SKiiP 12NAB066V1



MiniSKiiP[®]1

3-phase bridge rectifier + brake chopper + 3-phase bridge inverter

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Features

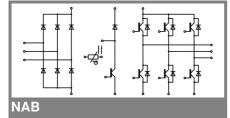
- Trench IGBTs
- Robust and soft freewheeling diodes in CAL technology
- Highly reliable spring contacts for electrical connections
- UL recognised file no. E63532

Typical Applications*

- Inverter up to 5 kVA
- Typical motor power 2,2 kW

Remarks

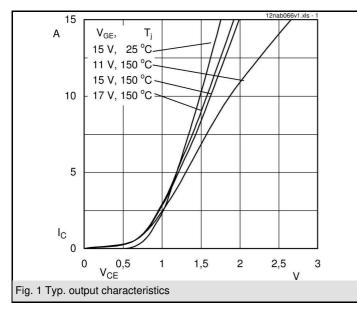
- Case temperature limited to T_C= 125°C max.
- Product reliability results are valid for T_i=150°C
- SC data: $t_p \le 6$ s; $V_{GE} \le 15$ V; T_j = 150°C; V_{CC} = 360 V
- V_{CEsat} , V_F = chip level values

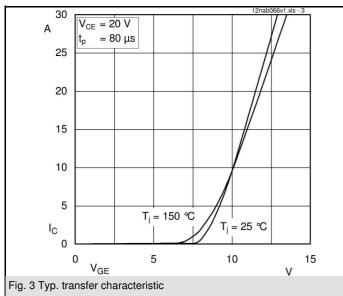


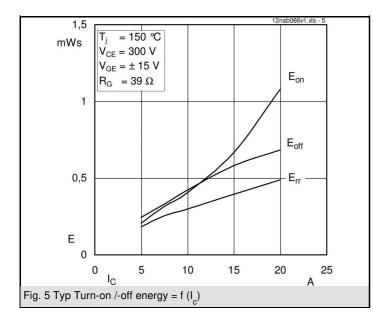
Absolute Maximum Ratings		T _S = 25°C, unless otherwis	T_S = 25°C, unless otherwise specified					
Symbol	Conditions	Values	Units					
IGBT - Inverter, Chopper								
V _{CES}		600	V					
I _C	T _s = 25 (70) °C, T _i = 150 °C	19 (14)	A					
I _C	T _s = 25 (70) °C, T _j = 175 °C	20 (16)	А					
I _{CRM}	t _p = 1 ms	20	А					
V _{GES}		± 20	V					
Diode - Ir	nverter, Chopper							
I _F	T _s = 25 (70) °C, T _i = 150 °C	20 (15)	A					
I _F	T _s = 25 (70) °C, T _j = 175 °C	20 (18)	А					
I _{FRM}	t _p = 1 ms	20	А					
Diode - Rectifier								
V _{RRM}		800	V					
I _F	T _s = 70 °C	35	A					
I _{FSM}	t _p = 10 ms, sin 180 °, T _j = 25 °C	220	А					
i²t	t _p = 10 ms, sin 180 °, T _j = 25 °C	240	A²s					
I _{tRMS}	per power terminal (20 A / spring)	20	А					
T	IGBT, Diode	-40+175	°C					
T _{stg}		-40+125	°C					
V _{isol}	AC, 1 min.	2500	V					

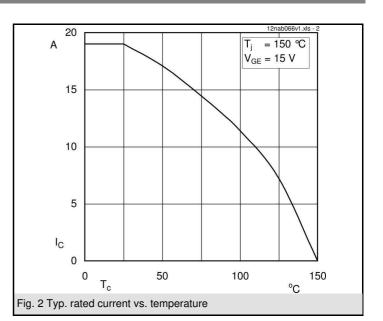
Characte	ristics	T _S = 25°C	T_S = 25°C, unless otherwise specified				
Symbol	Conditions	min.	typ.	max.	Units		
IGBT - Inverter, Chopper							
V _{CE(sat)}	I _{Cnom} = 10 A, T _j = 25 (150) °C	1,1	1,45 (1,65)	1,85 (2,05)	V		
V _{GE(th)}	$V_{GE} = V_{CE}, I_C = 1 \text{ mA}$		5,8		V		
V _{CE(TO)}	T _j = 25 (150) °C		0,9 (0,7)		V		
r _{CE}	T _j = 25 (150) °C		60 (100)	80 (110)	mΩ		
Cies	V _{CE} = 25 V, V _{GE} = 0 V, f = 1 MHz		0,58		nF		
C _{oes}	V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz		0,12		nF		
C _{res}	V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz		0,04		nF		
R _{CC'+EE'}	spring contact-chip T _s = 25 (150)°C				mΩ		
R _{th(j-s)}	per IGBT		2		K/W		
t _{d(on)}	under following conditions		25		ns		
t,	V _{CC} = 300 V, V _{GE} = ±15V		25		ns		
t _{d(off)}	I _{Cnom} = 10 A, T _j = 150 °C		190		ns		
t _f	$R_{Gon} = R_{Goff} = 39 \Omega$		40		ns		
E _{on} (E _{off})	inductive load		0,41 (0,3)		mJ		
Diode - Ir	verter, Chopper						
V _F = V _{EC}	I _F = 10 A, T _i = 25 (150) °C		1,3 (1,3)	1,6 (1,6)	V		
V _(TO)	T _i = 25 (150) °C		0,9 (0,8)	1 (0,9)	V		
r _T	T _i = 25 (150) °C		40 (50)	60 (70)	mΩ		
R _{th(j-s)}	per diode		2,5		K/W		
I _{RRM}	under following conditions		15,8		Α		
Q _{rr}	I _{Enom} = 10 A, V _R = 300 V		1,5		С		
E _{rr}	V _{GE} = 0 V, T _i = 150°C		0,42		mJ		
	di _F /dt = 810 Å/ s						
Diode -R	ectifier	•			•		
V _F	I _{Fnom} = 15 A, T _i = 25 °C		1,1		V		
V _(TO)	T _i = 150 °C		0,8		V		
r _T	T _i = 150 °C		20		mΩ		
$R_{th(j-s)}$	per diode		1,5		K/W		
	Temperature Sensor						
R _{ts}	3 %, T _r = 25 (100) °C		1000(1670)		Ω		
Mechanical Data							
W			35		g		
M _s	Mounting torque	2		2,5	Nm		
		1			1		

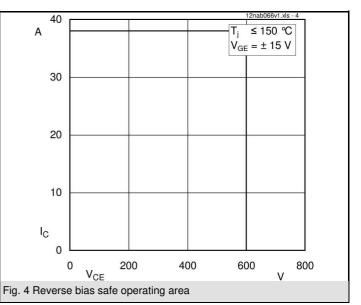
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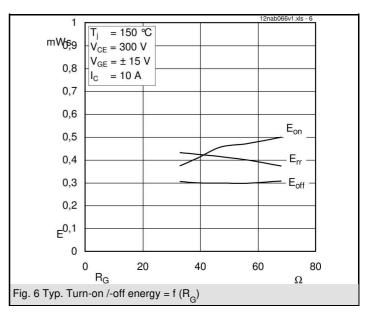




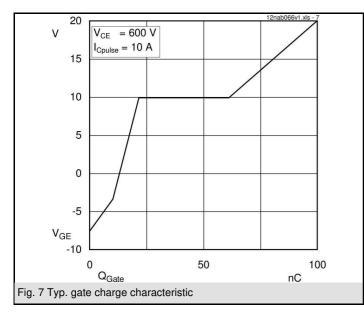


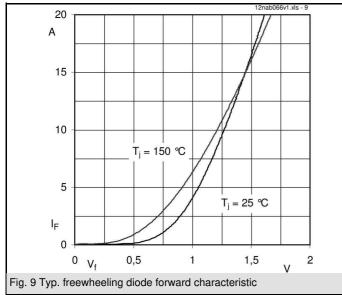


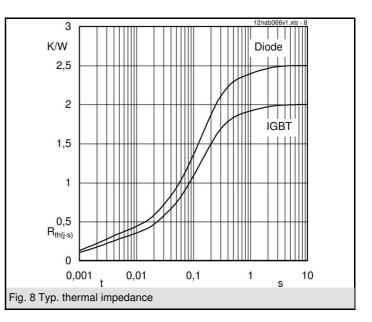


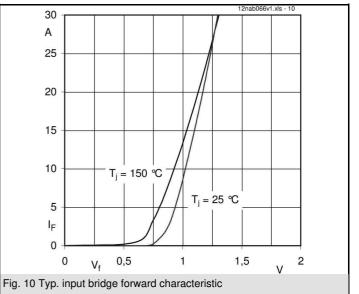


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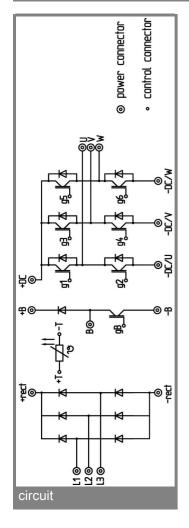


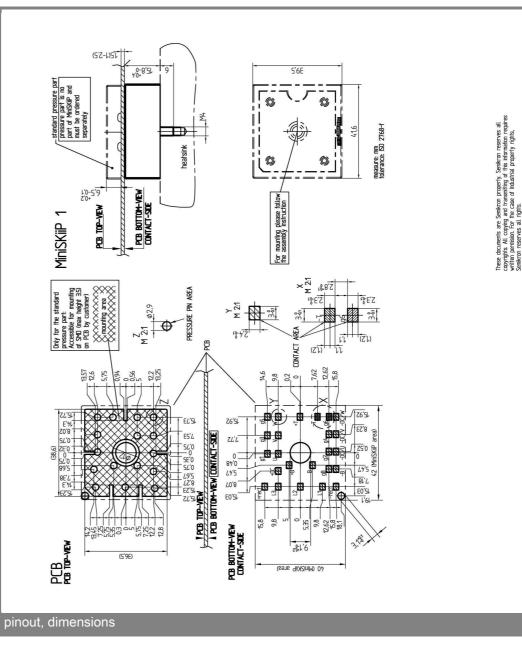






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This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, chapter IX.

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