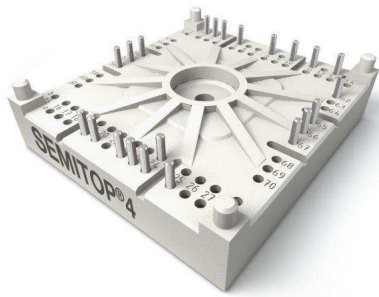


SK150GD066T



SEMITOP® 4

IGBT Module

SK150GD066T

Preliminary Data

Features

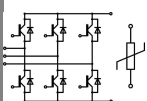
- One screw mounting module
- Fully compatible with SEMITOP®1,2,3
- Improved thermal performances by aluminium oxide substrate
- Trench IGBT technology
- CAL technology FWD
- Integrated NTC temperature sensor

Typical Applications*

- Inverter up to 32 kVA
- Typ. motor power 15 kW

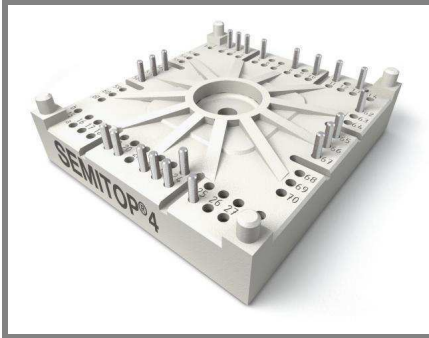
Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT			
V_{CES}	$T_j = 25\text{ °C}$	600	V
I_C	$T_j = 175\text{ °C}$	$T_s = 25\text{ °C}$	151 A
		$T_s = 70\text{ °C}$	121 A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$	300	A
V_{GES}		± 20	V
t_{psc}	$V_{CC} = 360\text{ V}$; $V_{GE} \leq 20\text{ V}$; $T_j = 125\text{ °C}$ $V_{CES} < 600\text{ V}$	6	μs
Inverse Diode			
I_F	$T_j = 175\text{ °C}$	$T_s = 25\text{ °C}$	198 A
		$T_s = 70\text{ °C}$	152 A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$	200	A
Module			
$I_{t(RMS)}$			A
T_{vj}		-40 ... +175	$^{\circ}\text{C}$
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					
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 2,4\text{ mA}$	5	5,8	6,5	V
I_{CES}	$V_{GE} = 0\text{ V}$, $V_{CE} = V_{CES}$	$T_j = 25\text{ °C}$		0,0076	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}		$T_j = 25\text{ °C}$	0,8	1,1	V
		$T_j = 150\text{ °C}$	0,7	1	V
r_{CE}	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}$	4	5	m Ω
		$T_j = 150\text{ °C}$	6,5	7	m Ω
$V_{CE(sat)}$	$I_{Cnom} = 150\text{ A}$, $V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}_{chiplev.}$	1,45	1,85	V
		$T_j = 150\text{ °C}_{chiplev.}$	1,65	2,05	V
C_{ies}	$V_{CE} = 25$, $V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$	9,4		nF
C_{oes}			0,6		nF
C_{res}			0,3		nF
$t_{d(on)}$	$R_{Gon} = 8\ \Omega$ $di/dt = 2250\text{ A}/\mu\text{s}$	$V_{CC} = 300\text{ V}$ $I_C = 150\text{ A}$	95		ns
t_r			50		ns
E_{on}	$R_{Goff} = 8\ \Omega$ $di/dt = 2250\text{ A}/\mu\text{s}$	$T_j = 150\text{ °C}$ $V_{GE} = -7/+15\text{ V}$	6,25		mJ
$t_{d(off)}$			541		ns
t_f			70		ns
E_{off}			5,7		mJ
$R_{th(j-s)}$	per IGBT		0,55		K/W



GD-T

SK150GD066T



SEMITOP® 4

IGBT Module

SK150GD066T

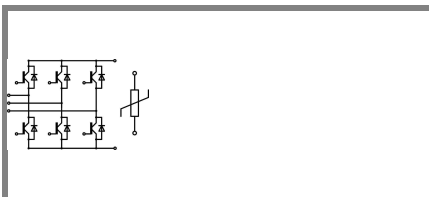
Preliminary Data

Features

- One screw mounting module
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- Trench IGBT technology
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- Integrated NTC temperature sensor

Typical Applications*

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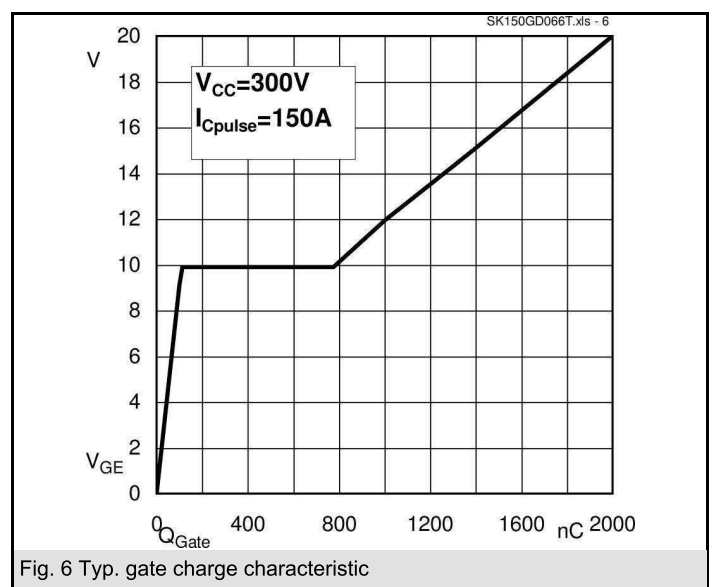
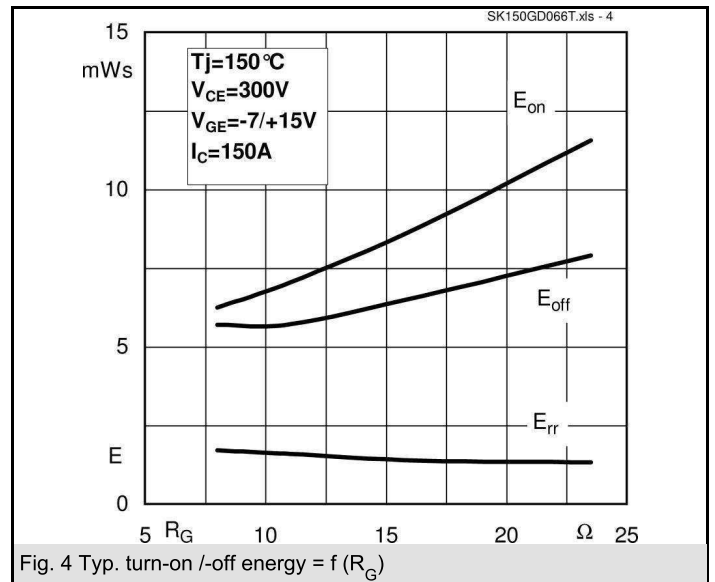
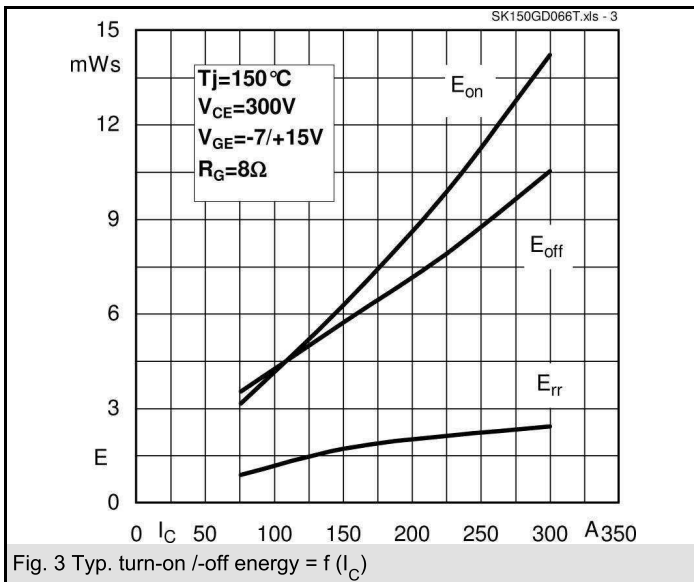
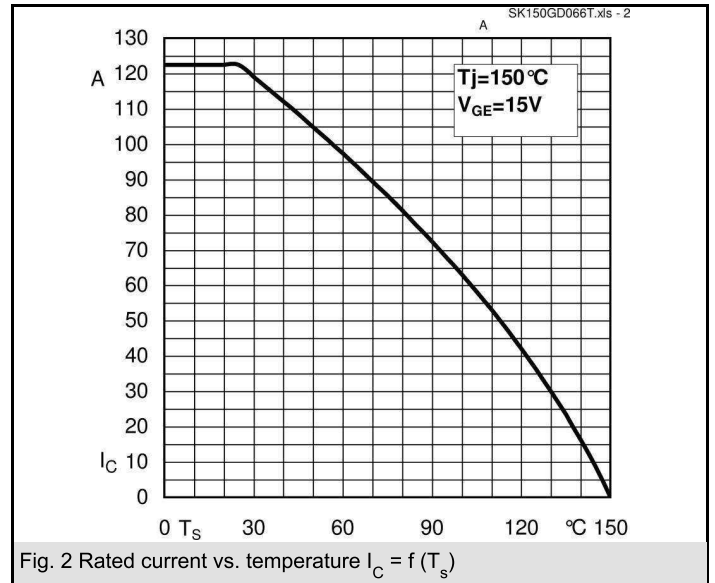
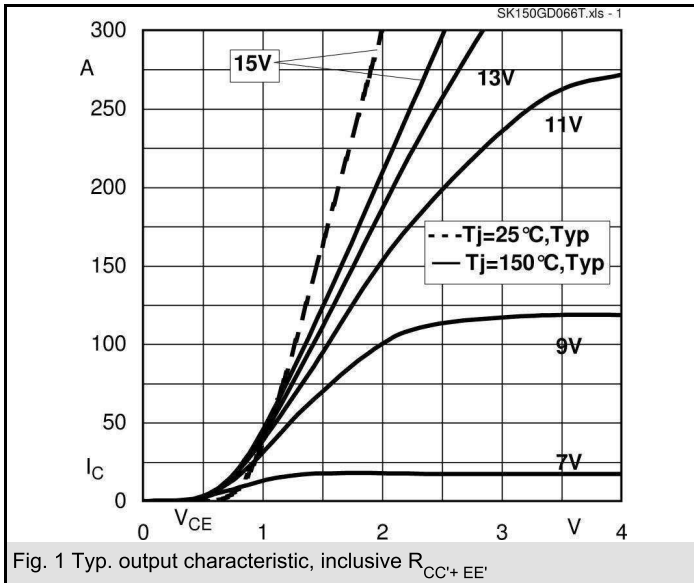
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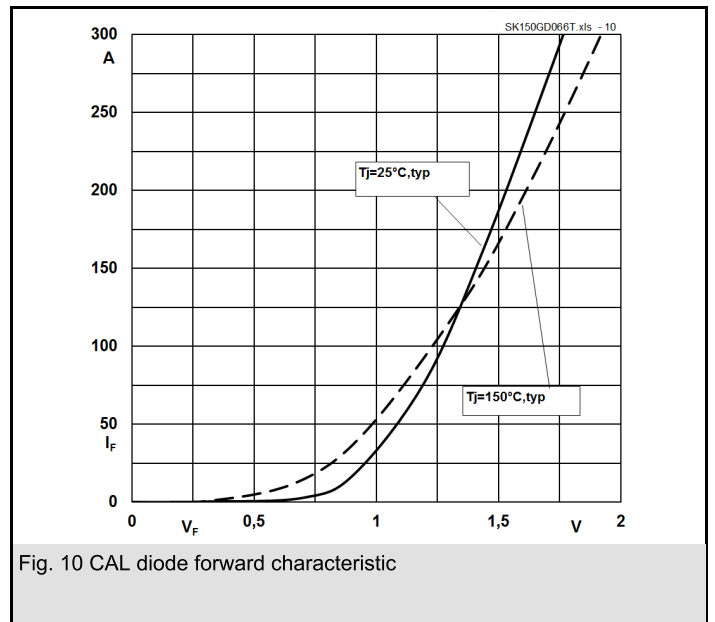
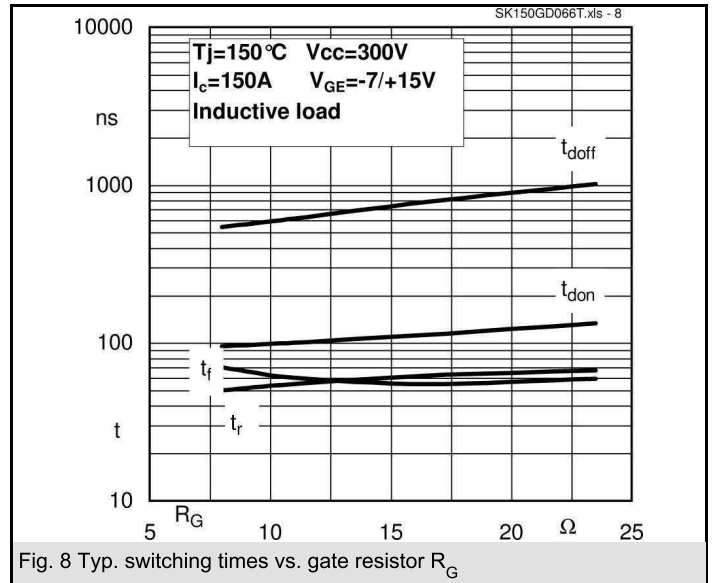
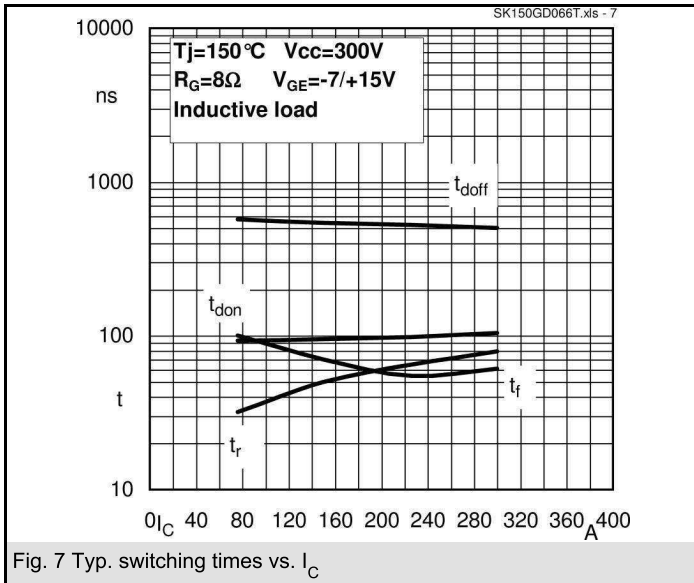
Characteristics

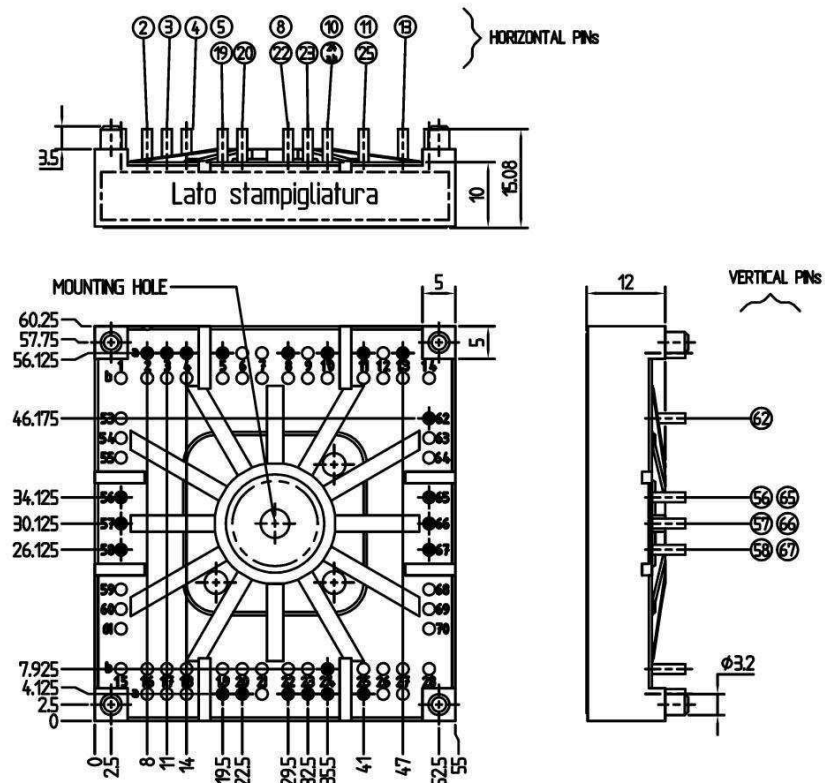
Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 150 \text{ A}; V_{GE} = 0 \text{ V}$				
			$T_j = 25 \text{ }^\circ\text{C}_{\text{chiplev.}}$	1,3	V
			$T_j = 150 \text{ }^\circ\text{C}_{\text{chiplev.}}$	1,2	V
V_{F0}			$T_j = 25 \text{ }^\circ\text{C}$	0,85	V
			$T_j = 150 \text{ }^\circ\text{C}$	0,9	V
r_F			$T_j = 25 \text{ }^\circ\text{C}$	3	mΩ
			$T_j = 150 \text{ }^\circ\text{C}$	2	mΩ
I_{RRM}	$I_F = 150 \text{ A}$		$T_j = 150 \text{ }^\circ\text{C}$	100	A
Q_{rr}	$di/dt = 2250 \text{ A}/\mu\text{s}$			11	μC
E_{rr}	$V_{CC} = 300 \text{ V}$			1,7	mJ
$R_{th(j-s)D}$	per diode			0,54	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.

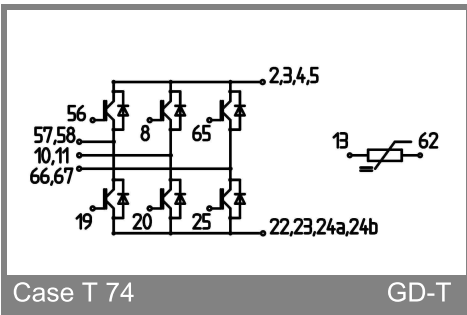
* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and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