

SK 15GD126



SEMITOR[®] 2

IGBT Module

SK 15GD126

Preliminary 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*

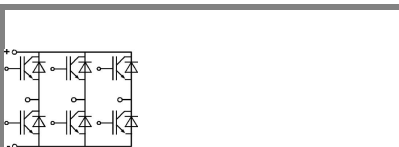
- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS

Remarks

- V_F = chip level value

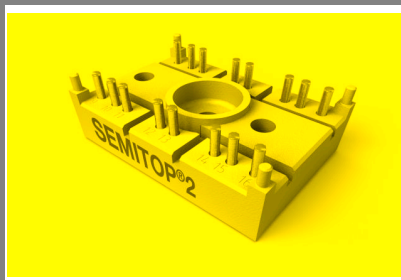
Absolute Maximum Ratings		$T_s = 25^\circ\text{C}$, unless otherwise specified		
Symbol	Conditions	Values		Units
IGBT				
V_{CES}	$T_j = 25^\circ\text{C}$	1200		V
I_C	$T_j = 150^\circ\text{C}$	$T_s = 25^\circ\text{C}$	22	A
		$T_s = 80^\circ\text{C}$	15	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$	30		A
V_{GES}		± 20		V
t_{psc}	$V_{CC} = 600\text{ V}; V_{GE} \leq 20\text{ V}; T_j = 125^\circ\text{C}$ $V_{CES} < 1200\text{ V}$	10		μs
Inverse Diode				
I_F	$T_j = 150^\circ\text{C}$	$T_s = 25^\circ\text{C}$	25	A
		$T_s = 80^\circ\text{C}$	17	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					
$V_{GE(th)}$	$V_{GE} = V_{CE}; I_C = 0,6\text{ mA}$	5	5,8	6,5	V
I_{CES}	$V_{GE} = 1200\text{ V}, V_{CE} = V_{CES}$	$T_j = 25^\circ\text{C}$	0,1		mA
		$T_j = 125^\circ\text{C}$			mA
I_{GES}	$V_{CE} = 0\text{ V}, V_{GE} = 20\text{ V}$	$T_j = 125^\circ\text{C}$		120	nA
V_{CE0}		$T_j = 25^\circ\text{C}$	1		V
		$T_j = 125^\circ\text{C}$	0,9		V
r_{CE}	$V_{GE} = 15\text{ V}$	$T_j = 25^\circ\text{C}$	45		m Ω
		$T_j = 125^\circ\text{C}$	70		m Ω
$V_{CE(sat)}$	$I_{Cnom} = 15\text{ A}, V_{GE} = 15\text{ V}$	$T_j = 25^\circ\text{C}_{chiplev.}$	1,7	2,1	V
		$T_j = 125^\circ\text{C}_{chiplev.}$	2		V
C_{ies}	$V_{CE} = 25, V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$	1,2		nF
C_{oes}			0,058		nF
C_{res}			0,048		nF
$t_{d(on)}$	$R_{Gon} = 50\ \Omega$	$V_{CC} = 600\text{ V}$ $I_C = 15\text{ A}$	35		ns
t_r			20		ns
E_{on}			2		mJ
$t_{d(off)}$	$R_{Goff} = 50\ \Omega$	$T_j = 125^\circ\text{C}$ $V_{GE} = \pm 15\text{ V}$	403		ns
t_f			192		ns
E_{off}			1,56		mJ
$R_{th(j-s)}$	per IGBT			1,6	K/W



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SEMISTOP® 2

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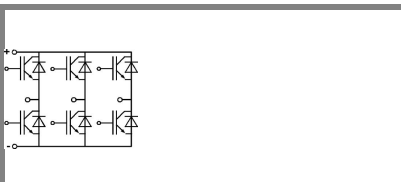
- V_F = chip level value

Characteristics

Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 11 \text{ A}; V_{GE} = 0 \text{ V}$	$T_j = 25 \text{ }^\circ\text{C}_{chiplev.}$	1,6	1,8	V
		$T_j = 125 \text{ }^\circ\text{C}_{chiplev.}$	1,6	1,8	V
V_{F0}		$T_j = 25 \text{ }^\circ\text{C}$	1	1,1	V
		$T_j = 125 \text{ }^\circ\text{C}$	0,8		V
r_F		$T_j = 25 \text{ }^\circ\text{C}$	40	47	m Ω
		$T_j = 125 \text{ }^\circ\text{C}$	53		m Ω
I_{RRM}	$I_F = 15 \text{ A}$	$T_j = 125 \text{ }^\circ\text{C}$	21		A
Q_{rr}	$di/dt = 570 \text{ A}/\mu\text{s}$		3,5		μC
E_{rr}	$V_{CC} = 600\text{V}$		1,4		mJ
$R_{th(j-s)D}$	per diode			2,1	K/W
M_s	to heat sink M1			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.

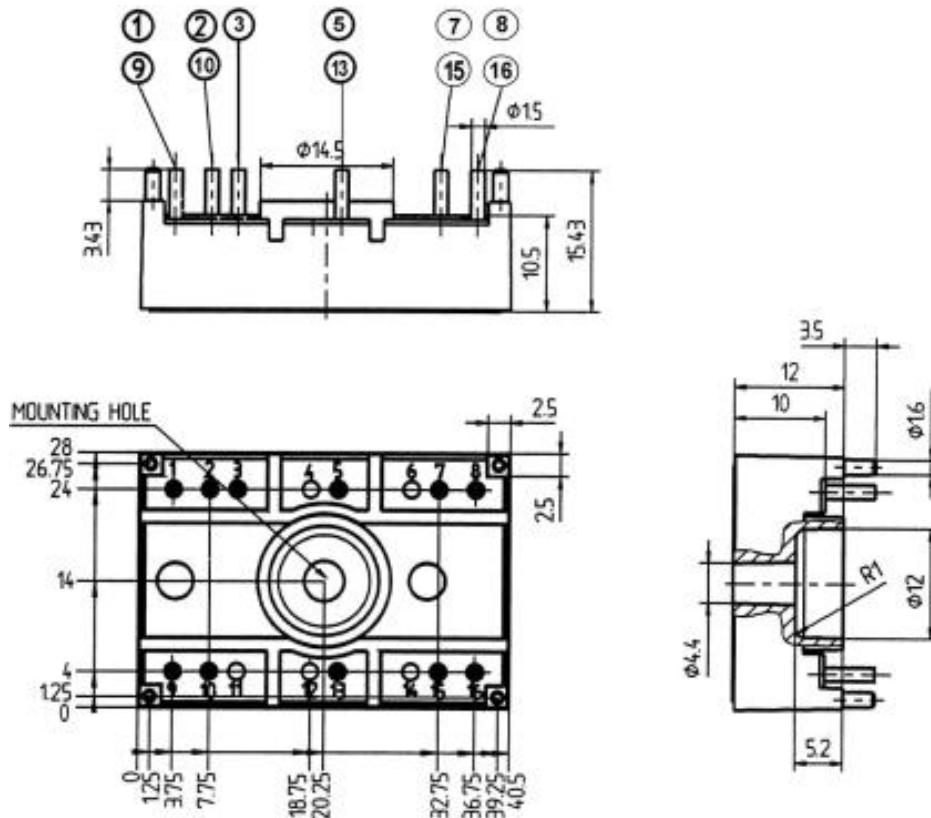


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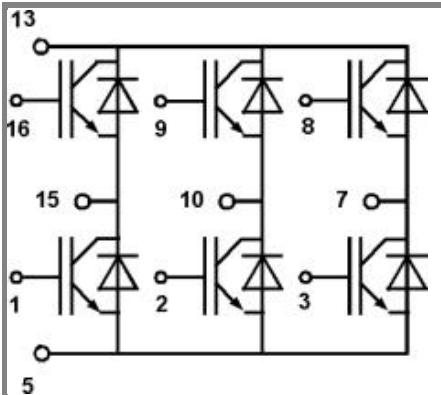
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UL recognized file

no. E 63 532



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



Case T47

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