



MiniSKiIP® 3

3-phase bridge inverter

SKiIP 38AC126V2

Features

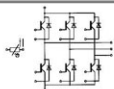
- Fast Trench IGBTs
- Robust and soft freewheeling diodes in CAL technology
- Highly reliable spring contacts for electrical connections
- UL recognised file no. E63532

Typical Applications*

- Inverter up to 39 kVA
- Typical motor power 22 kW

Remarks

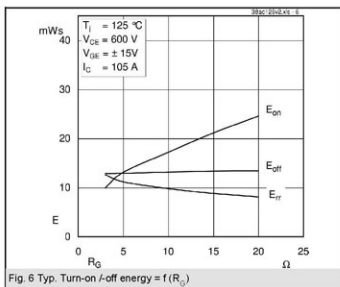
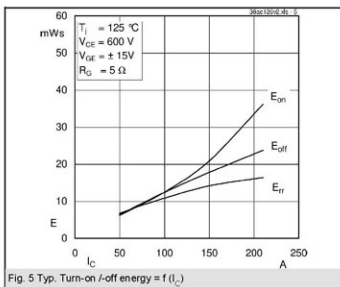
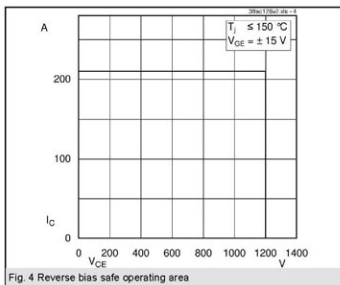
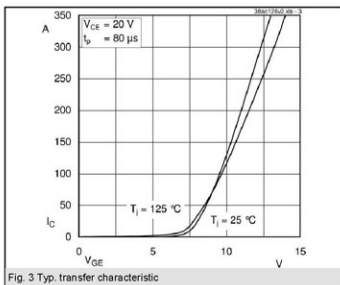
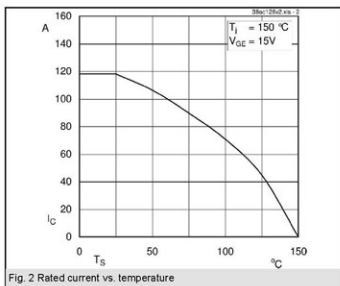
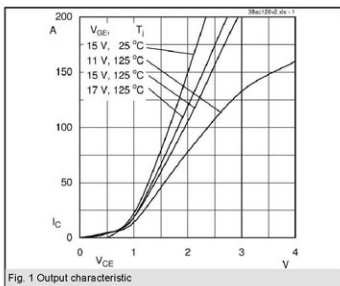
- V_{CEsat} , V_F = chip level value



AC

Absolute Maximum Ratings		$T_s = 25\text{ }^\circ\text{C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT - Inverter			
V_{CES}		1200	V
I_C	$T_s = 25\text{ (70) }^\circ\text{C}$	118 (88)	A
I_{CRM}	$t_p \leq 1\text{ ms}$	210	A
V_{GES}		± 20	V
T_J		-40 ... +150	$^\circ\text{C}$
Diode - Inverter			
I_F	$T_s = 25\text{ (70) }^\circ\text{C}$	118 (88)	A
I_{FRM}	$t_p \leq 1\text{ ms}$	210	A
T_J		-40 ... +150	$^\circ\text{C}$
I_{RMS}	per power terminal (20 A / spring)	160	A
T_{stg}	$T_{op} \leq T_{stg}$	-40 ... +125	$^\circ\text{C}$
V_{isol}	AC, 1 min.	2500	V

Characteristics		$T_s = 25\text{ }^\circ\text{C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT - Inverter					
V_{CEsat}	$I_{Cnom} = 105\text{ A}$, $T_J = 25\text{ (125) }^\circ\text{C}$		1,7 (2)	2,1 (2,4)	V
$V_{GE(Oh)}$	$V_{GE} = V_{CE}$, $I_C = 3\text{ mA}$	5	5,8	6,5	V
$V_{CE(TO)}$	$T_J = 25\text{ (125) }^\circ\text{C}$		1 (0,9)	1,2 (1,1)	V
r_T	$T_J = 25\text{ (125) }^\circ\text{C}$		6,7 (10)	8,6 (12)	m Ω
C_{ios}	$V_{CE} = 25\text{ V}$, $V_{GE} = 0\text{ V}$, $f = 1\text{ MHz}$		8,4		nF
C_{oss}	$V_{CE} = 25\text{ V}$, $V_{GE} = 0\text{ V}$, $f = 1\text{ MHz}$		1,5		nF
C_{res}	$V_{CE} = 25\text{ V}$, $V_{GE} = 0\text{ V}$, $f = 1\text{ MHz}$		1,1		nF
$R_{th(j-s)}$	per IGBT		0,4		K/W
$t_{i(on)}$	under following conditions		75		ns
t_r	$V_{CC} = 600\text{ V}$, $V_{GE} = \pm 15\text{ V}$		35		ns
$t_{i(off)}$	$I_{Cnom} = 105\text{ A}$, $T_J = 125\text{ }^\circ\text{C}$		465		ns
t_f	$R_{C(on)} = R_{C(off)} = 5\text{ }\Omega$		90		ns
E_{on}	inductive load		13,1		mJ
E_{off}			13		mJ
Diode - Inverter					
$V_F = V_{EC}$	$I_{Fnom} = 105\text{ A}$, $T_J = 25\text{ (125) }^\circ\text{C}$		1,6 (1,6)	1,8 (1,8)	V
$V_{(TO)}$	$T_J = 25\text{ (125) }^\circ\text{C}$		1 (0,8)	1,1 (0,9)	V
r_T	$T_J = 25\text{ (125) }^\circ\text{C}$		5,7 (7,6)	6,7 (8,6)	m Ω
$R_{th(j-s)}$	per diode		0,55		K/W
I_{FRM}	under following conditions		175		A
Q_{rr}	$I_{Fnom} = 105\text{ A}$, $V_R = 600\text{ V}$		26		μC
E_{rr}	$V_{GE} = 0\text{ V}$, $T_J = 125\text{ }^\circ\text{C}$		11,2		mJ
	$di_F/dt = 4000\text{ A}/\mu\text{s}$				
Temperature Sensor					
R_{ts}	3 %, $T_r = 25\text{ (100) }^\circ\text{C}$		1000(1670)		Ω
Mechanical Data					
m			95		g
M_b	Mounting torque	2		2,5	Nm



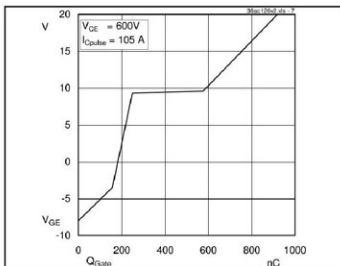


Fig. 7 Typ. gate charge characteristic

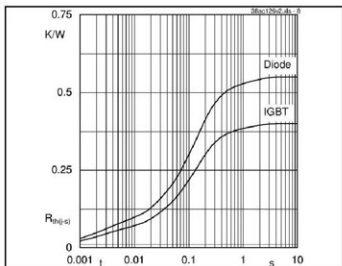


Fig. 8 Typ. thermal impedance

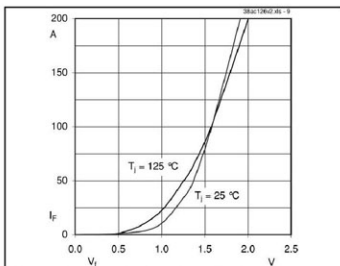


Fig. 9 Typ. freewheeling diode forward characteristic

