SEMITOP®4

3-phase bridge inverter

SK 150 GD 066 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

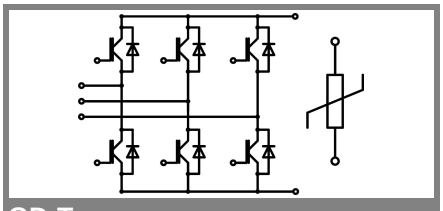
- Inverter up to 32 kVA
- Typ. motor power 15 kW

Remarks

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

Absolute Maximum Ratings	T_s = 25°C , unless otherwise specified		
Symbol	**Conditions**	**Values**	**Units**
IGBT - Inverter			
V_{CES}		600	V
I_C	T_s = 25 (70) °C, T_j = 150 °C	137 (103)	A
I_C	T_s = 25 (70) °C, T_j = 175 °C	151 (121)	A
I_{CRM}	, t_p = 1 ms	300	A
V_{GES}		± 20	V
T_j		-40 ... + 175	°C
Diode - Inverter			
I_F	T_s = 25 (70) °C, T_j = 150 °C	173 (124)	A
I_F	T_s = 25 (70) °C, T_j = 175 °C	198 (152)	A
I_{FRM}	I_{FRM} = 2xI_{Fnom}, t_p = ms		
T_j		-40 ... + 175	°C
T_{sol}	Terminals, 10 s	260	°C
T_{stg}		-40 ... + 125	°C
V_{isol}	AC, 1 min.	2500	V

Characteristics	T_s = 25°C , unless otherwise specified				
Symbol	**Conditions**	**min.**	**typ.**	**max.**	**Units**
IGBT - Inverter					
$V_{CE(sat)}$	I_{Cnom} = 150 A, T_j = 25 (125) °C		1,45 (1,65)	1,85 (2,05)	V
$V_{GE(th)}$	V_{GE} = V_{CE}, I_C = 2,4 mA	5	5,8	6,5	V
$V_{CE(TO)}$	T_j = 25 (150) °C		0,8 (0,7)	1,1 (1)	V
r_{CE}	T_j = 25 (150) °C		4 (6,5)	5 (7)	mΩ
C_{ies}	V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz		-		nF
C_{oes}	V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz		-		nF
C_{res}	V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz		-		nF
$R_{th(j-s)}$	per IGBT		0,55		K/W
$t_{d(on)}$	under following conditions		-		ns
t_r	V_{CC} = 600 V, V_{GE} = ± 15 V		-		ns
$t_{d(off)}$	I_{Cnom} = 150 A, T_j = 150 °C		-		ns
t_f	R_{Gon} = R_{Goff} = 4 Ω		-		ns
E_{on} (E_{off})	inductive load		5,4 (6)		mJ
Diode - Inverter					
V_F = V_{EC}	I_F = 150 A, T_j = 25 (150) °C		1,3 (1,2)		V
$V_{(TO)}$	T_j = 25 (150) °C		0,85 (0,9)		V
r_T	T_j = 25 (150) °C		3 (2)		mΩ
$R_{th(j-s)}$	per diode		0,54		K/W
I_{RRM}	under following conditions		-		A
Q_{rr}	I_{Fnom} = A, V_R = V		-		µC
E_{rr}	V_{GE} = 0 V, T_j = °C				mJ
	di_F/dt = - A/µs				
Temperature 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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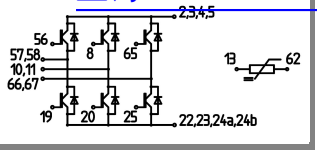

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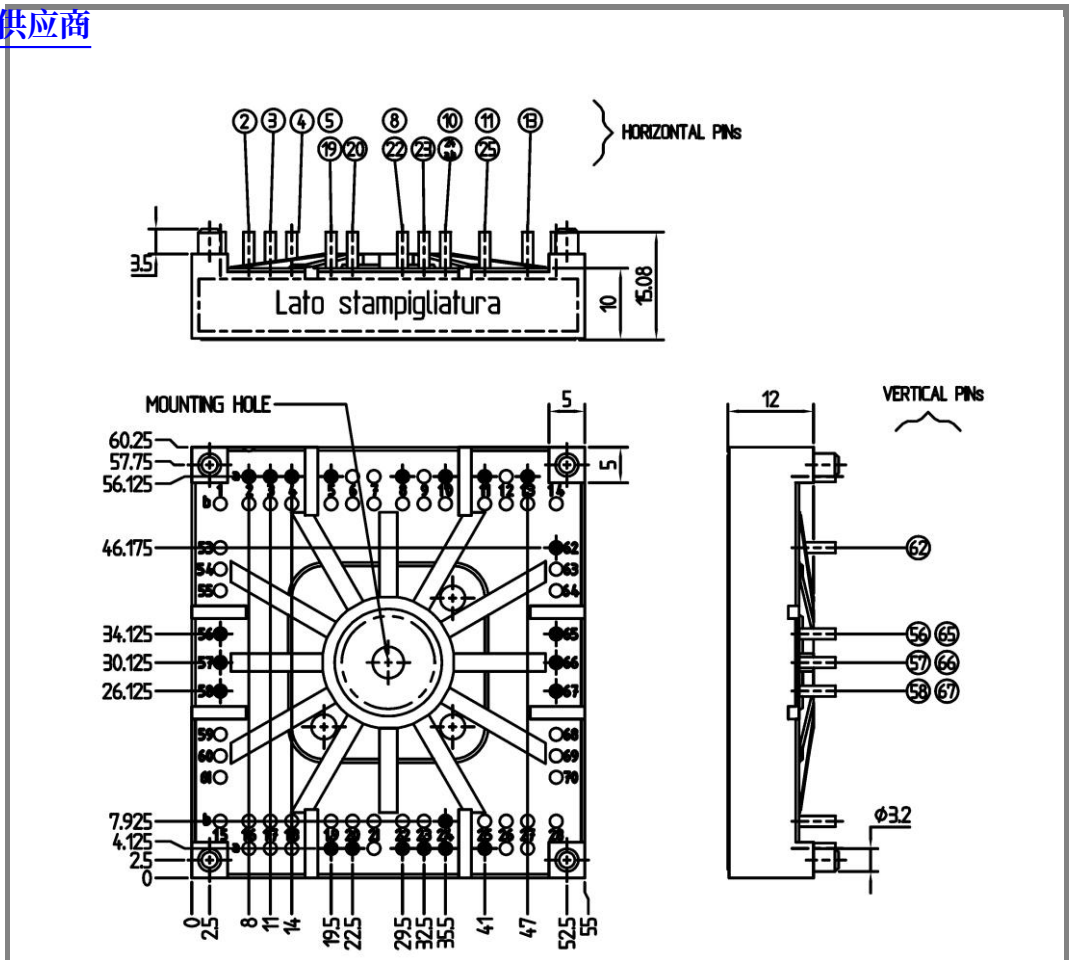

Case T 74

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

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