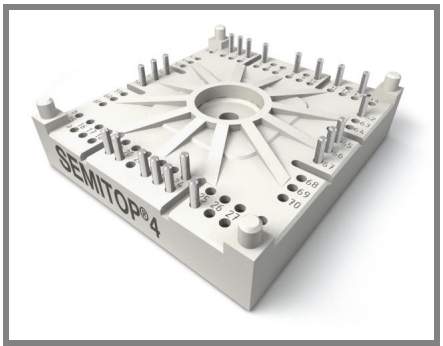
SK150GD066T



SEMITOP® 4

IGBT Module

SK150GD066T

Preliminary Data

Features

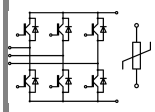
- One screw mounting module
- Fully compatible with SEMITOP®1,2,3
- Improved thermal performances by aluminium oxide substrate
- Trench IGBT technology
- CAL technology FWD
- Integrated NTC temperature sensor

Typical Applications

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

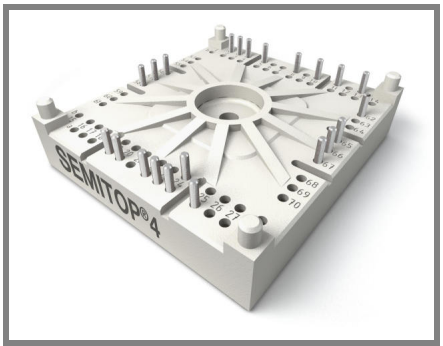
Absolute Maximum Ratings			T_s = 25 °C, unless otherwise specified	
Symbol	**Conditions**		**Values**	**Units**
IGBT				
V_{CES}	T_j = 25 °C		600	V
I_C	T_j = 175 °C	T_s = 25 °C	151	A
		T_s = 70 °C	121	A
I_{CRM}	I_{CRM}= 2 x I_{Cnom}		300	A
V_{GES}			± 20	V
t_{psc}	V_{CC} = 360 V; $V_{GE} \leq$ 20 V; V_{CES} < 600 V	T_j = 125 °C	6	µs
Inverse Diode				
I_F	T_j = 175 °C	T_s = 25 °C	198	A
		T_s = 70 °C	152	A
I_{FRM}	I_{FRM}= 2 x I_{Fnom}		200	A
Module				
$I_{t(RMS)}$				A
T_{vj}			-40 ... +175	°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 = 2,4 mA		5	5,8	6,5	V
I_{CES}	V_{GE} = 0 V, V_{CE} = V_{CES}	T_j = 25 °C			0,0076	mA
		T_j = 125 °C				mA
I_{GES}	V_{CE} = 0 V, V_{GE} = 20 V	T_j = 25 °C			1200	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		4	5	mΩ
		T_j = 150°C		6,5	7	mΩ
$V_{CE(sat)}$	I_{Cnom} = 150 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		9,4		nF
C_{oes}				0,6		nF
C_{res}				0,3		nF
$t_{d(on)}$	R_{Gon} = 8 Ω di/dt = 2400 A/µs	V_{CC} = 300V I_C= 150A T_j = 150 °C V_{GE}= -7/+15 V		95		ns
t_r				50		ns
E_{on}				6,25		mJ
$t_{d(off)}$	R_{Goff} = 8 Ω di/dt = 2250 A/µs			541		ns
t_f				70		ns
E_{off}				5,7		mJ
$R_{th(j-s)}$	per IGBT			0,55		K/W



GD-T

SK150GD066T



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IGBT Module

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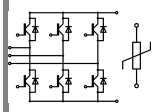


GD-T

Characteristics

Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
$V_F = V_{EC}$	I_{Fnom} = 150 A; V_{GE} = 0 V	T_j = 25 °$C_{chiplev.}$		1,3		V
		T_j = 150 °$C_{chiplev.}$		1,2		V
V_{F0}		T_j = 25 °C		0,85		V
		T_j = 150 °C		0,9		V
r_F		T_j = 25 °C		3		mΩ
		T_j = 150 °C		2		mΩ
I_{RRM}	I_F = 150 A	T_j = 150 °C		100		A
Q_{rr}	di/dt = 2250 A/µs			11		µC
E_{rr}	V_{CC}= 300V			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°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.

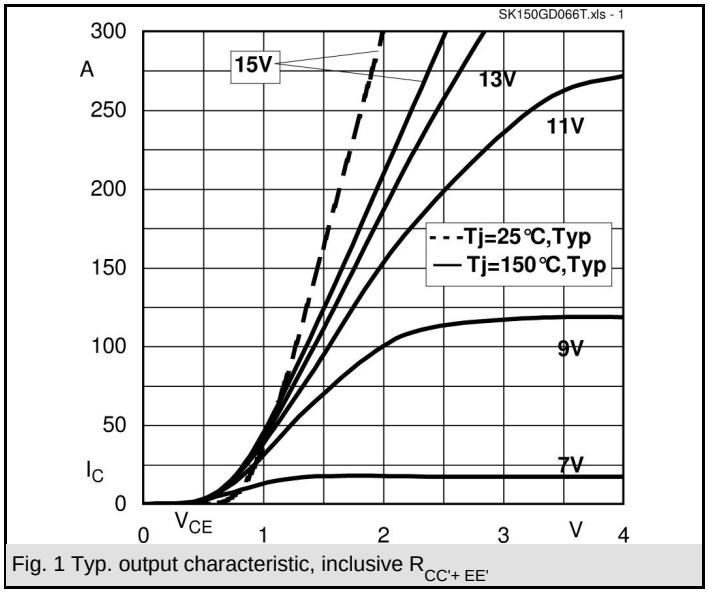


Fig. 1 Typ. output characteristic, inclusive $R_{CC'+EE'}$

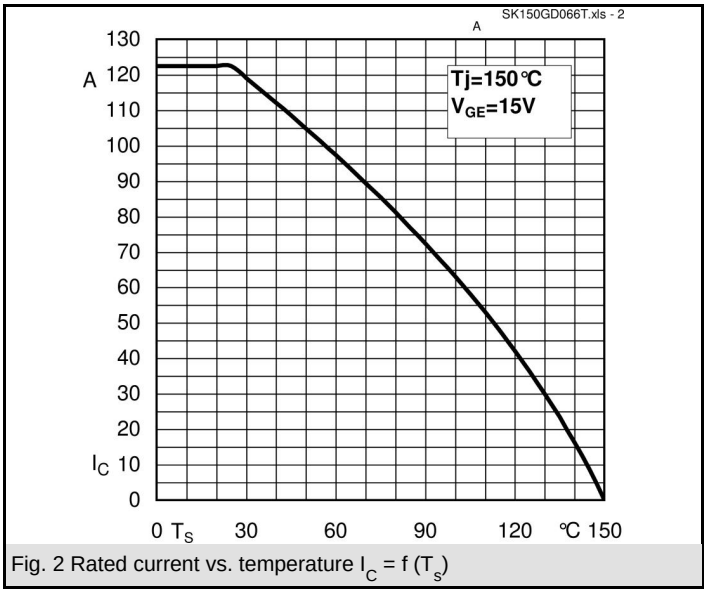


Fig. 2 Rated current vs. temperature $I_C = f(T_s)$

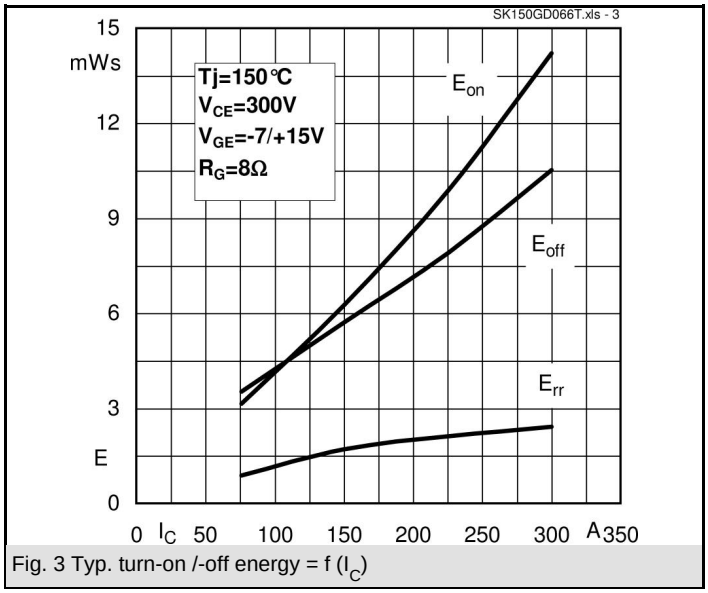


Fig. 3 Typ. turn-on /-off energy = f (I_C)

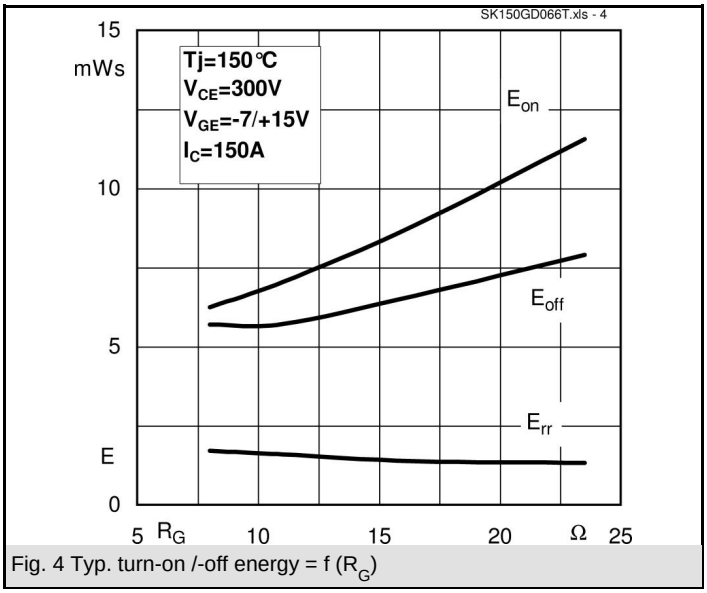


Fig. 4 Typ. turn-on /-off energy = f (R_G)

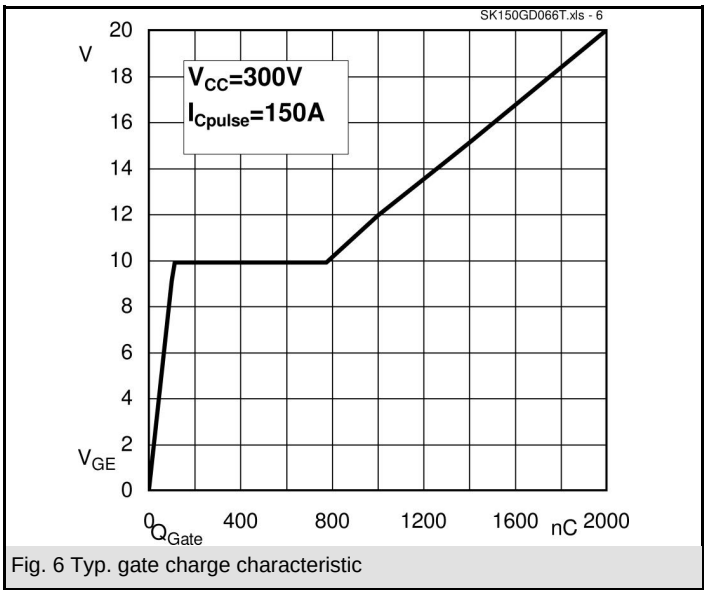


Fig. 6 Typ. gate charge characteristic

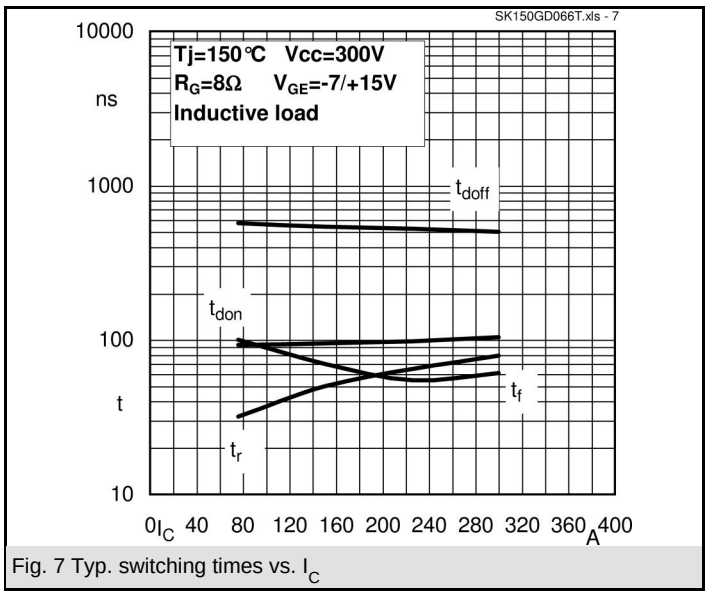


Fig. 7 Typ. switching times vs. I_C

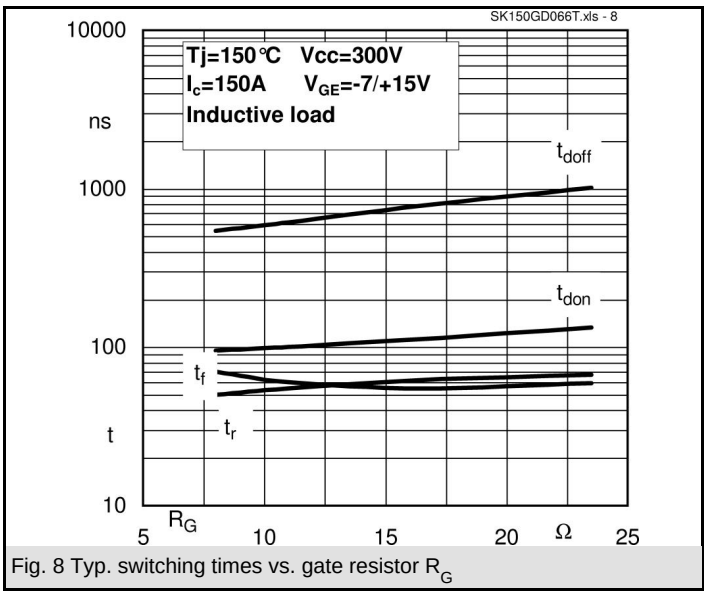


Fig. 8 Typ. switching times vs. gate resistor R_G

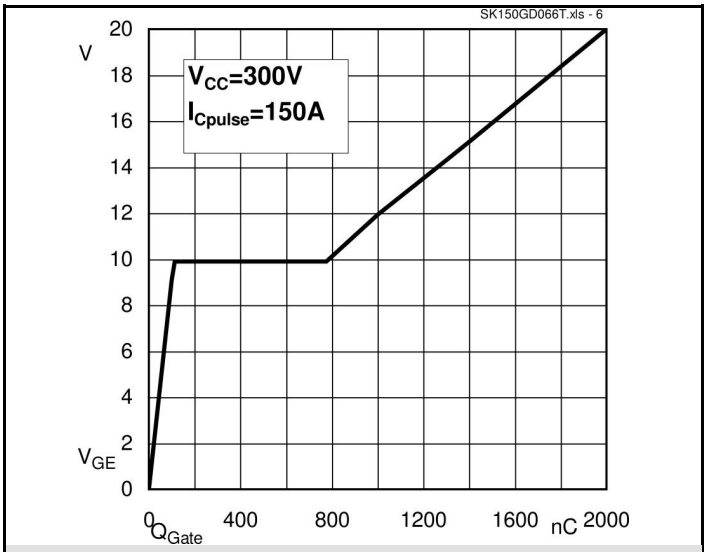
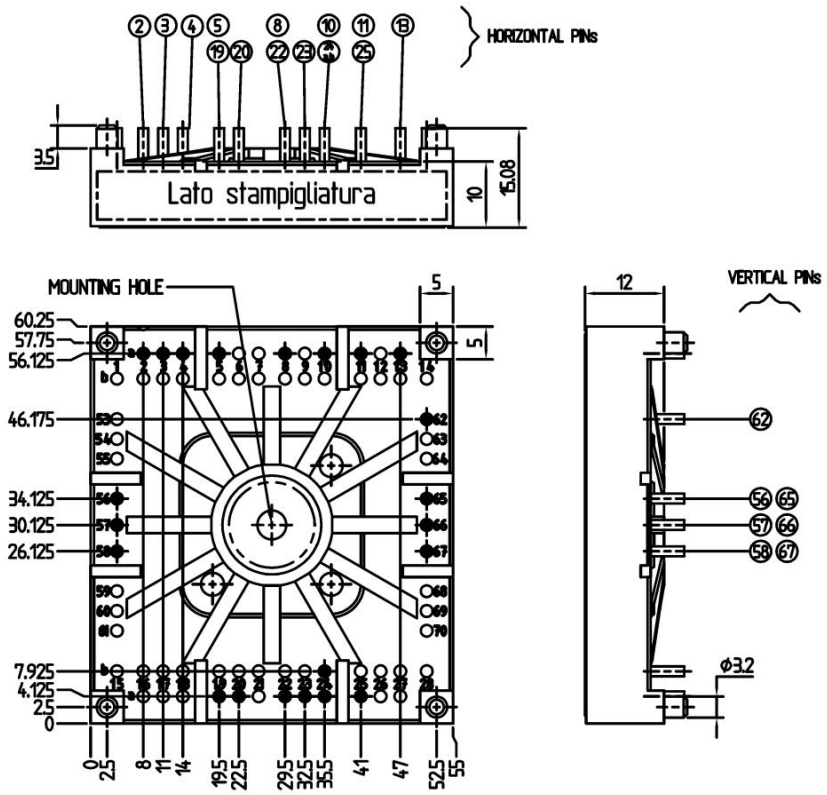
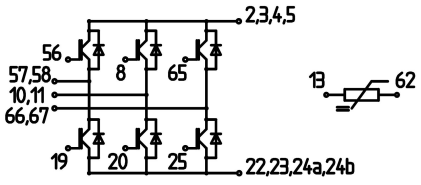


Fig. 10 CAL diode forward characteristic

UL recognized file no E 63 532



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

