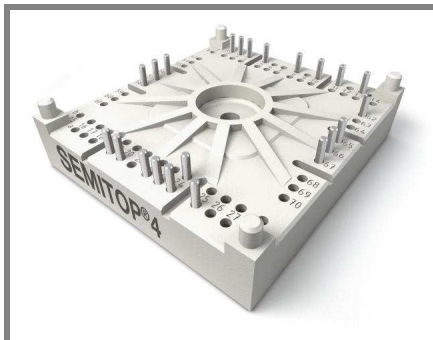


# SK50GD126T



**SEMITOP® 4**

## IGBT Module

**SK50GD126T**

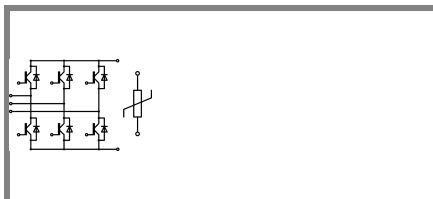
Preliminary Data

### 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 28 kVA
- Typ. motor power 15 kW

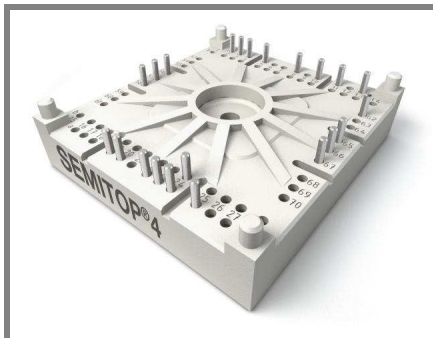


**GD-T**

Absolute Maximum Ratings		$T_s = 25\text{ °C}$ , unless otherwise specified		
Symbol	Conditions	Values		Units
<b>IGBT</b>				
$V_{CES}$	$T_j = 25\text{ °C}$	1200		V
$I_C$	$T_j = 150\text{ °C}$	$T_s = 25\text{ °C}$	68	A
		$T_s = 70\text{ °C}$	52	A
$I_{CRM}$	$I_{CRM} = 2 \times I_{Cnom}$	100		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
<b>Inverse Diode</b>				
$I_F$	$T_j = 150\text{ °C}$	$T_s = 25\text{ °C}$	62	A
		$T_s = 70\text{ °C}$	46	A
$I_{FRM}$	$I_{FRM} = 2 \times I_{Fnom}$	100		A
<b>Module</b>				
$I_{t(RMS)}$				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
<b>IGBT</b>					
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = 2\text{ mA}$	5	5,8	6,5	V
$I_{CES}$	$V_{GE} = 0\text{ V}, V_{CE} = V_{CES}$	$T_j = 25\text{ °C}$	0,0067		mA
		$T_j = 125\text{ °C}$			mA
$I_{GES}$	$V_{CE} = 0\text{ V}, V_{GE} = 20\text{ V}$	$T_j = 25\text{ °C}$	600		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
$r_{CE}$	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}$	14	19	mΩ
		$T_j = 125\text{ °C}$	22	27	mΩ
$V_{CE(sat)}$	$I_{Cnom} = 50\text{ A}, V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}_{chiplev.}$	1,7	2,1	V
		$T_j = 125\text{ °C}_{chiplev.}$	2	2,45	V
$C_{ies}$	$V_{CE} = 25, V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$	3,6		nF
$C_{oes}$			0,188		nF
$C_{res}$			0,163		nF
$t_{d(on)}$	$R_{Gon} = 8\text{ }\Omega$	$V_{CC} = 600\text{ V}$ $I_C = 50\text{ A}$	115		ns
$t_r$			28		ns
$E_{on}$			4,6		mJ
$t_{d(off)}$	$R_{Goff} = 8\text{ }\Omega$	$T_j = 125\text{ °C}$ $V_{GE} = -7 / +15\text{ V}$	509		ns
$t_f$			100		ns
$E_{off}$			6,3		mJ
$R_{th(j-s)}$	per IGBT	0,6		K/W	

# SK50GD126T



SEMITOP® 4

## IGBT Module

SK50GD126T

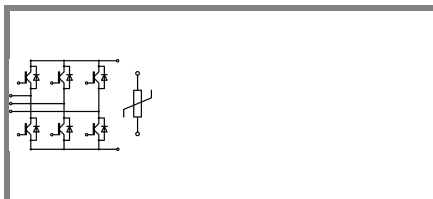
Preliminary Data

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- Typ. motor power 15 kW

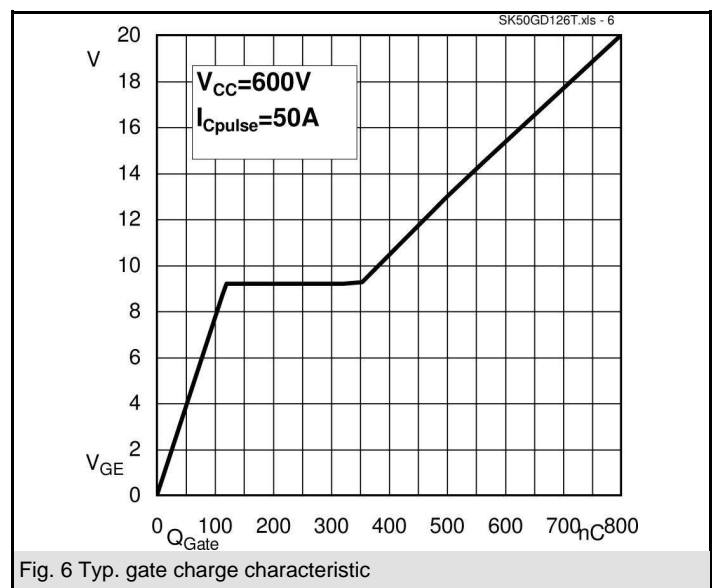
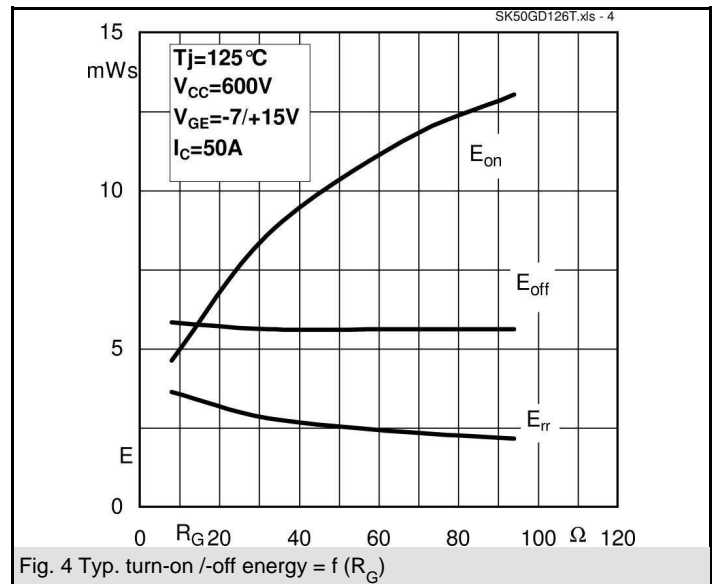
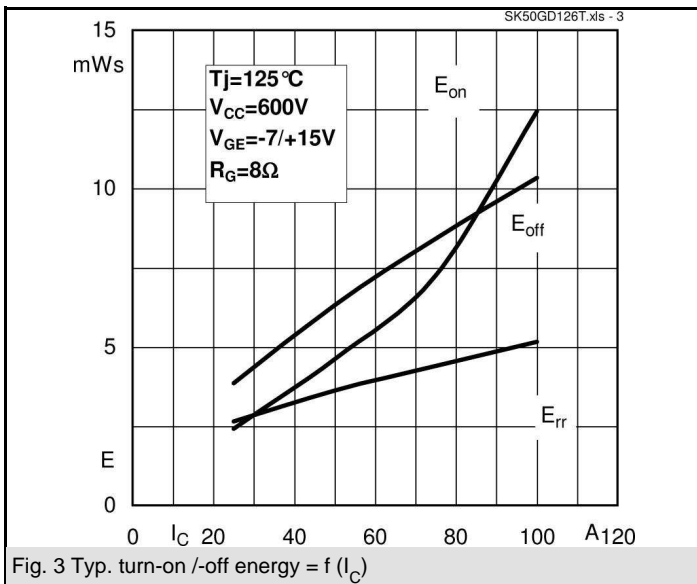
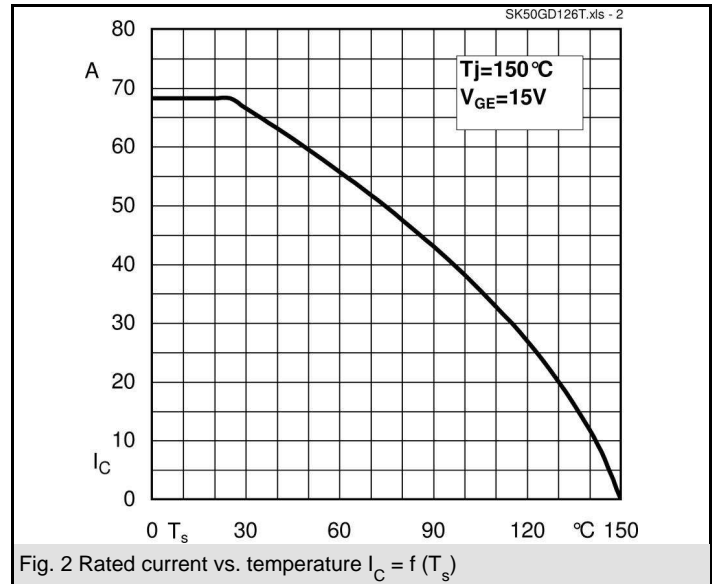
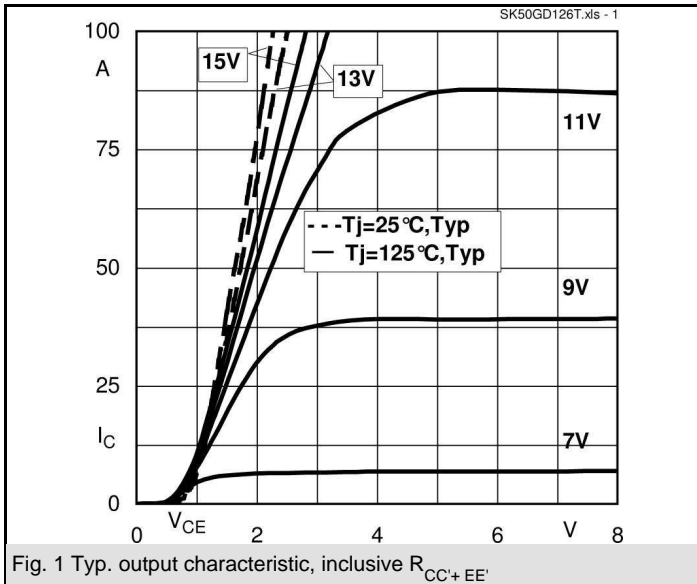


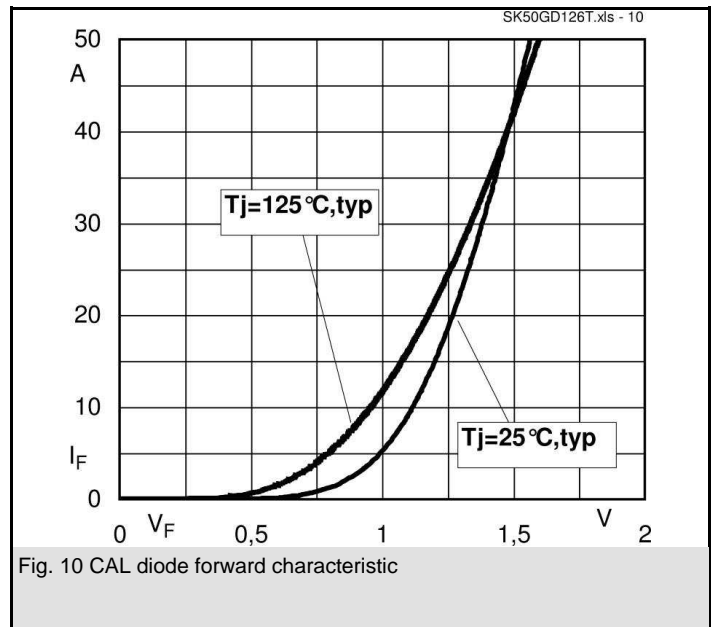
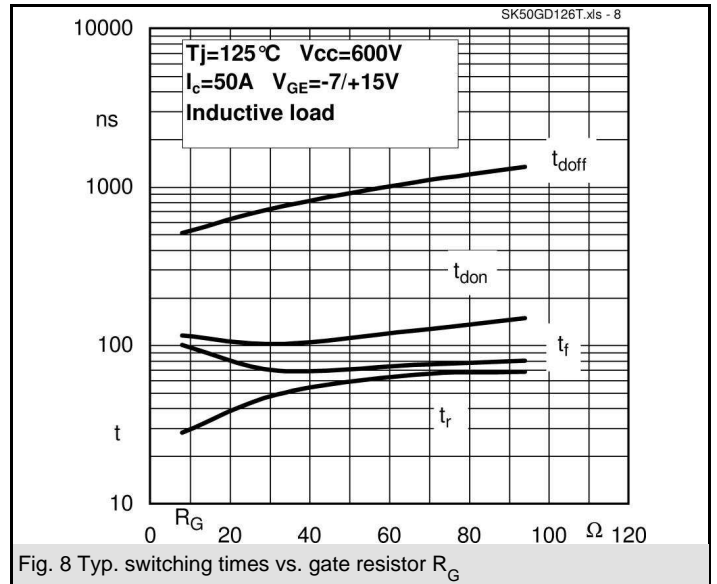
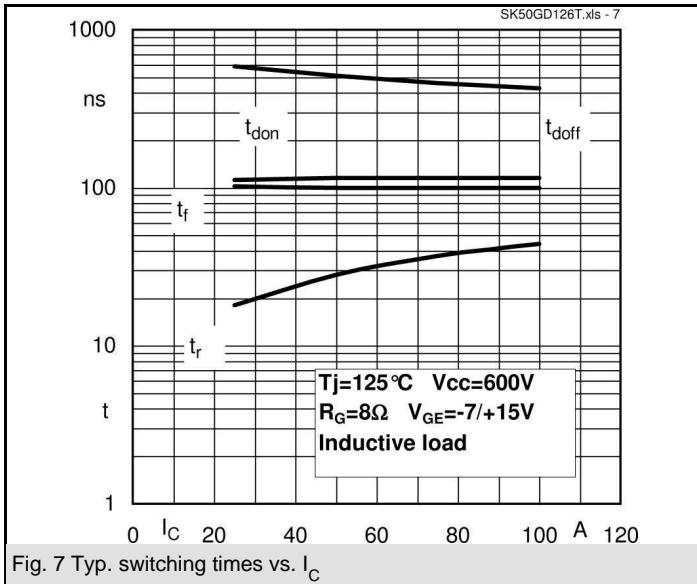
GD-T

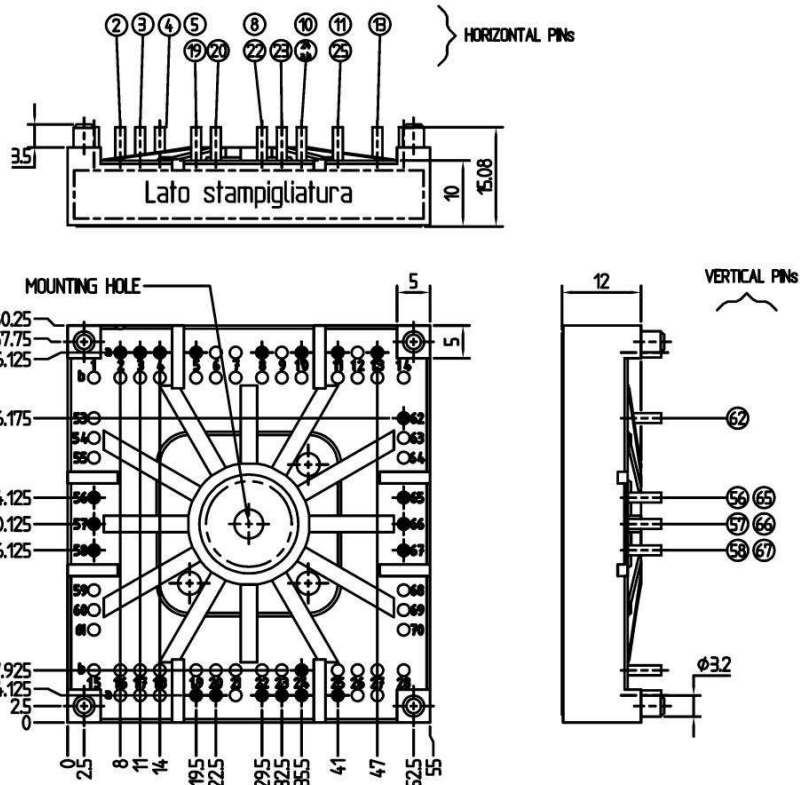
Characteristics			min.	typ.	max.	Units
Symbol	Conditions					
<b>Inverse Diode</b>						
$V_F = V_{EC}$	$I_{Fnom} = 50 \text{ A}; V_{GE} = 0 \text{ V}$	$T_j = 25 \text{ }^\circ\text{C}_{\text{chiplev.}}$		1,35		V
		$T_j = 125 \text{ }^\circ\text{C}_{\text{chiplev.}}$		1,35		V
$V_{F0}$		$T_j = 25 \text{ }^\circ\text{C}$		0,95		V
		$T_j = 125 \text{ }^\circ\text{C}$		0,85		V
$r_F$		$T_j = 25 \text{ }^\circ\text{C}$		8		mΩ
		$T_j = 125 \text{ }^\circ\text{C}$		10		mΩ
$I_{RRM}$	$I_F = 50 \text{ A}$	$T_j = 125 \text{ }^\circ\text{C}$		30		A
$Q_{rr}$	$di/dt = 500 \text{ A}/\mu\text{s}$			10		μC
$E_{rr}$	$V_{CC} = 600\text{V}$			3,6		mJ
$R_{th(j-s)D}$	per diode			1		K/W
$M_s$	to heat sink		2,5		2,75	Nm
w				60		g
<b>Temperature sensor</b>						
$R_{100}$	$T_s = 100^\circ\text{C} (R_{25} = 5\text{k}\Omega)$			493±5%		Ω

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

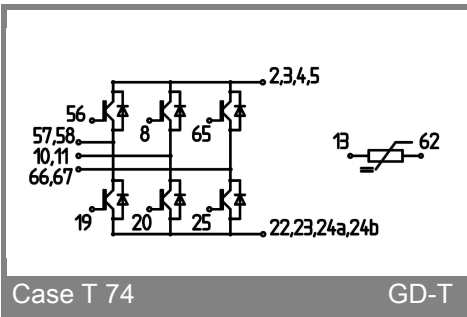
\* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification 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