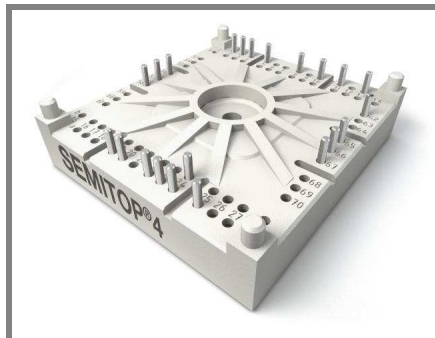


SK100GD126T



SEMITOP® 4

IGBT Module

SK100GD126T

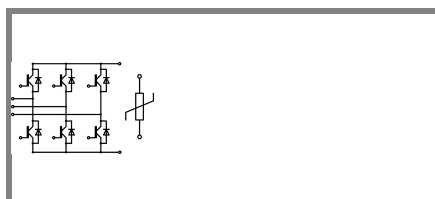
Preliminary Data

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 50 kVA
- Typ. motor power 22 kW

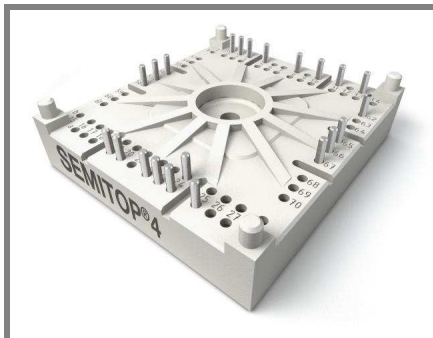


GD-T

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	$T_j = 150\text{ °C}$	$T_s = 25\text{ °C}$	114		A
		$T_s = 70\text{ °C}$	86		A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$	200			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	$T_j = 150\text{ °C}$	$T_s = 25\text{ °C}$	118		A
		$T_s = 70\text{ °C}$	88		A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$	200			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					
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = 4\text{ mA}$	5	5,8	6,5	V
I_{CES}	$V_{GE} = 0\text{ V}, V_{CE} = V_{CES}$	$T_j = 25\text{ °C}$	0,014		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}	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}$	7	9,5	mΩ
		$T_j = 125\text{ °C}$	11	14	mΩ
$V_{CE(sat)}$	$I_{Cnom} = 100\text{ A}, V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}_{chiplev.}$	1,7	2,15	V
		$T_j = 125\text{ °C}_{chiplev.}$	2,1	2,45	V
C_{ies}	$V_{CE} = 25, V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$	7,2		nF
C_{oes}			0,37		nF
C_{res}			0,32		nF
$t_{d(on)}$	$R_{Gon} = 4\text{ }\Omega$ $di/dt = 2250\text{ A}/\mu\text{s}$	$V_{CC} = 600\text{ V}$ $I_C = 100\text{ A}$	115		ns
t_r			28		ns
E_{on}	$R_{Goff} = 4\text{ }\Omega$ $di/dt = 2250\text{ A}/\mu\text{s}$	$T_j = 125\text{ °C}$ $V_{GE} = -7/+15\text{ V}$	9,8		mJ
$t_{d(off)}$			509		ns
t_f			100		ns
E_{off}			11,7		mJ
$R_{th(j-s)}$	per IGBT	0,4			K/W

SK100GD126T



SEMITOP® 4

IGBT Module

SK100GD126T

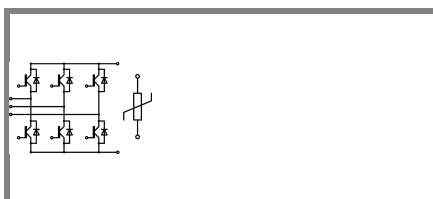
Preliminary Data

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Typical Applications*

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- Typ. motor power 22 kW

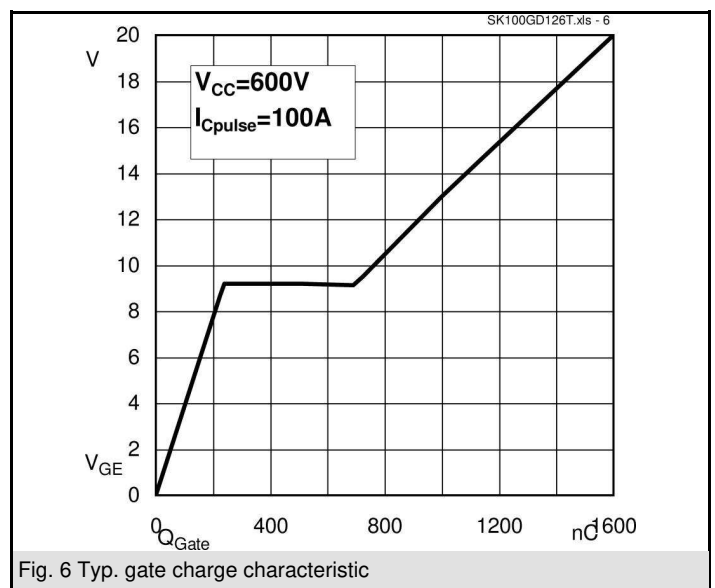
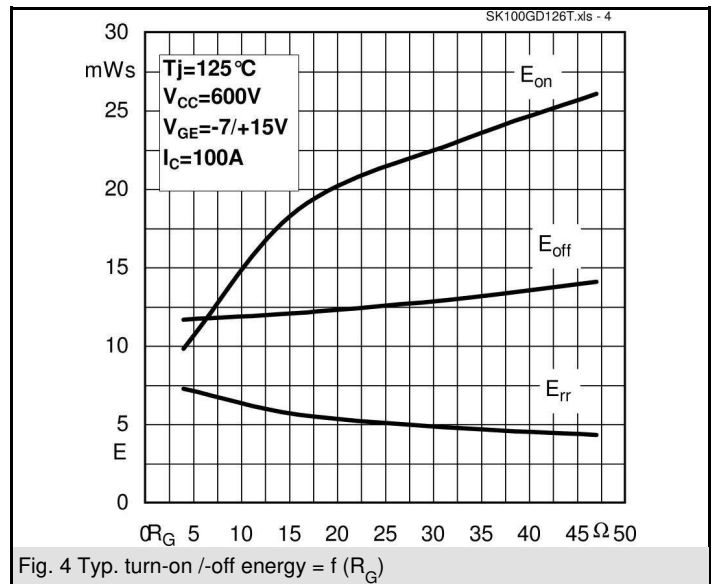
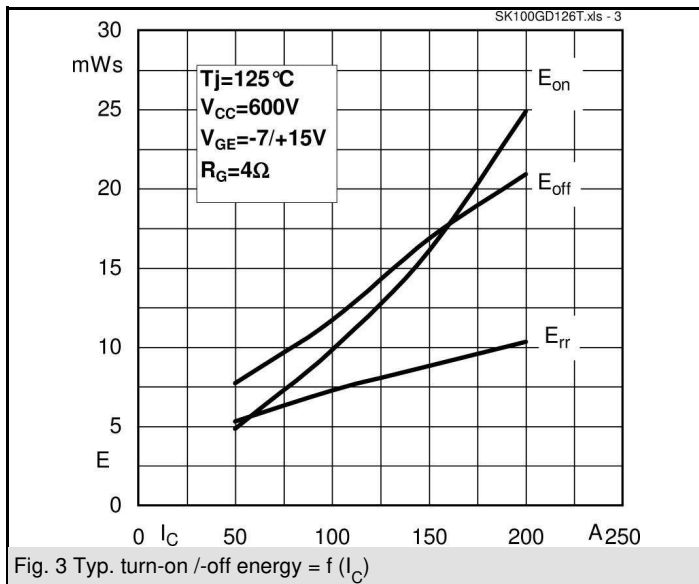
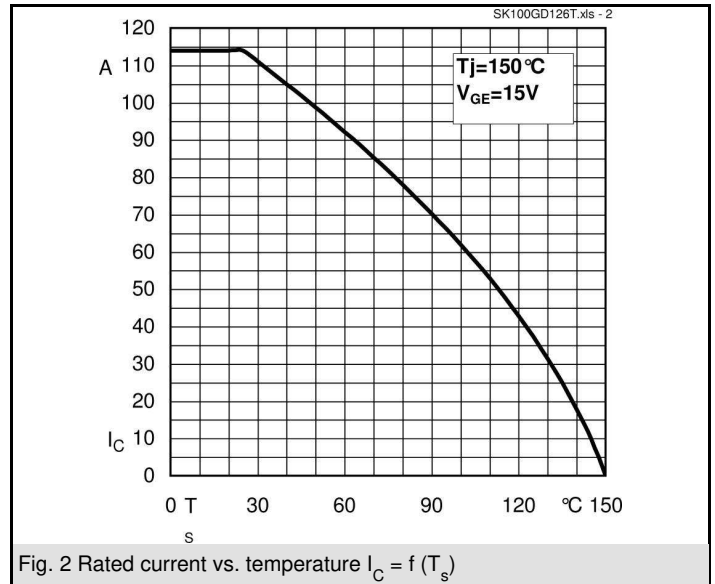
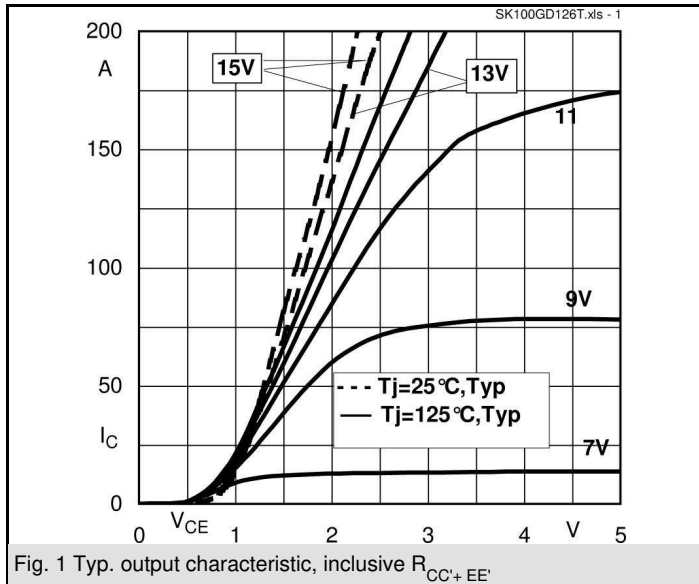


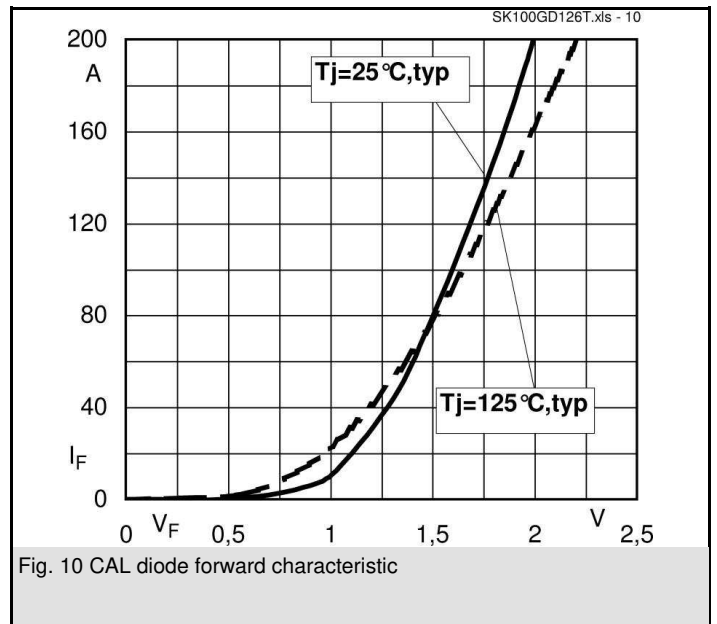
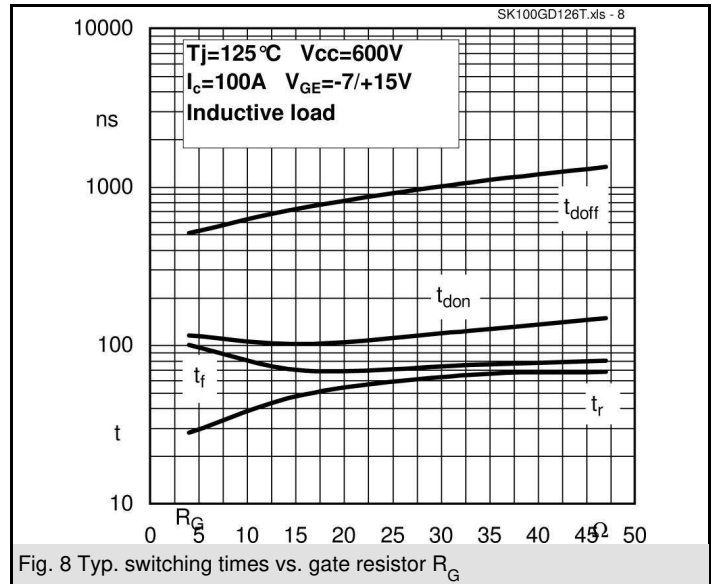
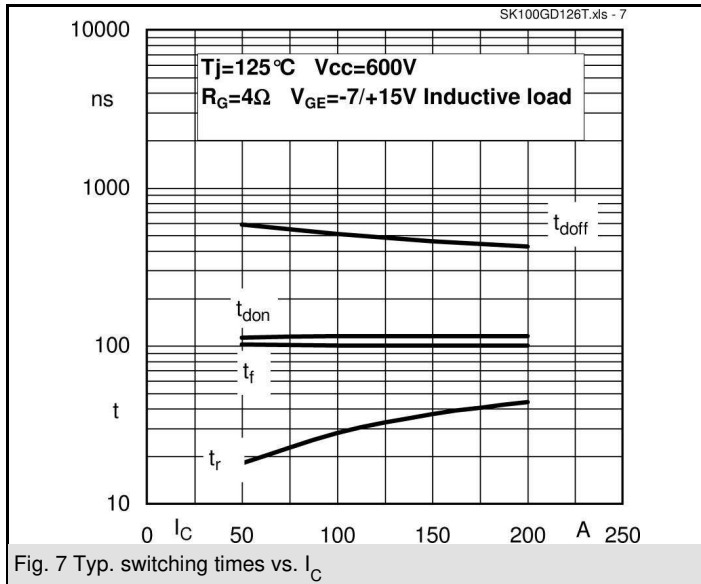
GD-T

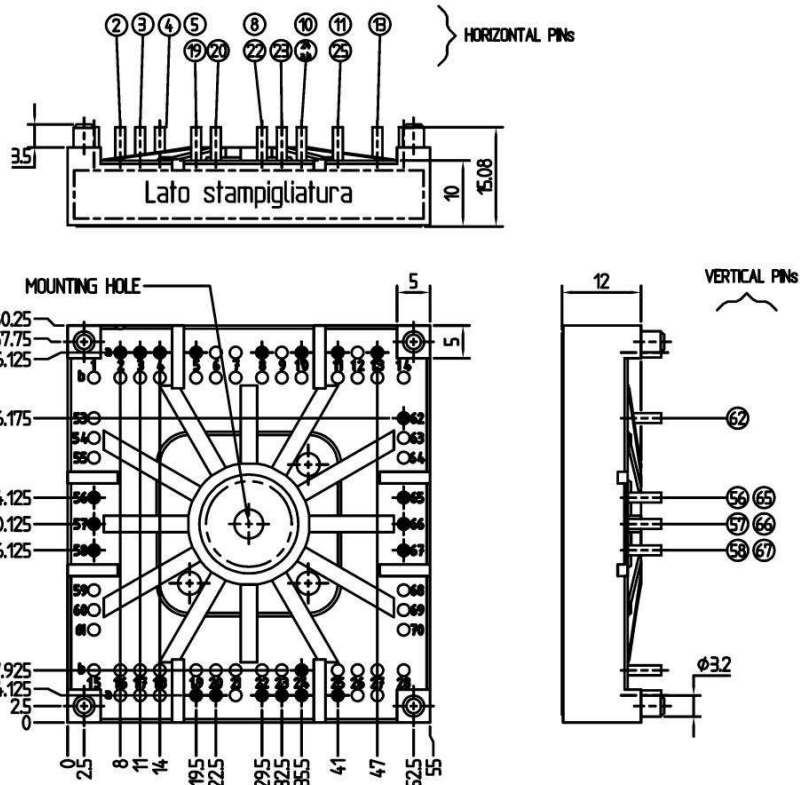
Characteristics			min.	typ.	max.	Units
Symbol	Conditions					
Inverse Diode						
$V_F = V_{EC}$	$I_{Fnom} = 100 \text{ A}; V_{GE} = 0 \text{ V}$	$T_j = 25 \text{ }^\circ\text{C}_{chiplev.}$		1,5		V
		$T_j = 125 \text{ }^\circ\text{C}_{chiplev.}$		1,5		V
V_{F0}		$T_j = 25 \text{ }^\circ\text{C}$		1,18		V
		$T_j = 125 \text{ }^\circ\text{C}$		1		V
r_F		$T_j = 25 \text{ }^\circ\text{C}$		3,2		mΩ
		$T_j = 125 \text{ }^\circ\text{C}$		5		mΩ
I_{RRM}	$I_F = 100 \text{ A}$	$T_j = 125 \text{ }^\circ\text{C}$		100		A
Q_{rr}	$di/dt = 2250 \text{ A}/\mu\text{s}$			20		μC
E_{rr}	$V_{CC} = 600\text{V}$			7,3		mJ
$R_{th(j-s)D}$	per diode			0,55		K/W
M_s	to heat sink		2,5		2,75	Nm
w				60		g
Temperature sensor						
R_{100}	$T_s = 100 \text{ }^\circ\text{C} (R_{25} = 5\text{k}\Omega)$			493±5%		Ω

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

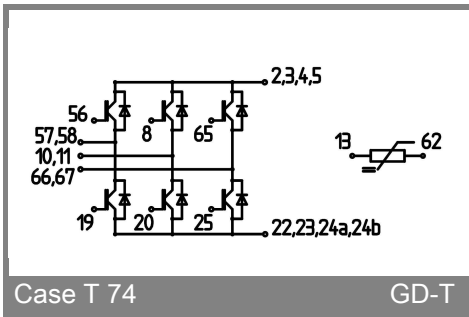
* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and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







Case T74 (Suggested hole diameter for the solder pins in the circuit board: 2mm. Suggested hole diameter for the mounting pins in the circuit board: 3,6mm)



Case T 74

GD-T