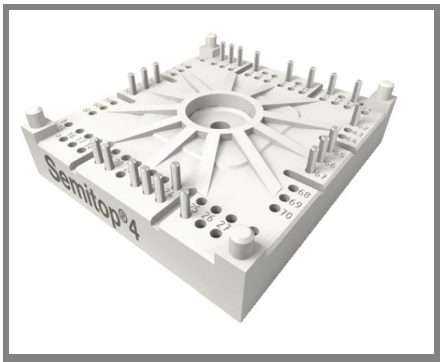
SK75GD066T



SEMITOP® 4

IGBT Module

SK75GD066T

Target Data

Features

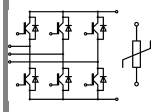
- One screw mounting module
- Fully compatible with SEMITOP®1,2,3
- Improved thermal performances by aluminium oxide substrate
- Trench IGBT technology
- CAL technology FWD
- Integrated NTC temperature sensor

Typical Applications

- Inverter up to 16 kVA
- Typ. motor power 7,5 kW

Absolute Maximum Ratings		T_s = 25 °C, unless otherwise specified	
Symbol	**Conditions**	**Values**	**Units**
IGBT			
V_{CES}	T_j = 25 °C	600	V
I_C	T_j = 175 °C; T_s = 25 °C	83	A
	T_s = 70 °C	67	A
I_{CRM}	I_{CRM}= 2 x I_{Cnom}	150	A
V_{GES}		± 20	V
t_{psc}	V_{CC} = 360 V; $V_{GE} \leq$ 20 V; T_j = 125 °C; V_{CES} < 600 V	6	µs
Inverse Diode			
I_F	T_j = 175 °C; T_s = 25 °C	92	A
	T_s = 70 °C	73	A
I_{FRM}	I_{FRM}= 2 x I_{Fnom}	80	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 °C, unless otherwise specified			
Symbol	**Conditions**		**min.**	**typ.**	**max.**	**Units**
IGBT						
$V_{GE(th)}$	V_{GE} = V_{CE}, I_C = 1,2 mA		5	5,8	6,5	V
I_{CES}	V_{GE} = 0 V, V_{CE} = V_{CES}	T_j = 25 °C				mA
		T_j = 125 °C				mA
I_{GES}	V_{CE} = 0 V, V_{GE} = 20 V	T_j = 25 °C			600	nA
		T_j = 125 °C				nA
V_{CE0}		T_j = 25 °C		0,8	1,1	V
		T_j = 150 °C		0,7	1	V
r_{CE}	V_{GE} = 15 V	T_j = 25°C		8	10	mΩ
		T_j = 150°C		12,7	14	mΩ
$V_{CE(sat)}$	I_{Cnom} = 75 A, V_{GE} = 15 V	T_j = 25°C$_{chiplev.}$		1,45	1,85	V
		T_j = 150°C$_{chiplev.}$		1,65	2,05	V
C_{ies}	V_{CE} = 25, V_{GE} = 0 V	f = 1 MHz		4,7		nF
C_{oes}				0,3		nF
C_{res}				0,145		nF
$t_{d(on)}$	R_{Gon} = 32 Ω	V_{CC} = 300V		127		ns
t_r		I_{Cnom}= 75A		117		ns
E_{on}		T_j = 125 °C		5,9		mJ
$t_{d(off)}$	R_{Goff} = 32 Ω	V_{GE}= -7/+15 V		925		ns
t_f				73		ns
E_{off}				3,1		mJ
$R_{th(j-s)}$	per IGBT			0,75		K/W



GD-T

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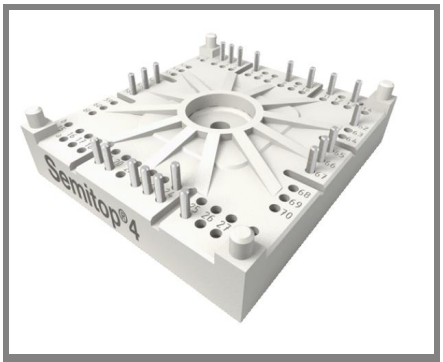

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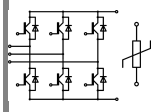

GD-T

Characteristics

Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
$V_F = V_{EC}$	I_{Fnom} = 60 A; V_{GE} = 0 V	T_j = 25 °$C_{chiplev.}$		1,35		V
		T_j = 150 °$C_{chiplev.}$		1,31		V
V_{F0}		T_j = 25 °C				V
		T_j = 150 °C		0,85		V
r_F		T_j = 25 °C				mΩ
		T_j = 150 °C		7,8		mΩ
I_{RRM}	I_{Fnom} = 75 A	T_j = 125 °C		35		A
Q_{rr}	di/dt = 2400 A/µs			10		µC
E_{rr}	V_{CC}= 300V			1,4		mJ
$R_{th(j-s)D}$	per diode			1,2		K/W
M_s	to heat sink				3,5	Nm
w				60		g
Temperature sensor						
R_{100}	T_s = 100°C (R_{25}=5kΩ)			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.

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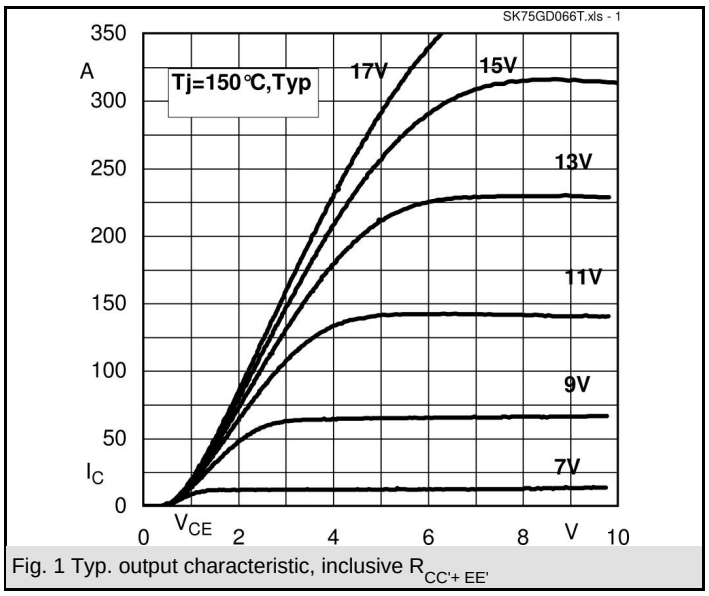

Fig. 1 Typ. output characteristic, inclusive $R_{CC'+EE'}$

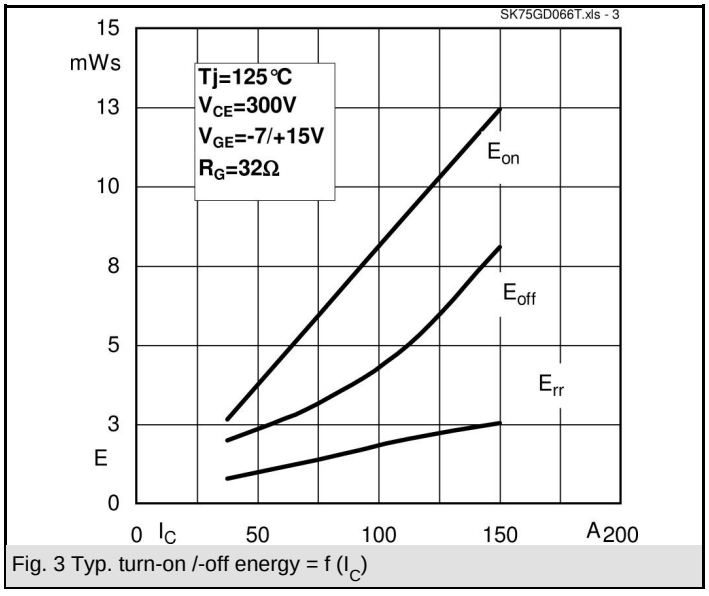

Fig. 3 Typ. turn-on /-off energy = f (I_C)

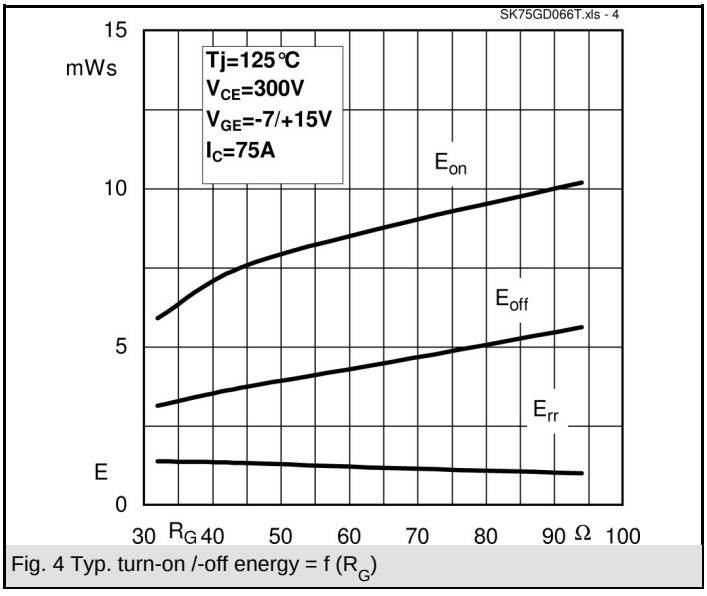

Fig. 4 Typ. turn-on /-off energy = f (R_G)

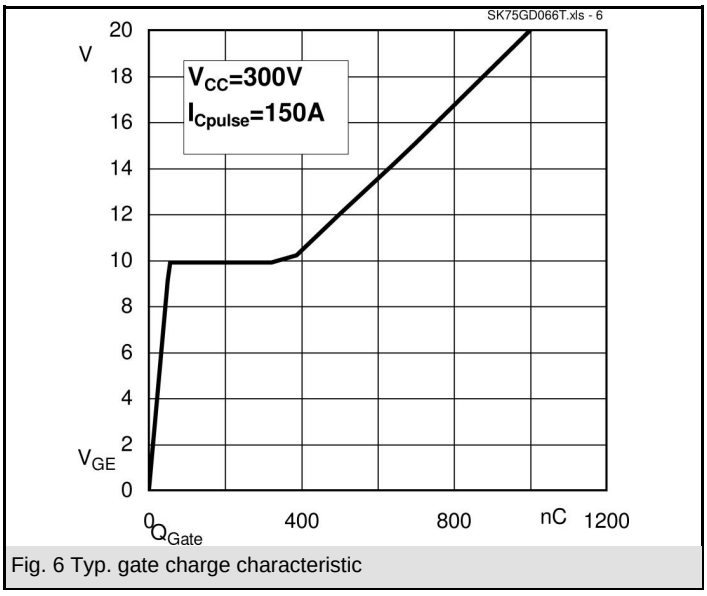

Fig. 6 Typ. gate charge characteristic

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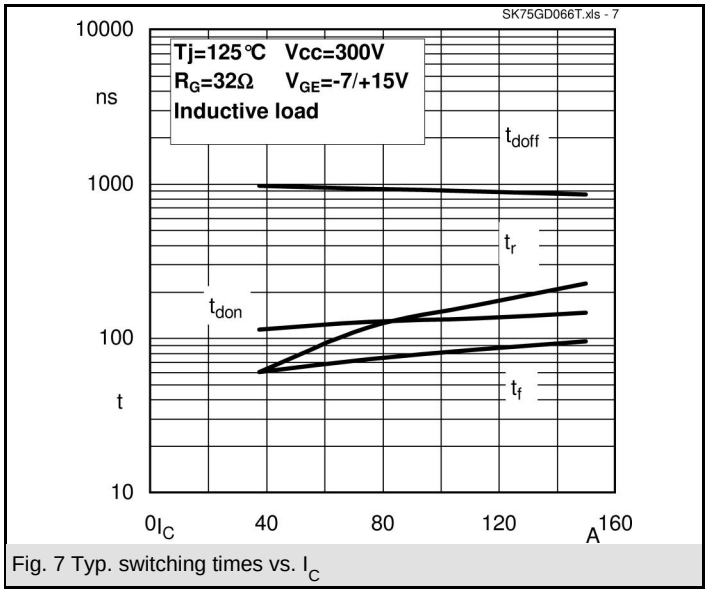

Fig. 7 Typ. switching times vs. I_C

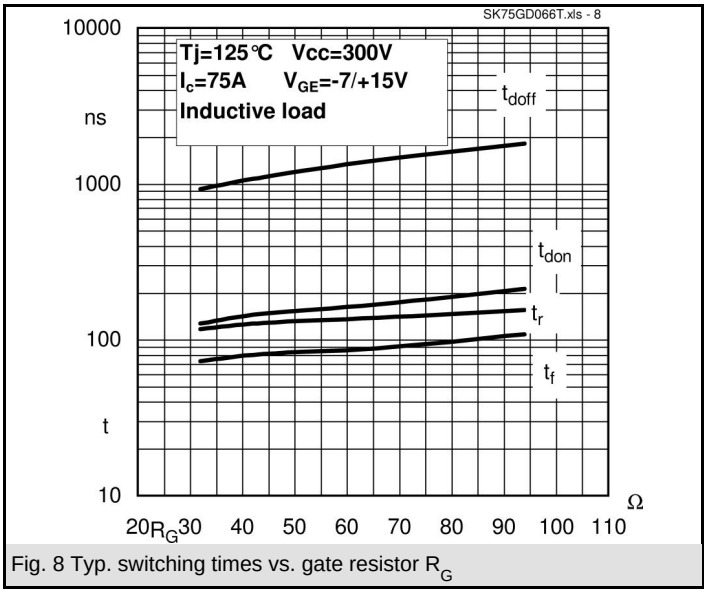

Fig. 8 Typ. switching times vs. gate resistor R_G

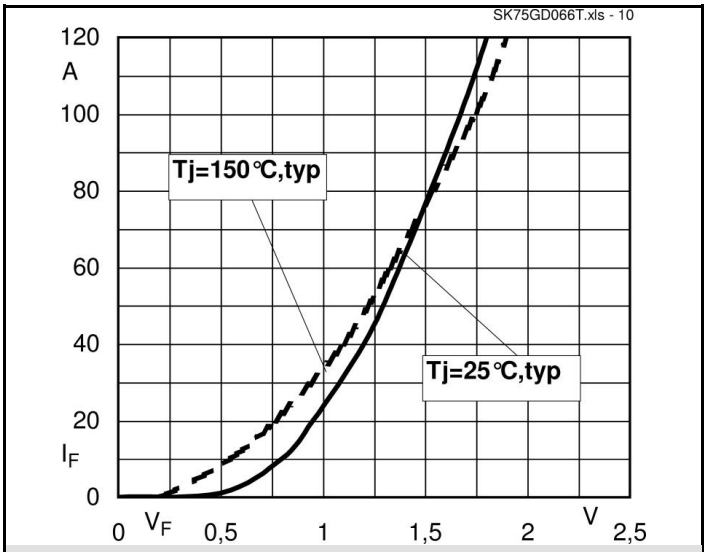

Fig. 10 CAL diode forward characteristic

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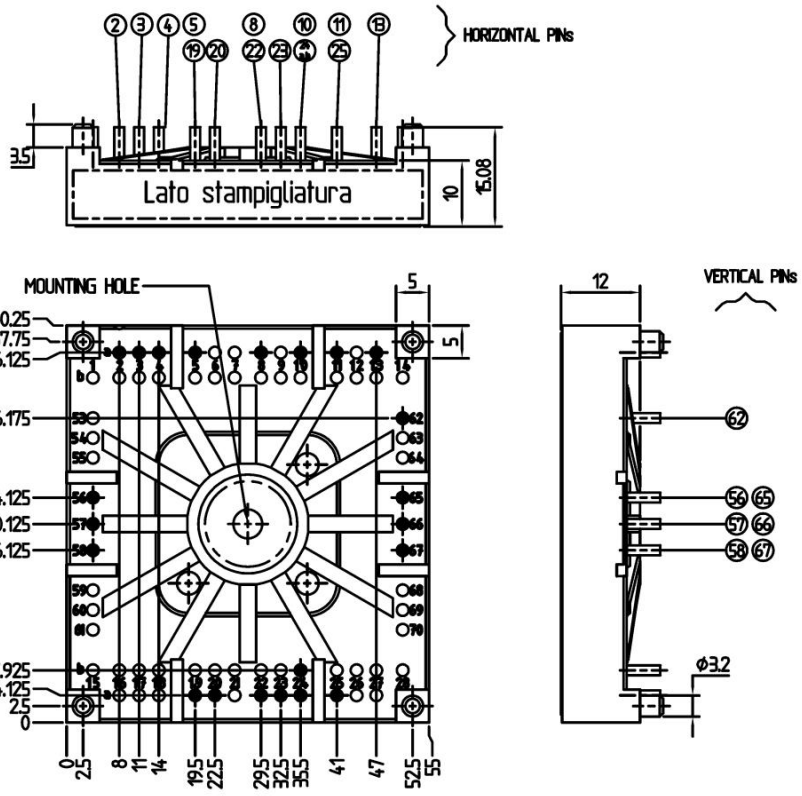
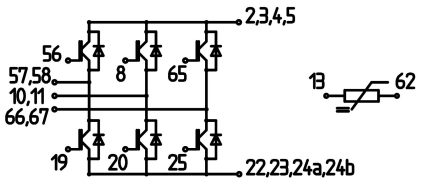


Case T74 (Suggested hole diameter for the solder pins in the circuit board: 2mm. Suggested hole diameter for the mounting pins in the circuit board: 3,6mm)



Case T 74 GD-T

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