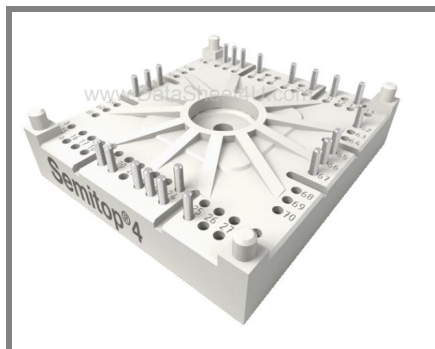


SK75GD126T



SEMITOP[®] 4

IGBT Module

SK75GD126T

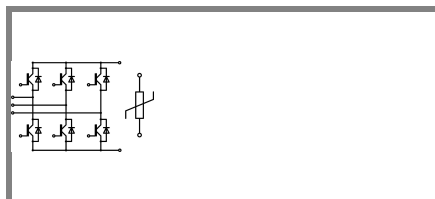
Target Data

Features

- One screw mounting module
- Fully compatible with SEMITOP[®]1,2,3
- Improved thermal performances by aluminium oxide substrate
- Trench IGBT technology
- CAL technology FWD
- Integrated NTC temperature sensor

Typical Applications

- Inverter up to 42 kVA
- Typ. motor power 18,5 kW

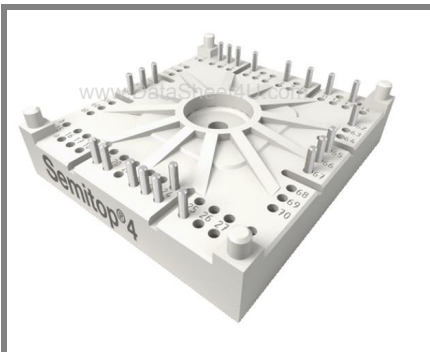


GD-T

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	$T_j = 150\text{ °C}$	$T_s = 25\text{ °C}$	88 A
		$T_s = 70\text{ °C}$	67 A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$	140	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	$T_j = 150\text{ °C}$	$T_s = 25\text{ °C}$	91 A
		$T_s = 70\text{ °C}$	68 A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$	150	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		$T_s = 25\text{ °C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = 3\text{ mA}$	5	5,8	6,5	V
I_{CES}	$V_{GE} = 0\text{ V}, V_{CE} = V_{CES}$	$T_j = 25\text{ °C}$			mA
		$T_j = 125\text{ °C}$			mA
I_{GES}	$V_{CE} = 0\text{ V}, V_{GE} = 20\text{ V}$	$T_j = 25\text{ °C}$		1200	nA
		$T_j = 125\text{ °C}$			nA
V_{CE0}		$T_j = 25\text{ °C}$	1	1,2	V
		$T_j = 125\text{ °C}$	0,9	1,1	V
r_{CE}	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}$	10	13	$\text{m}\Omega$
		$T_j = 125\text{ °C}$	16	19	$\text{m}\Omega$
$V_{CE(sat)}$	$I_{Cnom} = 75\text{ A}, V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}_{chiplev.}$	1,7	2,1	V
		$T_j = 125\text{ °C}_{chiplev.}$	2	2,4	V
C_{ies}	$V_{CE} = 25, V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$	5		nF
C_{oes}			0,26		nF
C_{res}			0,23		nF
$t_{d(on)}$	$R_{Gon} = 8,2\ \Omega$ $di/dt = 1340\text{ A}/\mu\text{s}$	$V_{CC} = 600\text{ V}$ $I_{Cnom} = 75\text{ A}$	62		ns
t_r			32		ns
E_{on}	$R_{Goff} = 8,2\ \Omega$ $di/dt = 1340\text{ A}/\mu\text{s}$	$T_j = 125\text{ °C}$ $V_{GE} = -7/+15\text{ V}$	13,6		mJ
$t_{d(off)}$			514		ns
t_f			90		ns
E_{off}			10		mJ
$R_{th(j-s)}$	per IGBT		0,5		K/W

SK75GD126T



SEMITOP® 4

IGBT Module

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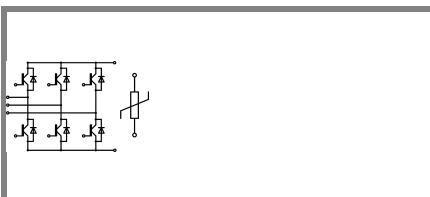
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GD-T

Characteristics

Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 75 \text{ A}; V_{GE} = 0 \text{ V}$		$T_j = 25 \text{ }^\circ\text{C}_{\text{chiplev.}}$	1,46	V
			$T_j = 125 \text{ }^\circ\text{C}_{\text{chiplev.}}$	1,4	V
V_{F0}			$T_j = 25 \text{ }^\circ\text{C}$	1,05	V
			$T_j = 125 \text{ }^\circ\text{C}$	0,95	V
r_F			$T_j = 25 \text{ }^\circ\text{C}$	5,5	mΩ
			$T_j = 125 \text{ }^\circ\text{C}$	6	mΩ
I_{RRM}	$I_{Fnom} = 75 \text{ A}$	$T_j = 125 \text{ }^\circ\text{C}$	70		A
Q_{rr}	$di/dt = 1340 \text{ A}/\mu\text{s}$		20		μC
E_{rr}	$V_{CC} = 600\text{V}$		6		mJ
$R_{th(j-s)D}$	per diode		0,7		K/W
M_s	to heat sink			3,5	Nm
w			60		g
Temperature sensor					
R_{100}	$T_s = 100^\circ\text{C} (R_{25} = 5\text{k}\Omega)$		493±5%		Ω

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.

