

**SEMITOP®4**

## 3-phase bridge inverter

**SK 200 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

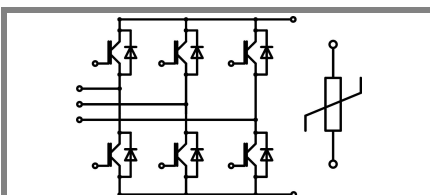
- Inverter up to 42 kVA
- Typ. motor power 18,5 kW

### Remarks

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

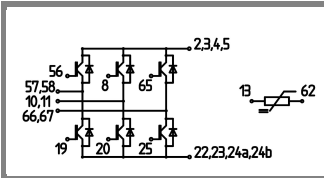
Absolute Maximum Ratings		$T_s = 25^\circ\text{C}$ , unless otherwise specified	
Symbol	Conditions	Values	Units
<b>IGBT - Inverter</b>			
$V_{CES}$		600	V
$I_C$	$T_s = 25 (70)^\circ\text{C}$ , $T_j = 150^\circ\text{C}$	158 (109)	A
$I_C$	$T_s = 25 (70)^\circ\text{C}$ , $T_j = 175^\circ\text{C}$	174 (131)	A
$I_{CRM}$	$t_p = 1 \text{ ms}$	345	A
$V_{GES}$		$\pm 20$	V
$T_j$		-40 ... + 175	$^\circ\text{C}$
<b>Diode - Inverter</b>			
$I_F$	$T_s = 25 (70)^\circ\text{C}$ , $T_j = 150^\circ\text{C}$	91 (67)	A
$I_F$	$T_s = 25 (70)^\circ\text{C}$ , $T_j = 175^\circ\text{C}$	99 (79)	A
$I_{FRM}$	$I_{FRM} = 2xI_{Fnom}$ , $t_p = \text{ms}$		
$T_j$		-40 ... + 175	$^\circ\text{C}$
$T_{sol}$	Terminals, 10 s	260	$^\circ\text{C}$
$T_{stg}$		-40 ... + 125	$^\circ\text{C}$
$V_{isol}$	AC, 1 min.	2500	V

Characteristics		$T_s = 25^\circ\text{C}$ , unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
<b>IGBT - Inverter</b>					
$V_{CE(sat)}$	$I_{Cnom} = 200 \text{ A}$ , $T_j = 25 (125)^\circ\text{C}$		1,45 (1,7)	1,9 (2,15)	V
$V_{GE(th)}$	$V_{GE} = V_{CE}$ , $I_C = 3,2 \text{ mA}$	5	5,8	6,5	V
$V_{CE(TO)}$	$T_j = 25 (150)^\circ\text{C}$		0,6 (0,7)	1 (0,8)	V
$r_{CE}$	$T_j = 25 (150)^\circ\text{C}$		2,75 (4,25)	4 (5,5)	m $\Omega$
$C_{ies}$	$V_{CE} = 25 \text{ V}$ , $V_{GE} = 0 \text{ V}$ , $f = 1 \text{ MHz}$		-	-	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		0,45		K/W
$t_{d(on)}$	under following conditions		-	-	ns
$t_r$	$V_{CC} = 600 \text{ V}$ , $V_{GE} = \pm 15 \text{ V}$		-	-	ns
$t_{d(off)}$	$I_{Cnom} = 200 \text{ A}$ , $T_j = 150^\circ\text{C}$		-	-	ns
$t_f$	$R_{Gon} = R_{Goff} = 4 \Omega$		-	-	ns
$E_{on} (E_{off})$	inductive load		6,8 (7)		mJ
<b>Diode - Inverter</b>					
$V_F = V_{EC}$	$I_F = 200 \text{ A}$ , $T_j = 25 (150)^\circ\text{C}$		1,48 (1,5)		V
$V_{(TO)}$	$T_j = 25 (150)^\circ\text{C}$		0,95 (0,85)		V
$r_T$	$T_j = 25 (150)^\circ\text{C}$		3 (3,5)		m $\Omega$
$R_{th(j-s)}$	per diode		0,8		K/W
$I_{RRM}$	under following conditions		-		A
$Q_{rr}$	$I_{Fnom} = \text{A}$ , $V_R = \text{V}$		-		$\mu\text{C}$
$E_{rr}$	$V_{GE} = 0 \text{ V}$ , $T_j = ^\circ\text{C}$ $di_F/dt = - \text{ A}/\mu\text{s}$		-		mJ
<b>Temperature Sensor</b>					
$R_{ts}$	5 %, $T_r = 25 (100)^\circ\text{C}$		5000(493)		$\Omega$
<b>Mechanical Data</b>					
w			60		g
$M_s$	Mounting torque		3,5		Nm

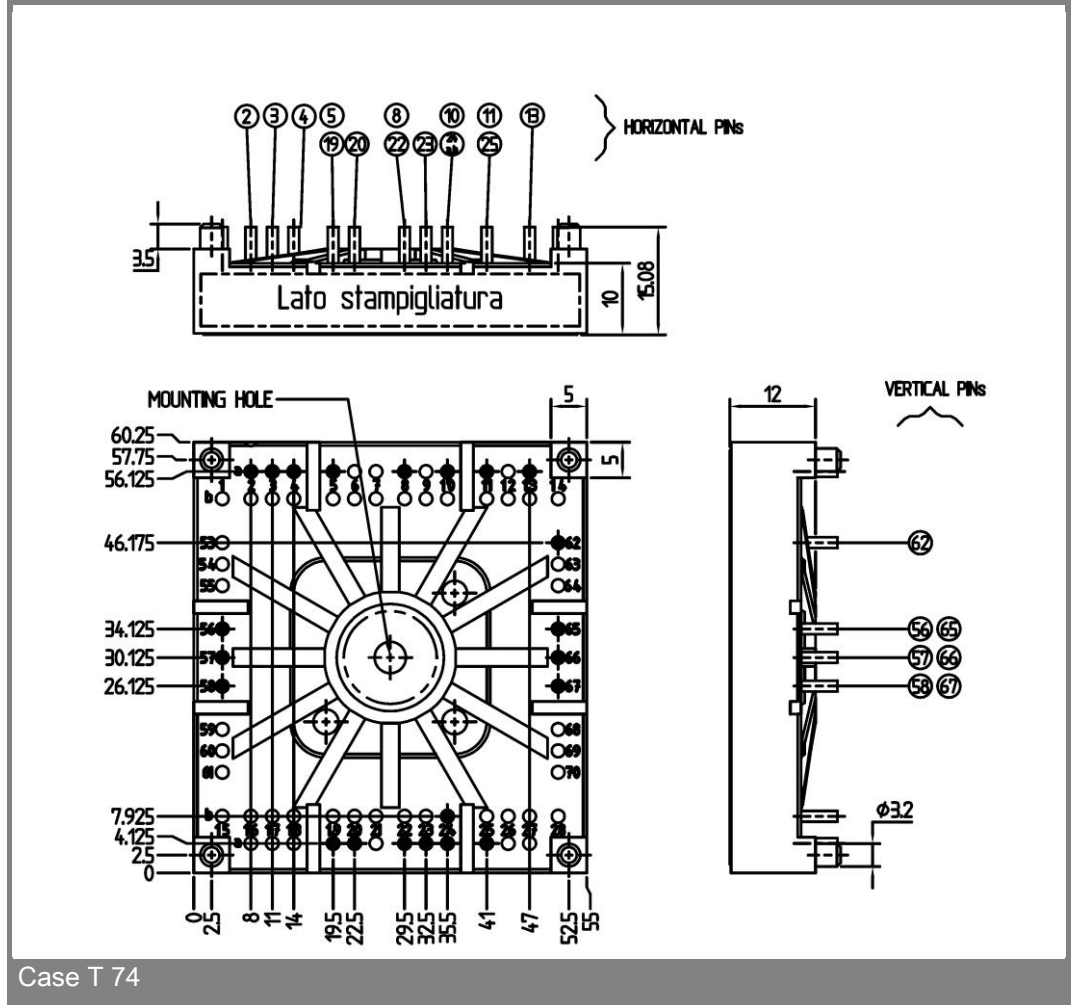


GD-T

# SK 200 GD 066 T



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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