

**SEMITOP<sup>®</sup> 2**

## IGBT Module

### SK 9 GD 065

Preliminary Data

#### Features

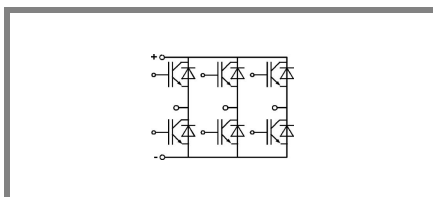
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Ultrafast NPT technology IGBT
- CAL technology FWD

#### Typical Applications

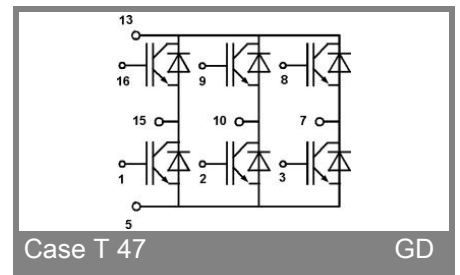
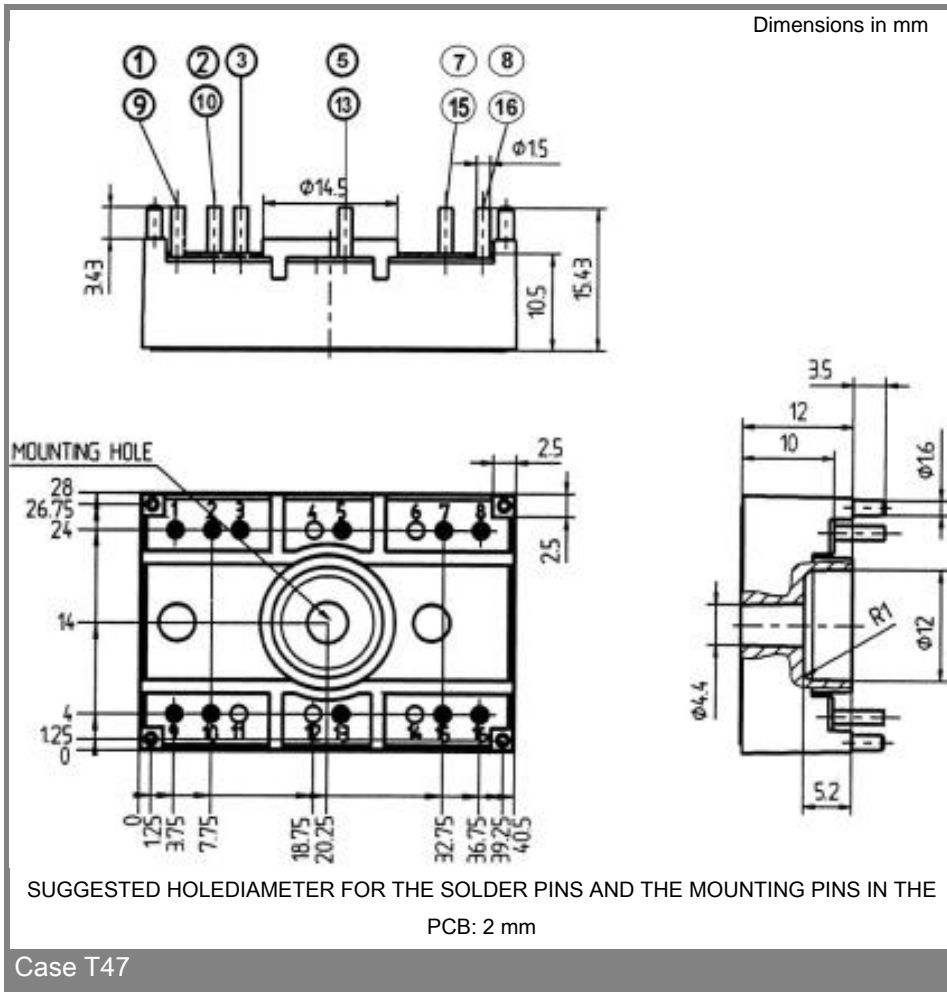
- Switching ( not for linear use )
- Inverter
- Switched mode power supplies
- UPS

Absolute Maximum Ratings		$T_s = 25\text{ °C}$ , unless otherwise specified	
Symbol	Conditions	Values	Units
<b>IGBT</b>			
$V_{CES}$		600	V
$V_{GES}$		$\pm 20$	V
$I_C$	$T_s = 25\text{ (80) °C}$ ;	11 (8)	A
$I_{CM}$	$t_p < 1\text{ ms}$ ; $T_s = 25\text{ (80) °C}$ ;	22 (16)	A
$T_j$		- 40 ... + 150	°C
<b>Inverse/Freewheeling CAL Diode</b>			
$I_F$	$T_s = 25\text{ (80) °C}$ ;	22 (15)	A
$I_{FM} = -I_{CM}$	$t_p < 1\text{ ms}$ ; $T_s = 25\text{ (80) °C}$ ;	44 (30)	A
$T_j$		- 40 ... + 150	°C
$T_{stg}$		- 40 ... + 125	°C
$T_{sol}$	Terminals, 10 s	260	°C
$V_{isol}$	AC 50 Hz, r.m.s. 1 min. / 1 s	2500 / 3000	V

Characteristics		$T_s = 25\text{ °C}$ , unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
<b>IGBT</b>					
$V_{CE(sat)}$	$I_C = 6\text{ A}$ , $T_j = 25\text{ (125) °C}$		2 (2,2)	2,5 (2,7)	V
$V_{GE(th)}$	$V_{CE} = V_{GE}$ ; $I_C = 0,0005\text{ A}$	3	4	5	V
$C_{res}$	$V_{CE} = 25\text{ V}$ ; $V_{GE} = 0\text{ V}$ ; 1 MHz		0,32		nF
$R_{th(j-s)}$	per IGBT			2,6	K/W
	per module				K/W
$t_{d(on)}$	under following conditions: $V_{CC} = 300\text{ V}$ , $V_{GE} = \pm 15\text{ V}$		20		ns
$t_r$	$I_C = 6\text{ A}$ , $T_j = 125\text{ °C}$		25		ns
$t_{d(off)}$	$R_{Gon} = R_{Goff} = 120\text{ }\Omega$		145		ns
$t_f$			25		ns
$E_{on} + E_{off}$	Inductive load		0,34		mJ
<b>Inverse/Freewheeling CAL Diode</b>					
$V_F = V_{EC}$	$I_F = 15\text{ A}$ ; $T_j = 25\text{ (125) °C}$		1,4 (1,4)	1,7 (1,7)	V
$V_{(TO)}$	$T_j = 25\text{ (125) °C}$		1 (0,9)	1,1 (1)	V
$r_T$	$T_j = 25\text{ (125) °C}$		30 (33)	40 (47)	m $\Omega$
$R_{th(j-s)}$				2,3	K/W
$I_{RRM}$	under following conditions: $I_F = 15\text{ A}$ ; $V_R = 300\text{ V}$		22		A
$Q_{rr}$	$di_F/dt = 1100\text{ A}/\mu\text{s}$		1,5		$\mu\text{C}$
$E_{off}$	$V_{GE} = 0\text{ V}$ ; $T_j = 125\text{ °C}$		0,31		mJ
<b>Mechanical data</b>					
M1	mounting torque			2	Nm
w			21		g
Case	SEMITOP <sup>®</sup> 2		T 47		



**GD**



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

This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.