SK 50 DGDL 126 T

CONVERTER, INVERTER, BRAKE

SEMITOP®4

3-phase bridge rectifier + brake chopper + 3-phase bridge inverter

SK 50 DGDL 126 T

Target Data

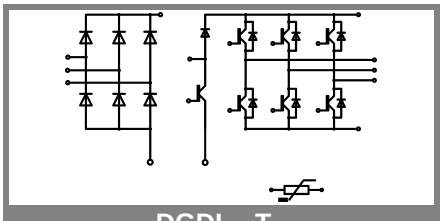
Features

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

Typical Applications

- Inverter up to 28 kVA
- Typ. motor power 15 kW

1) $V_{ce,sat}$, V_f = chip level value
2) For IGBT chopper diagrams please refer to SK35DGDL126T



DGDL - T

Absolute Maximum Ratings	Ts = 25 °C, unless otherwise specified		
Symbol	**Conditions**	**Values**	**Units**
IGBT - Inverter. For IGBT chopper maximum ratings, please refer to SK35DGDL126T			
V_{CES}		1200	V
I_C	T_s = 25 (70) °C	68 (52)	A
I_{CM}	T_s = 25 (70) °C , tp ≤ 1 ms	136 (104)	A
V_{GES}		± 20	V
T_j		-40 ... +150	°C
Diode - Inverter,Chopper			
I_F	T_s = 25 (70) °C	62 (46)	A
$I_{FM} = -I_{CM}$	T_s = 25 (70) °C,tp ≤ 1 ms	124 (92)	A
T_j		-40 ... +150	°C
Rectifier			
V_{RRM}		1600	V
I_F	T_s = 70 °C	45	A
I_{FSM} / I_{TSM}	t_p = 10 ms , sin 180 ° ,T_j = 25 °C	700	A
I^2t	t_p = 10 ms , sin 180 ° ,T_j = 25 °C	2400	A²s
T_j		-40 ... +150	°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. For IGBT chopper electrical characteristics, please refer to SK35DGDL126T					
V_{CEsat}	I_C = 50 A, T_j = 25 (125) °C		1,7 (2)	2,15 (2,45)	V
$V_{GE(th)}$	$V_{GE} = V_{CE}$, I_C = 2 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		14 (22)	19 (27)	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		0,6		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 = 50 A, T_j = 125 °C		-		ns
t_f	$R_{Gon} = R_{Goff}$ = 12 Ω		-		ns
E_{on}	inductive load		6,5		mJ
E_{off}			6		mJ
Diode - Inverter,Chopper					
$V_F = V_{EC}$	I_F = 50 A, T_j = 25 (125) °C		1,35 (1,35)		V
$V_{(TO)}$	T_j = 25 °C (125) °C		0,95 (0,85)		V
r_T	T_j = 25 °C (125) °C		8 (10)		mΩ
$R_{th(j-s)}$	per diode		1		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 = 35 A, T_j = 25 °C		1,1		V
$V_{(TO)}$	T_j = 150 °C		0,8		V
r_T	T_j = 150 °C		11		mΩ
$R_{th(j-s)}$	per diode		0,9		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

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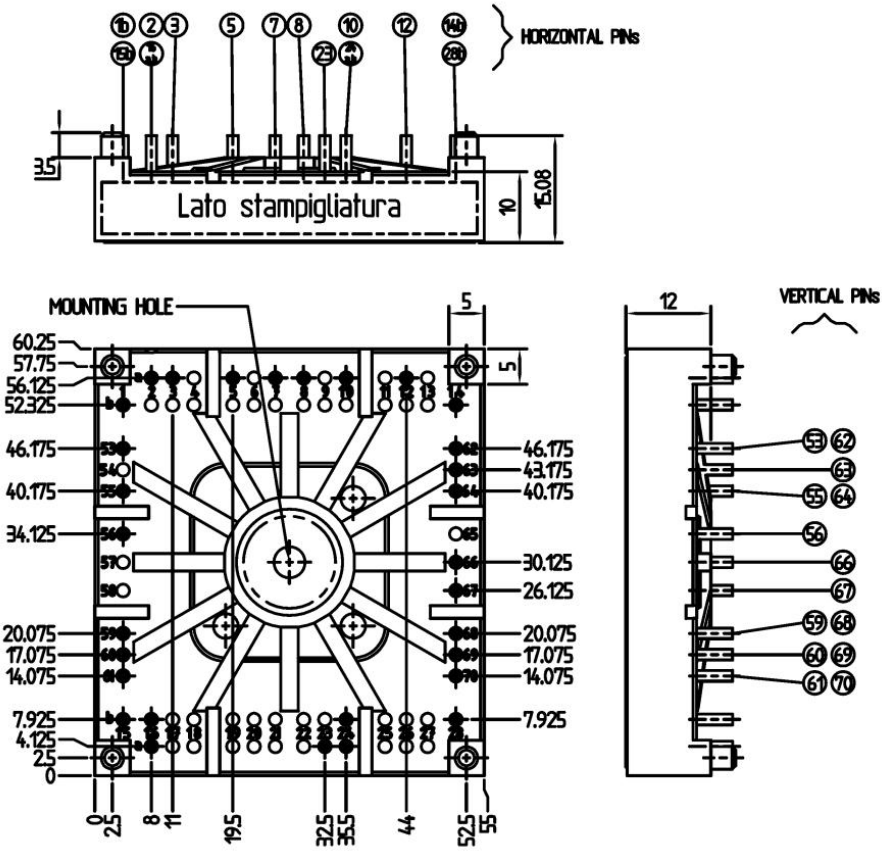
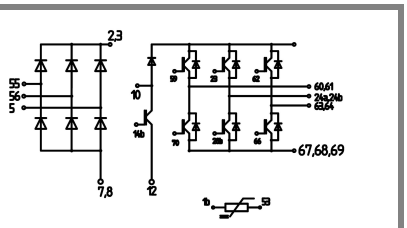
Dimensions in mm



Case T 75



Case T 75 (pin without letter refers to row "a", unless otherwise specified)

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

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