

SKiiP 11NAB123V10

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MiniSKiiP® 1

3-phase bridge rectifier +
brake chopper + 3-phase
bridge inverter
SKiiP 11NAB123V10

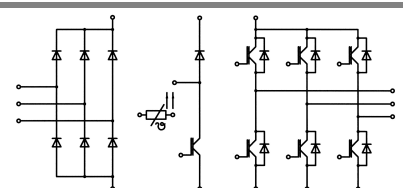
Target Data

Features

- Fast 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 7,5 kVA
- Typical motor power 4 kW



NAB

Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT - Inverter, Chopper			
V_{CES}	$T_s = 25\text{ (70) °C}$	1200	V
I_C	$T_s = 25\text{ (70) °C}, t_p \leq 1\text{ ms}$		A
I_{CRM}			A
V_{GES}		± 20	V
T_j		- 40 ... + 150	°C
Diode - Inverter, Chopper			
I_F	$T_s = 25\text{ (70) °C}$	14 (11)	A
I_{FRM}	$T_s = 25\text{ (70) °C}, t_p \leq 1\text{ ms}$	28 (22)	A
T_j		- 40 ... + 150	°C
Diode - Rectifier			
V_{RRM}	$T_s = 70\text{ °C}$	1600	V
I_F		31	A
I_{FSM}	$t_p = 10\text{ ms}, \sin 180\text{ °}, T_j = 25\text{ °C}$	220	A
i^2t	$t_p = 10\text{ ms}, \sin 180\text{ °}, T_j = 25\text{ °C}$	240	A ² s
T_j		- 40 ... + 150	°C
I_{tRMS}	per power terminal (20 A / spring)	20	A
T_{stg}	$T_{op} \leq T_{stg}$	- 40 ... + 125	°C
V_{isol}	AC, 1 min.	2500	V

Characteristics		$T_s = 25\text{ °C}$, unless otherwise specified		
Symbol	Conditions	min.	typ.	max.
IGBT - Inverter, Chopper				
V_{CEsat}	$I_C = 8\text{ A}, T_j = 25\text{ (125) °C}$			V
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = 0,3\text{ mA}$			V
$V_{CE(TO)}$	$T_j = 25\text{ (125) °C}$			V
r_T	$T_j = 25\text{ (125) °C}$			mΩ
C_{ies}	$V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1\text{ MHz}$	-		nF
C_{oes}	$V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1\text{ MHz}$	-		nF
C_{res}	$V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1\text{ MHz}$	-		nF
$R_{th(j-s)}$	per IGBT			K/W
$t_{d(on)}$	under following conditions		35	ns
t_r	$V_{CC} = 600\text{ V}, V_{GE} = \pm 15\text{ V}$		25	ns
$t_{d(off)}$	$I_C = 8\text{ A}, T_j = 125\text{ °C}$		365	ns
t_f	$R_{Gon} = R_{Goff} = -\Omega$		105	ns
E_{on}	inductive load		0,8	mJ
E_{off}			0,95	mJ
Diode - Inverter, Chopper				
$V_F = V_{EC}$	$I_F = 8\text{ A}, T_j = 25\text{ (125) °C}$		1,9 (2)	2,2 (2,4)
$V_{(TO)}$	$T_j = 25\text{ (125) °C}$		1 (0,8)	1,1 (0,9)
r_T	$T_j = 25\text{ (125) °C}$		112 (150)	138 (187)
$R_{th(j-s)}$	per diode		2,4	K/W
I_{RRM}	under following conditions		12	A
Q_{rr}	$I_F = 8\text{ A}, V_R = 600\text{ V}$		1,8	μC
E_{rr}	$V_{GE} = 0\text{ V}, T_j = 125\text{ °C}$		0,85	mJ
	$di_F/dt = 520\text{ A/μs}$			
Diode - Rectifier				
V_F	$I_F = 15\text{ A}, T_j = 25\text{ °C}$		1,1	V
$V_{(TO)}$	$T_j = 150\text{ °C}$		0,8	V
r_T	$T_j = 150\text{ °C}$		20	mΩ
$R_{th(j-s)}$	per diode		1,8	K/W
Temperature Sensor				
R_{ts}	3 %, $T_r = 25\text{ (100) °C}$		1000(1670)	Ω
Mechanical Data				
w			35	g
M_s	Mounting torque	2	2,5	Nm

