

SEMITOP® 2

IGBT Module

SK 9GD065

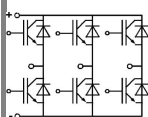
Preliminary Data

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



GD

Absolute Maximum Ratings		$T_s = 25\text{ }^{\circ}\text{C}$, unless otherwise specified		
Symbol	Conditions		Values	Units
IGBT				
V_{CES}	$T_j = 25\text{ }^{\circ}\text{C}$		600	V
I_C	$T_j = 125\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	11	A
		$T_s = 80\text{ }^{\circ}\text{C}$	8	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$		12	A
V_{GES}			± 20	V
t_{psc}	$V_{CC} = 300\text{ V}; V_{GE} \leq 20\text{ V}; T_j = 125\text{ }^{\circ}\text{C}$ $V_{CES} < 600\text{ V}$		10	μs
Inverse Diode				
I_F	$T_j = 125\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	22	A
		$T_s = 80\text{ }^{\circ}\text{C}$	15	A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$		30	A
Module				
$I_{t(RMS)}$				A
T_{vj}			-40 ... +150	$^{\circ}\text{C}$
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
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = 0,2\text{ mA}$	3	4	5	V
I_{CES}	$V_{GE} = 0\text{ V}, V_{CE} = V_{CES}$	$T_j = 25^\circ\text{C}$		0,03	mA
		$T_j = 125^\circ\text{C}$			mA
I_{GES}	$V_{CE} = 0\text{ V}, V_{GE} = 20\text{ V}$	$T_j = 25^\circ\text{C}$		120	nA
		$T_j = 125^\circ\text{C}$			nA
V_{CE0}		$T_j = 25^\circ\text{C}$		1,2	V
		$T_j = 125^\circ\text{C}$		1,1	V
r_{CE}	$V_{GE} = 15\text{ V}$	$T_j = 25^\circ\text{C}$		133	$\text{m}\Omega$
		$T_j = 125^\circ\text{C}$		183	$\text{m}\Omega$
$V_{CE(sat)}$	$I_{Cnom} = 6\text{ A}, V_{GE} = 15\text{ V}$	$T_j = 25^\circ\text{C}_{chiplev.}$		2	V
		$T_j = 125^\circ\text{C}_{chiplev.}$		2,2	V
C_{ies}	$V_{CE} = 25, V_{GE} = 0\text{ V}$			0,35	nF
C_{oes}				0,038	nF
C_{res}				0,023	nF
$t_{d(on)}$	$R_{Gon} = 120\ \Omega$			20	ns
t_r				25	ns
E_{on}	$R_{Goff} = 120\ \Omega$	$V_{CC} = 300\text{ V}$ $I_C = 6\text{ A}$		0,22	mJ
$t_{d(off)}$		$T_j = 125^\circ\text{C}$		145	ns
t_f		$V_{GE} = \pm 15\text{ V}$		25	ns
E_{off}				0,12	mJ
$R_{th(j-s)}$	per IGBT			2,6	K/W



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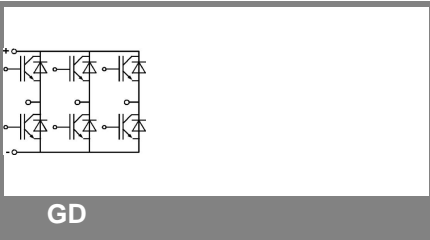
Typical Applications*

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

Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 15 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		1,4	1,7	V
		T _j = 125 °C _{chiplev.}		1,4	1,7	V
V _{F0}		T _j = 25 °C		1	1,1	V
		T _j = 125 °C		0,9	1	V
r _F		T _j = 25 °C		30	40	mΩ
		T _j = 125 °C		33	47	mΩ
I _{RRM}	I _F = 15 A	T _j = 125 °C		22		A
Q _{rr}	di/dt = 1100 A/μs			1,5		μC
E _{rr}	V _{CC} = 300V			0,31		mJ
R _{th(j-s)D}	per diode				2,3	K/W
M _s	to heat sink				2	Nm
w				21		g

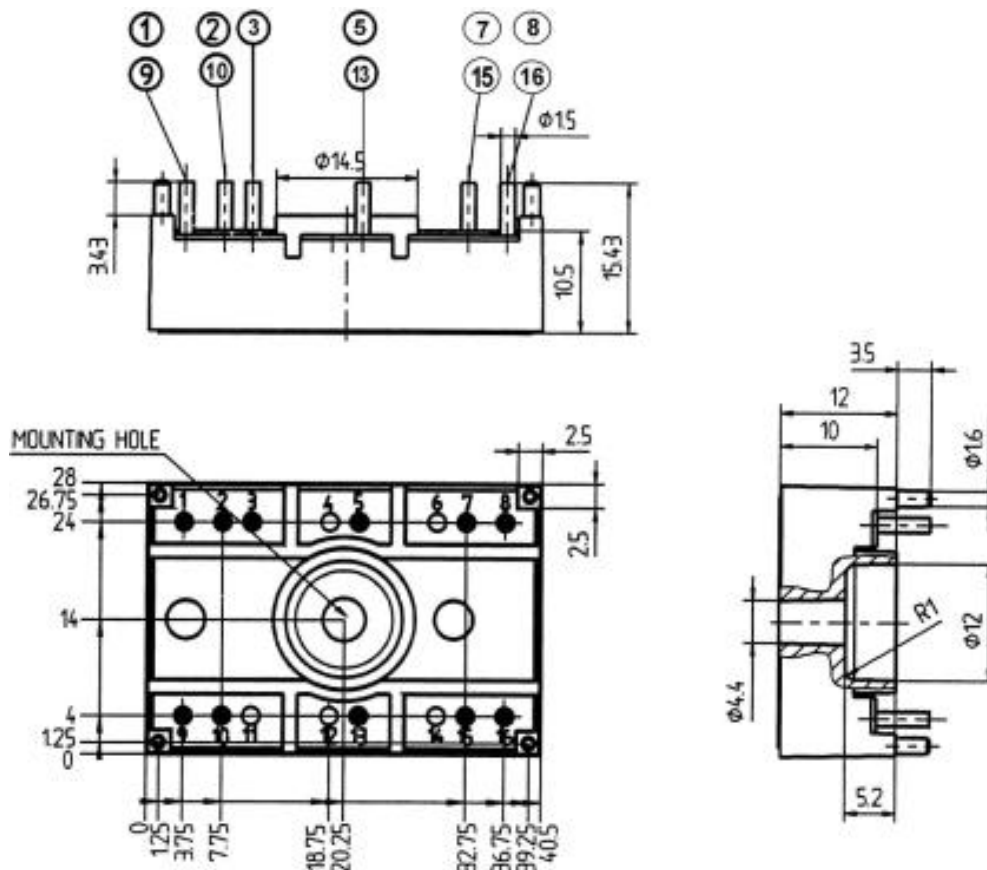
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.

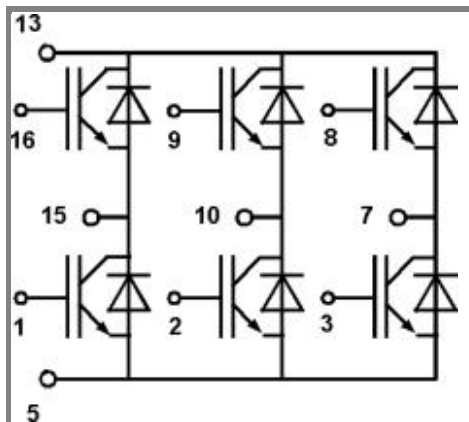


UL recognized file

no. E 63 532



Case T47 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 47

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