



**SEMISTOP® 2**

## IGBT Module

### SK 15 GD 126

Target Data

#### Features

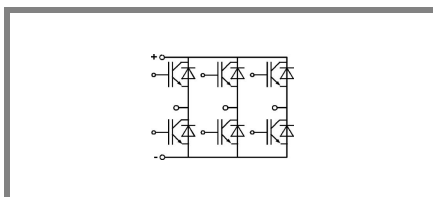
- Fast Trench IGBTs
- Soft freewheeling diodes in CAL High Density technology
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)

#### Typical Applications

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

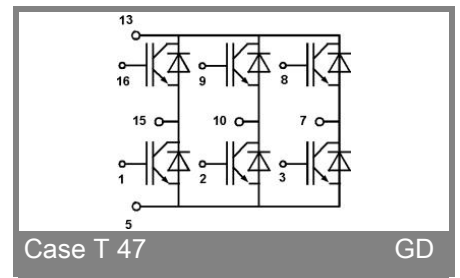
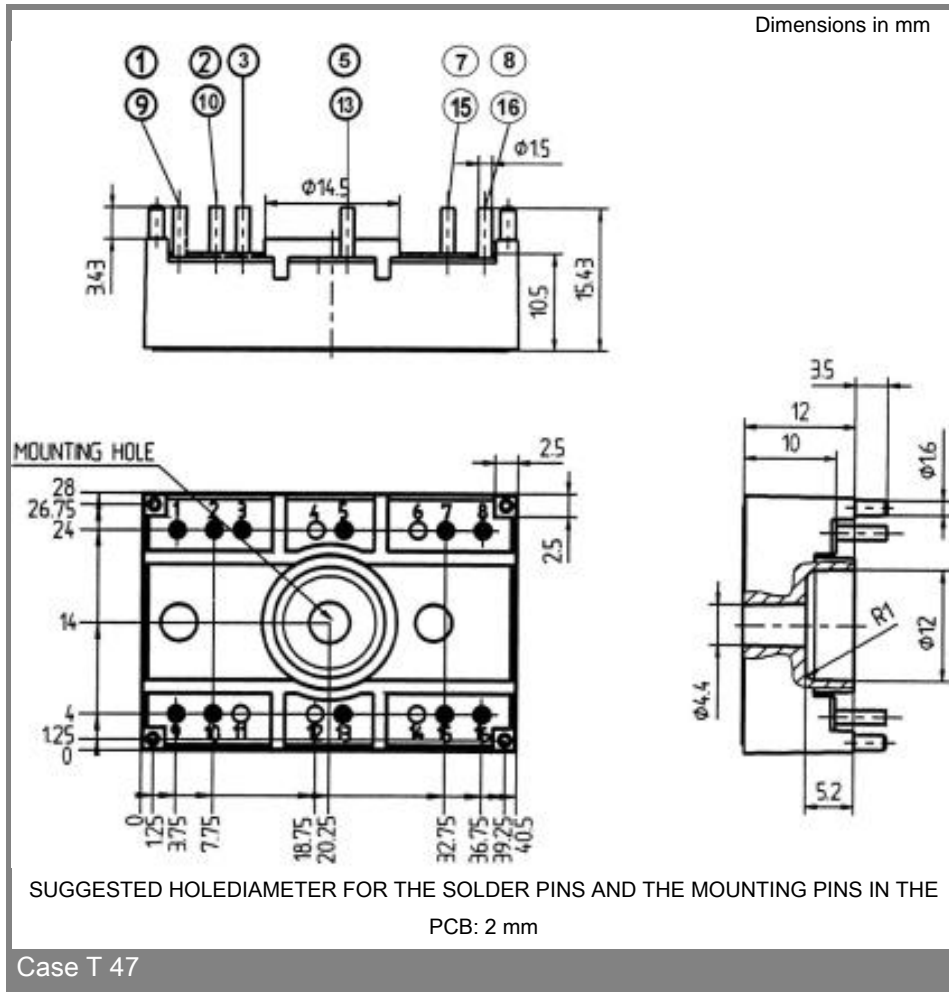
Absolute Maximum Ratings		$T_s = 25\text{ °C}$ , unless otherwise specified	
Symbol	Conditions	Values	Units
<b>IGBT</b>			
$V_{CES}$		1200	V
$V_{GES}$		$\pm 20$	V
$I_C$	$T_s = 25\text{ (80) °C}$ ;	22 (15)	A
$I_{CM}$	$t_p < 1\text{ ms}$ ; $T_s = 25\text{ (80) °C}$ ;	44 (30)	A
$T_j$		- 40 ... + 150	°C
<b>Inverse/Freewheeling CAL diode</b>			
$I_F$	$T_s = 25\text{ (80) °C}$ ;	25 (17)	A
$I_{FM} = -I_{CM}$	$t_p < 1\text{ ms}$ ; $T_s = 25\text{ (80) °C}$ ;	50 (34)	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>					
$V_{CE(sat)}$	$I_C = 15\text{ A}$ , $T_j = 25\text{ (125) °C}$		1,7 (2)	2,1	V
$V_{GE(th)}$	$V_{CE} = V_{GE}$ ; $I_C = 0,0006\text{ A}$	5	5,8	6,5	V
$C_{res}$	$V_{CE} = 25\text{ V}$ ; $V_{GE} = 0\text{ V}$ ; 1 MHz		1,2		nF
$R_{th(j-s)}$	per IGBT			1,6	K/W
	per module				K/W
$t_{d(on)}$	under following conditions: $V_{CC} = 600\text{ V}$ , $V_{GE} = \pm 15\text{ V}$		35		ns
$t_r$	$I_C = 15\text{ A}$ , $T_j = 125\text{ °C}$		20		ns
$t_{d(off)}$	$R_{Gon} = R_{Goff} = 50\ \Omega$		403		ns
$t_f$			192		ns
$E_{on} + E_{off}$	Inductive load		3,56		mJ
<b>Inverse/Freewheeling CAL diode</b>					
$V_F = V_{EC}$	$I_F = 11\text{ A}$ ; $T_j = 25\text{ (125) °C}$		1,6 (1,6)	1,8 (1,8)	V
$V_{(TO)}$	$T_j = (125)\text{ °C}$		1 (0,8)	1,1	V
$r_T$	$T_j = (125)\text{ °C}$		40 (53)	47	mΩ
$R_{th(j-s)}$				2,1	K/W
$I_{RRM}$	under following conditions: $I_F = 15\text{ A}$ ; $V_R = 600\text{ V}$		21		A
$Q_{rr}$	$di_F/dt = 570\text{ A}/\mu\text{s}$		3,5		μC
$E_{off}$	$V_{GE} = 0\text{ V}$ ; $T_j = 125\text{ °C}$		1,4		mJ
<b>Mechanical data</b>					
M1	mounting torque			2	Nm
w			21		g
Case	SEMISTOP® 2		T 47		



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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.