

SKiiP 13NAB066V1

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MiniSKiiP® 1

3-phase bridge rectifier +
brake chopper + 3-phase
bridge inverter
SKiiP 13NAB066V1

Target Data

Features

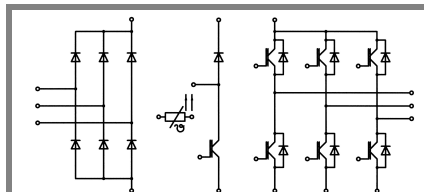
- Trench IGBTs
- Robust and soft freewheeling diodes in CAL technology
- Highly reliable spring contacts for electrical connections
- UL recognised file no. E63532

Typical Applications

- Inverter up to 5,6 kVA
- Typical motor power 3,0 kW

Remarks

- Case temperature limited to $T_C = 125\text{ °C}$ max.



NAB

Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT - Inverter, Chopper			
V_{CES}	$T_s = 25\text{ (70) °C}$	600	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 ... + 175	°C
Diode - Inverter, Chopper			
I_F	$T_s = 25\text{ (70) °C}$		A
I_{FRM}	$T_s = 25\text{ (70) °C}, t_p \leq 1\text{ ms}$		A
T_j		- 40 ... + 175	°C
Diode - Rectifier			
V_{RRM}	$T_s = 70\text{ °C}$	800	V
I_F	$t_p = 10\text{ ms}, \sin 180\text{ °}, T_j = 25\text{ °C}$	35	A
I_{FSM}	$t_p = 10\text{ ms}, \sin 180\text{ °}, T_j = 25\text{ °C}$	220	A
i^2t		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. Units
IGBT - Inverter, Chopper				
V_{CEsat}	$I_C = 15\text{ A}, T_j = 25\text{ (125) °C}$		1,4 (1,65)	1,9 (2,05) V
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = 0,5\text{ mA}$		5,8	V
$V_{CE(TO)}$	$T_j = 25\text{ (125) °C}$		0,9 (0,85)	1 (0,9) V
r_T	$T_j = 25\text{ (125) °C}$		37 (53)	60 (77) 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		1,4	K/W
$t_{d(on)}$	under following conditions		-	ns
t_r	$V_{CC} = 300\text{ V}, V_{GE} = \pm 15\text{ V}$		-	ns
$t_{d(off)}$	$I_C = 15\text{ A}, T_j = 125\text{ °C}$		-	ns
t_f	$R_{Gon} = R_{Goff} = -\Omega$		-	ns
E_{on}	inductive load		0,38	mJ
E_{off}			0,68	mJ
Diode - Inverter, Chopper				
$V_F = V_{EC}$	$I_F = 15\text{ A}, T_j = 25\text{ (125) °C}$		1,4	1,6 V
$V_{(TO)}$	$T_j = 25\text{ (125) °C}$		0,95	1 V
r_T	$T_j = 25\text{ (125) °C}$		30	40 mΩ
$R_{th(j-s)}$	per diode		2,2	K/W
I_{RRM}	under following conditions		-	A
Q_{rr}	$I_F = 15\text{ A}, V_R = 300\text{ V}$		-	μC
E_{rr}	$V_{GE} = 0\text{ V}, T_j = 125\text{ °C}$		-	mJ
	$di_F/dt = -\text{A}/\mu\text{s}$		-	
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		1,5	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



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