



SEMITOP[®] 2

IGBT Module

SK 15GD126

Preliminary Data

Features

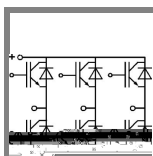
- Fast Trench IGBTs
- Soft freewheeling diodes in CAL High Density technology
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)

Typical Applications

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

Remarks

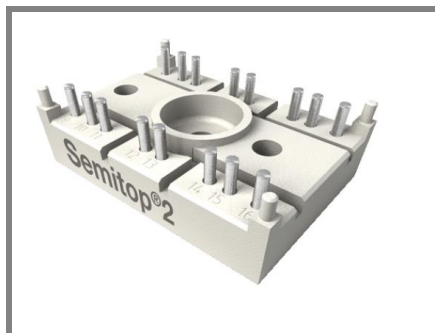
- V_F = chip level value



GD

Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified		
Symbol	Conditions	Values		Units
IGBT				
V_{CES}	$T_j = 25\text{ °C}$	1200		V
I_C	$T_j = 150\text{ °C}$	$T_s = 25\text{ °C}$	22	A
		$T_s = 80\text{ °C}$	15	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$	30		A
V_{GES}		± 20		V
t_{psc}	$V_{CC} = 600\text{ V}; V_{GE} \leq 20\text{ V}; T_j = 125\text{ °C}$ $V_{CES} < 1200\text{ V}$	10		µs
Inverse Diode				
I_F	$T_j = 150\text{ °C}$	$T_s = 25\text{ °C}$	25	A
		$T_s = 80\text{ °C}$	17	A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$	30		A
Module				
$I_{t(RMS)}$				A
T_{vj}		-40 ... +150		°C
T_{stg}		-40 ... +125		°C
V_{isol}	AC, 1 min.	2500		V

Characteristics		$T_s = 25\text{ °C}$, 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}	$V_{GE} = 1200\text{ V}, V_{CE} = V_{CES}$	$T_j = 25\text{ °C}$			0,1	mA
		$T_j = 125\text{ °C}$				mA
I_{GES}	$V_{CE} = 0\text{ V}, V_{GE} = 20\text{ V}$	$T_j = 125\text{ °C}$		120	nA	
V_{CE0}		$T_j = 25\text{ °C}$	1		V	
		$T_j = 125\text{ °C}$	0,9		V	
r_{CE}	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}$	45		mΩ	
		$T_j = 125\text{ °C}$	70		mΩ	
$V_{CE(sat)}$	$I_{Cnom} = 15\text{ A}, V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}_{chiplev.}$	1,7	2,1	V	
		$T_j = 125\text{ °C}_{chiplev.}$	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	
$t_{d(on)}$	$R_{Gon} = 50\text{ } \Omega$	$V_{CC} = 600\text{ V}$ $I_{Cnom} = 15\text{ A}$	35		ns	
t_r			20		ns	
E_{on}	$R_{Goff} = 50\text{ } \Omega$	$T_j = 125\text{ °C}$ $V_{GE} = \pm 15\text{ V}$	2		mJ	
$t_{d(off)}$			403		ns	
t_f			192		ns	
E_{off}			1,56		mJ	
$R_{th(j-s)}$	per IGBT			1,6	K/W	



SEMITOP[®] 2

IGBT Module

SK 15GD126

Preliminary Data

Features

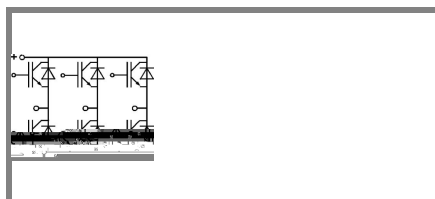
- Fast Trench IGBTs
- Soft freewheeling diodes in CAL High Density technology
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)

Typical Applications

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

Remarks

- V_F = chip level value



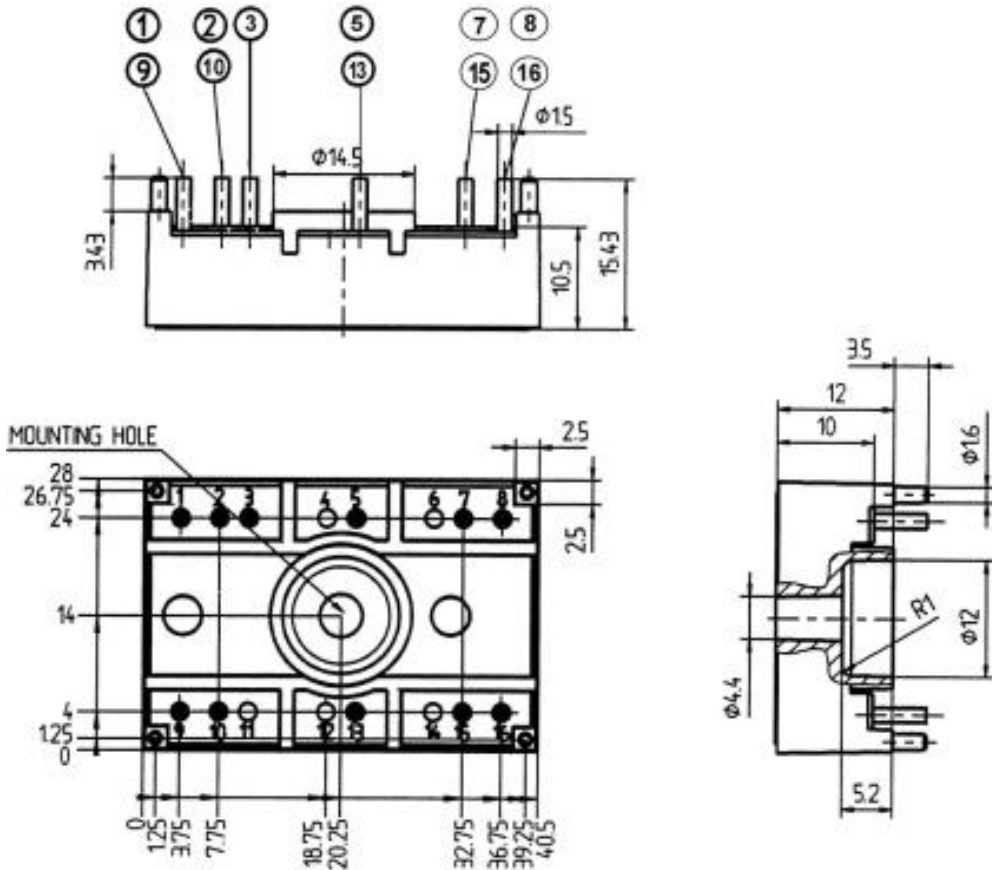
GD

Characteristics

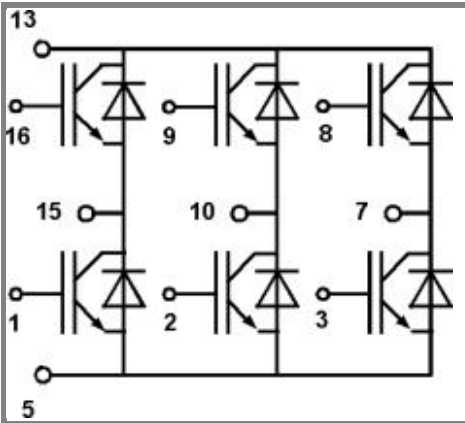
Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 11 \text{ A}; V_{GE} = 0 \text{ V}$	$T_j = 25 \text{ }^\circ\text{C}_{\text{chiplev.}}$	1,6	1,8	V
		$T_j = 125 \text{ }^\circ\text{C}_{\text{chiplev.}}$	1,6	1,8	V
V_{F0}		$T_j = 25 \text{ }^\circ\text{C}$	1	1,1	V
		$T_j = 125 \text{ }^\circ\text{C}$	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}	$I_{Fnom} = 15 \text{ A}$		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.

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



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



Case T47

GD