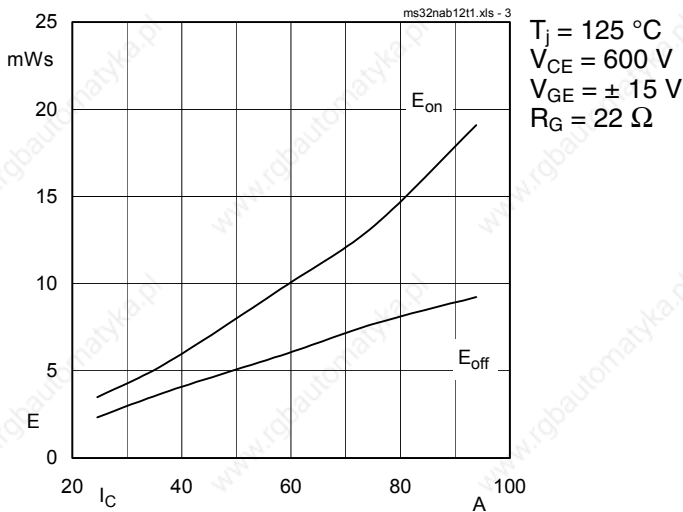


Fig. 3 Turn-on /-off energy = $f(I_C)$

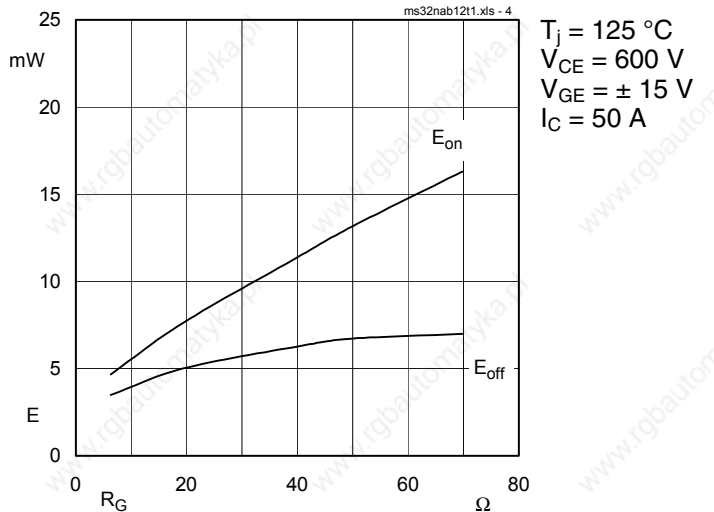


Fig. 4 Turn-on /-off energy = $f(R_G)$

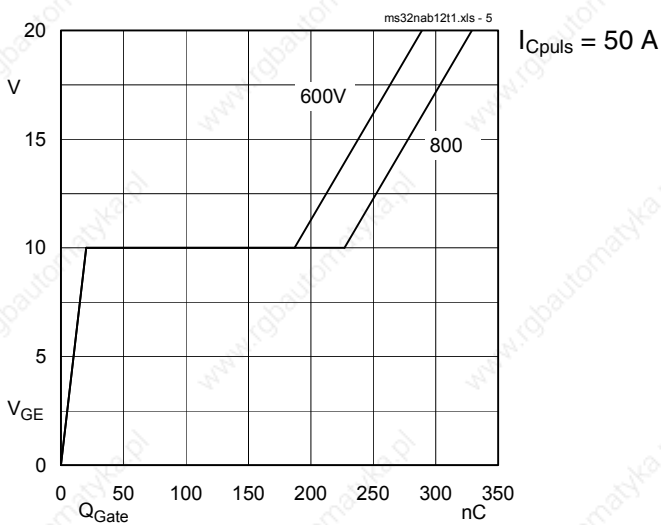


Fig. 5 Typ. gate charge characteristic

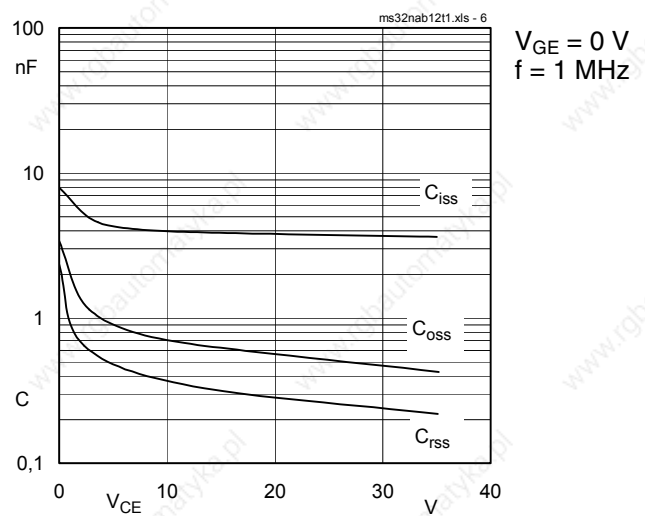


Fig. 6 Typ. capacitances vs. V_{CE}