SEMITOP®4

3-phase bridge inverter

SK 100 GD 126 T

Target Data

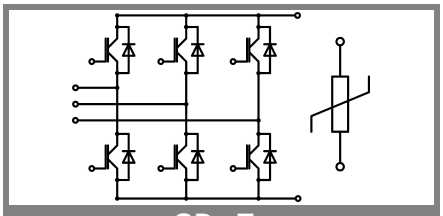
Features

- One screw mounting module
- Fully compatible with SEMITOP®1,2,3
- Improved thermal resistance performances by aluminium oxide substrate
- Trench IGBT technology
- CAL technology FWD
- Integrated NTC temperature sensor

Typical Applications

- Inverter up to 50 kVA
- Typ. motor power 22kW

1) $V_{CE,SAT}$, V_F= chip level value

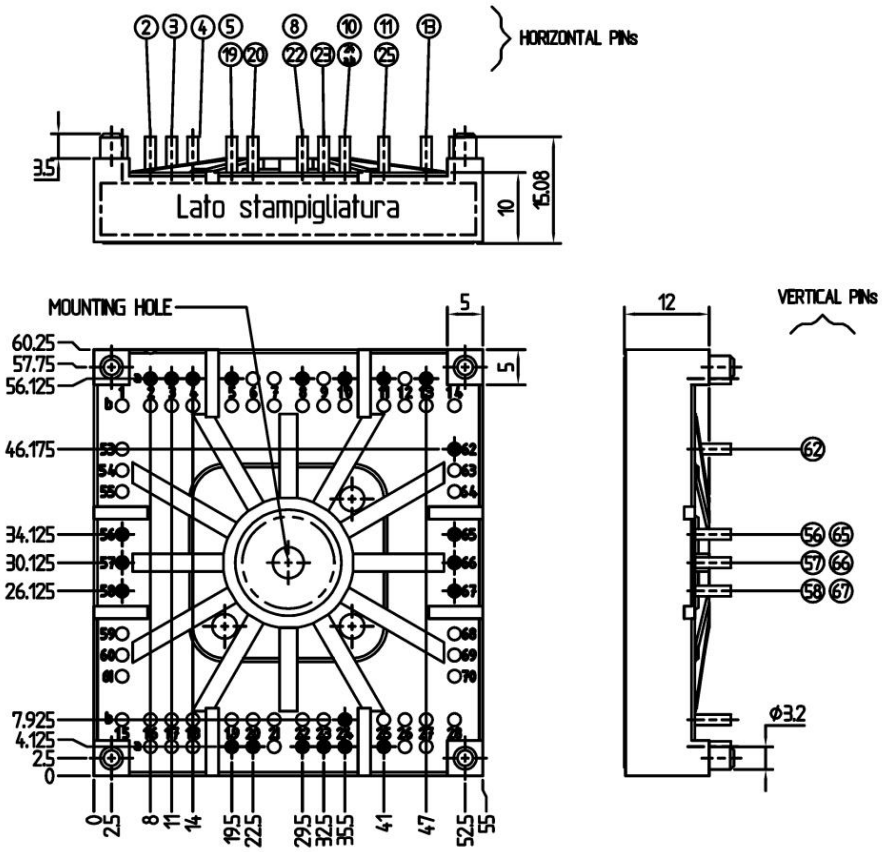


GD - T

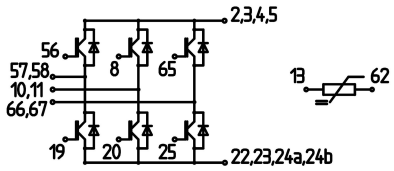
Absolute Maximum Ratings		Ts = 25 °C, unless otherwise specified	
Symbol	**Conditions**	**Values**	**Units**
IGBT - Inverter			
V_{CES}		1200	V
I_C	T_s = 25 (70) °C	114 (86)	A
I_{CRM}	, t_p = 1 ms	228	A
V_{GES}		± 20	V
T_j		-40 ... +150	°C
Diode - Inverter			
I_F	T_s = 25 (70) °C	118 (88)	A
I_{FRM}	I_{FRM} = 2xI_{Fnom}, t_p = 1 ms	236	A
T_j		-40 ... +150	°C
Rectifier			
V_{RRM}			V
I_{FAV}/I_{TAV}	T_s = °C		A
I_{FSM} / I_{TSM}	t_p = ms , sin ° ,T_j = °C		A
I^2t	t_p = ms , sin ° ,T_j = °C		A²s
T_j			°C
T_{sol}	Terminals, 10 s	260	°C
T_{stg}		-40 ... +125	°C
V_{isol}	AC, 1 min. / 1 s	2500 / 3000	V

Characteristics		Ts = 25 °C, unless otherwise specified			
Symbol	**Conditions**	**min.**	**typ.**	**max.**	**Units**
IGBT - Inverter 1)					
V_{CEsat}	I_C = 100 A, T_j = 25 (125) °C		1,7 (2,15)	2,1 (2,45)	V
$V_{GE(th)}$	V_{GE} = V_{CE}, I_C = 4 mA	5	5,8	6,5	V
$V_{CE(TO)}$	T_j = 25 °C (125) °C		1 (0,9)	1,2 (1,1)	V
r_T	T_j = 25 °C (125) °C		7 (11)	9,5 (14)	mΩ
C_{ies}	V_{CE} = 25 V_{GE} = 0 V, f = 1 MHz		-		nF
C_{oes}	V_{CE} = 25 V_{GE} = 0 V, f = 1 MHz		-		nF
C_{res}	V_{CE} = 25 V_{GE} = 0 V, f = 1 MHz		-		nF
$R_{th(j-s)}$	per IGBT		0,4		K/W
$t_{d(on)}$	under following conditions		-		ns
t_r	V_{CC} = 600 V, V_{GE} = ± 15 V		-		ns
$t_{d(off)}$	I_C = 105 A, T_j = 125 °C		-		ns
t_f	R_{Gon} = R_{Goff} = 5 Ω		-		ns
E_{on}	inductive load		13,1		mJ
E_{off}			13		mJ
Diode - Inverter 1)					
V_F = V_{EC}	I_F = 100 A, T_j = 25 (125) °C		1 (1,5)		V
$V_{(TO)}$	T_j = 25 °C (125) °C		1,18 (1)		V
r_T	T_j = 25 °C (125) °C		3,2 (5)		mΩ
$R_{th(j-s)}$	per diode		0,55		K/W
I_{RRM}	under following conditions		-		A
Q_{rr}	I_F = A, V_R = V		-		µC
E_{rr}	V_{GE} = 0 V, T_j = 125 °C				mJ
	di_F/dt = - A/µs				
Diode rectifier					
V_F	I_F = A, T_j = 25 °C				V
$V_{(TO)}$	T_j = °C				V
r_T	T_j = °C				mΩ
$R_{th(j-s)}$	per diode				K/W
Temperatur sensor					
R_{ts}	5 %, T_r = 25 (100) °C		5000(493)		Ω
Mechanical data					
w			60		g
M_s	Mounting torque		3,5		Nm

Dimensions in mm



Case T 74



Case T 74

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

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