

SK 75 GD 126 T

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SEMITOP® 4

3-phase bridge inverter

SK 75 GD 126 T

Target Data

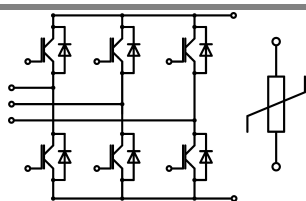
Features

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

Typical Applications

- Inverter up to 42 kVA
- Typ. motor power 18,5 kW

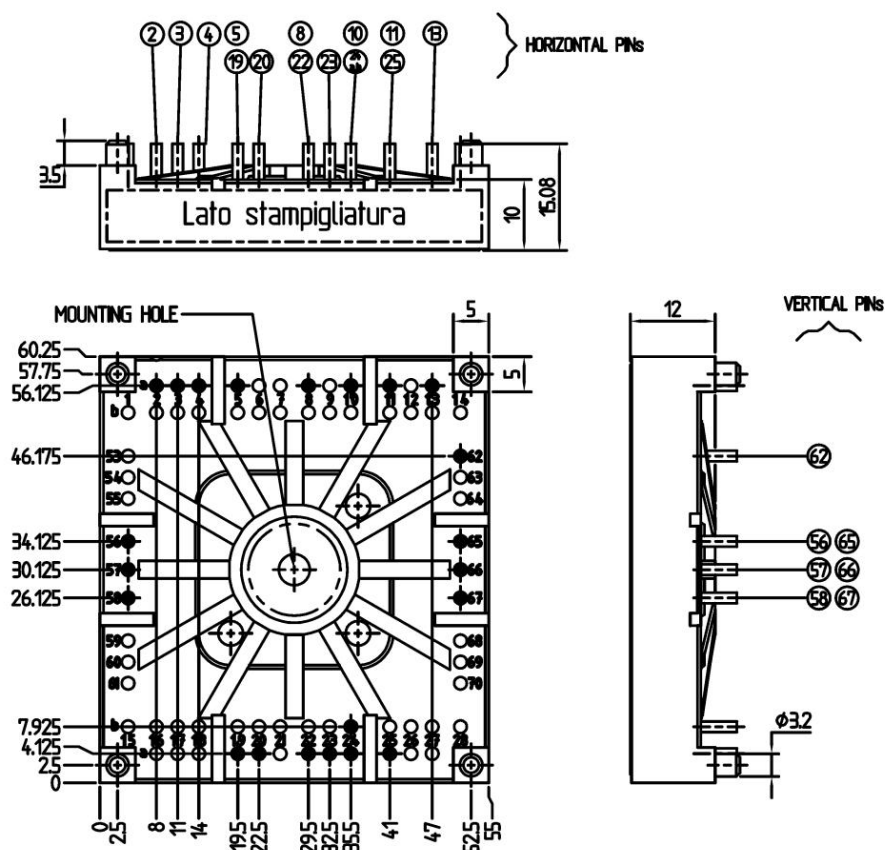
1) $V_{CE,sat}$, V_F = chip level value



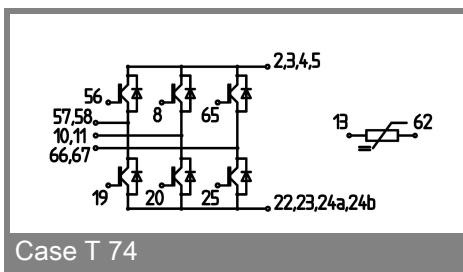
GD - T

Absolute Maximum Ratings		Ts = 25 °C, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT - Inverter			
V_{CES}	$T_s = 25 \text{ (70) } ^\circ\text{C}$ $t_p = 1 \text{ ms}$	1200	V
I_C		88 (67)	A
I_{CRM}		176	A
V_{GES}		± 20	V
T_j		-40 ... +150	$^\circ\text{C}$
Diode - Inverter			
I_F	$T_s = 25 \text{ (70) } ^\circ\text{C}$	91 (68)	A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$, $t_p = 1 \text{ ms}$	182	A
T_j		-40 ... +150	$^\circ\text{C}$
Rectifier			
V_{RRM}	$T_s = ^\circ\text{C}$ $t_p = \text{ms}$, $\sin ^\circ$, $T_j = ^\circ\text{C}$ $t_p = \text{ms}$, $\sin ^\circ$, $T_j = ^\circ\text{C}$		V
I_{FAV}/I_{TAV}			A
I_{FSM} / I_{TSM}			A
I_t^2			A ² s
T_j			$^\circ\text{C}$
T_{sol}	Terminals, 10 s	260	$^\circ\text{C}$
T_{stg}		-40 ... +125	$^\circ\text{C}$
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					
V_{CEsat}	$I_C = 70 \text{ A}$, $T_j = 25 \text{ (125) } ^\circ\text{C}$		1,7 (2)	2,1 (2,4)	V
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 3 \text{ mA}$	5	5,8	6,5	V
$V_{CE(TO)}$	$T_j = 25 ^\circ\text{C}$ (125) $^\circ\text{C}$		1 (0,9)	1,2 (1,1)	V
r_T	$T_j = 25 ^\circ\text{C}$ (125) $^\circ\text{C}$		10 (16)	13 (19)	m Ω
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		0,5		K/W
$t_{d(on)}$	under following conditions		-		ns
t_r	$V_{CC} = 600 \text{ V}$, $V_{GE} = \pm 15 \text{ V}$		-		ns
$t_{d(off)}$	$I_C = 70 \text{ A}$, $T_j = 125 ^\circ\text{C}$		-		ns
t_f	$R_{Gon} = R_{Goff} = 9 \Omega$		-		ns
E_{on}	inductive load		9		mJ
E_{off}			7,7		mJ
Diode - Inverter					
$V_F = V_{EC}$	$I_F = 75 \text{ A}$, $T_j = 25 \text{ (125) } ^\circ\text{C}$		1,46 (1,4)		V
$V_{(TO)}$	$T_j = 25 ^\circ\text{C}$ (125) $^\circ\text{C}$		1,05 (0,95)		V
r_T	$T_j = 25 ^\circ\text{C}$ (125) $^\circ\text{C}$		5,5 (6)		m Ω
$R_{th(j-s)}$	per diode		0,7		K/W
I_{RRM}	under following conditions		-		A
Q_{rr}	$I_F = \text{A}$, $V_R = \text{V}$		-		μC
E_{rr}	$V_{GE} = 0 \text{ V}$, $T_j = 125 ^\circ\text{C}$		-		mJ
	$di_F/dt = - \text{A}/\mu\text{s}$				
Diode rectifier					
V_F	$I_F = \text{A}$, $T_j = 25 ^\circ\text{C}$				V
$V_{(TO)}$	$T_j = ^\circ\text{C}$				V
r_T	$T_j = ^\circ\text{C}$				m Ω
$R_{th(j-s)}$	per diode				K/W
Temperatur sensor					
R_{ts}	5 %, $T_r = 25 \text{ (100) } ^\circ\text{C}$		5000(493)		Ω
Mechanical data					
w			60		g
M_s	Mounting torque		3,5		Nm



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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