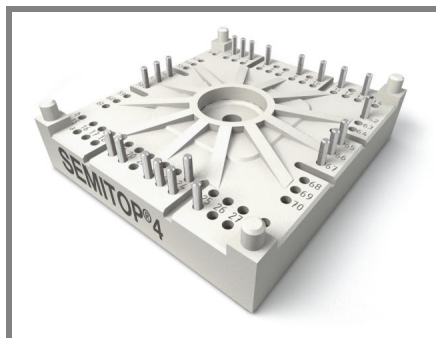


SK50GD12T4T



SEMITOP® 4

IGBT Module

SK50GD12T4T

Target Data

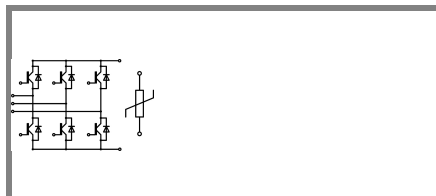
Features

- One screw mounting module
- Fully compatible with SEMITOP®1,2,3
- Improved thermal performances by aluminium oxide substrate
- Trench4 IGBT technology
- CAL4 technology FWD
- Integrated NTC temperature sensor

Typical Applications*

Remarks

- $V_{CE,sat}$, V_F = chip level value

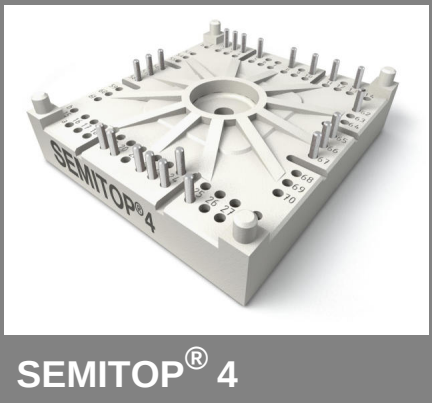


GD-T

Absolute Maximum Ratings			T _s = 25 °C, unless otherwise specified	
Symbol	Conditions		Values	Units
IGBT				
V _{CES}	T _j = 25 °C		1200	V
I _C	T _j = 175 °C	T _s = 25 °C	75	A
		T _s = 70 °C	60	A
I _{CRM}	I _{CRM} = 3 x I _{Cnom}		150	A
V _{GES}			± 20	V
t _{psc}	V _{CC} = 800 V; V _{GE} ≤ 15 V; T _j = 150 °C V _{CES} < 1200 V		10	μs
Inverse Diode				
I _F	T _j = 175 °C	T _s = 25 °C	60	A
		T _s = 70 °C	45	A
I _{FRM}	I _{FRM} = 3 x I _{Fnom}		150	A
I _{FSM}	t _p = 10 ms; half sine wave T _j = 150 °C		265	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 = 1,7 mA		5	5,8	6,5	V		
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES}	T _j = 25 °C				0,01	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				1,1	1,3	V
		T _j = 150 °C				1	1,2	V
r _{CE}	V _{GE} = 15 V	T _j = 25°C				15		mΩ
		T _j = 150°C				25		mΩ
V _{CE(sat)}	I _{Cnom} = 50 A, V _{GE} = 15 V	T _j = 25°C _{chiplev.}				1,85	2,05	V
		T _j = 150°C _{chiplev.}				2,25	2,45	V
C _{ies}	V _{CE} = 25, V _{GE} = 0 V f = 1 MHz					2,77		nF
C _{oes}						0,2		nF
C _{res}						0,16		nF
Q _G	V _{GE} =-7V...+15V					375		nC
R _{Gint}	T _j = 25 °C					4		Ω
t _{d(on)}	R _{Gon} = 32 Ω di/dt = 920 A/μs	V _{CC} = 600V I _C = 50A T _j = 150 °C V _{GE} = ±15 V				63		ns
t _r						65		ns
E _{on}						8,3		mJ
t _{d(off)}	R _{Goff} = 32 Ω di/dt = 920 A/μs					521		ns
t _f						80		ns
E _{off}						5		mJ
R _{th(j-s)}	per IGBT					0,65		K/W

SK50GD12T4T



IGBT Module

SK50GD12T4T

Target Data

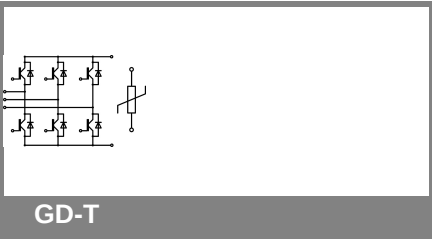
Features

- One screw mounting module
- Fully compatible with SEMITOP®1,2,3
- Improved thermal performances by aluminium oxide substrate
- Trench4 IGBT technology
- CAL4 technology FWD
- Integrated NTC temperature sensor

Typical Applications*

Remarks

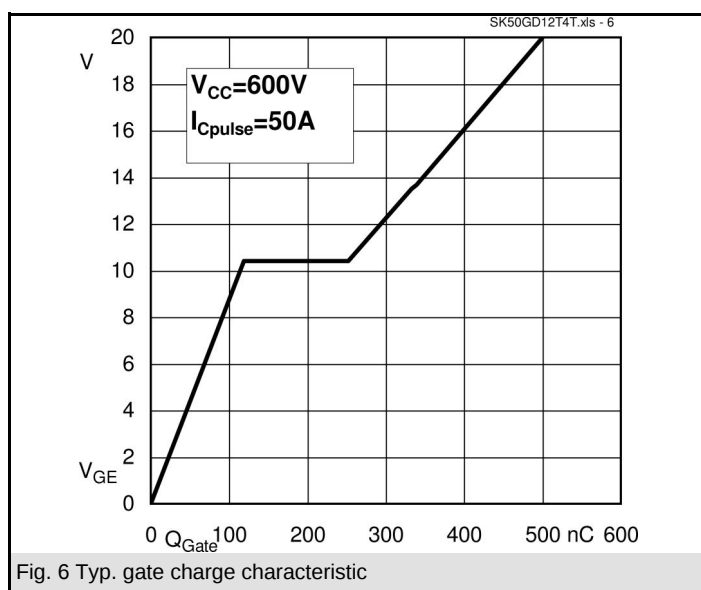
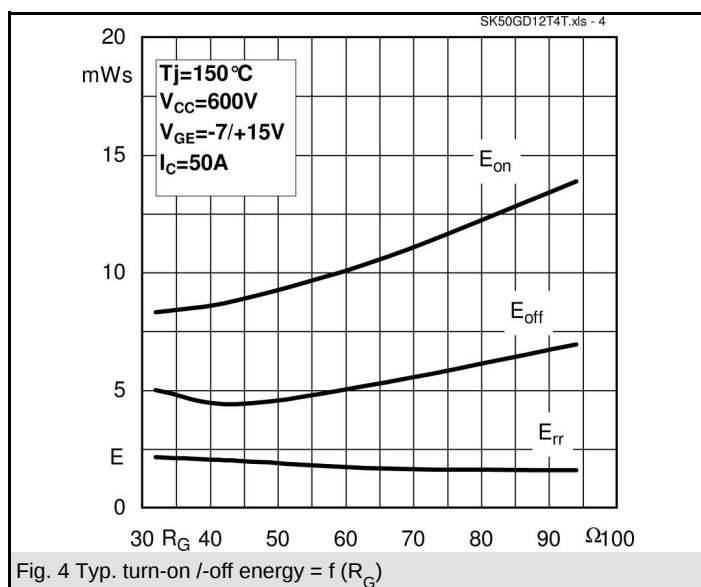
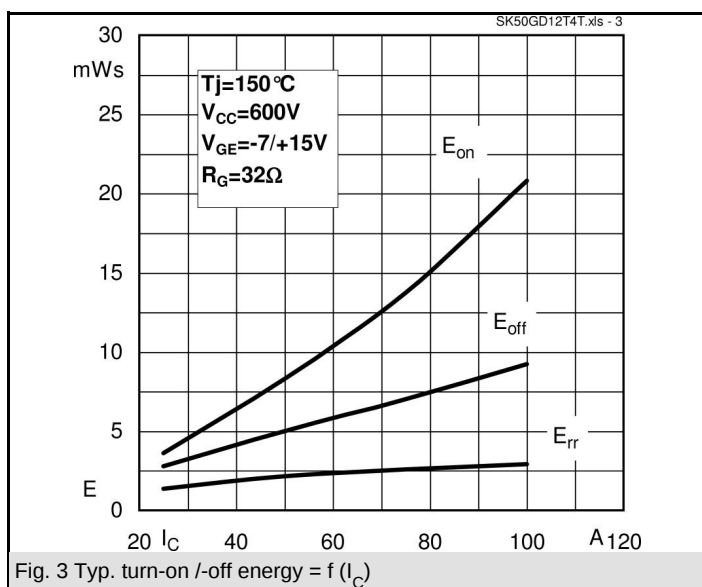
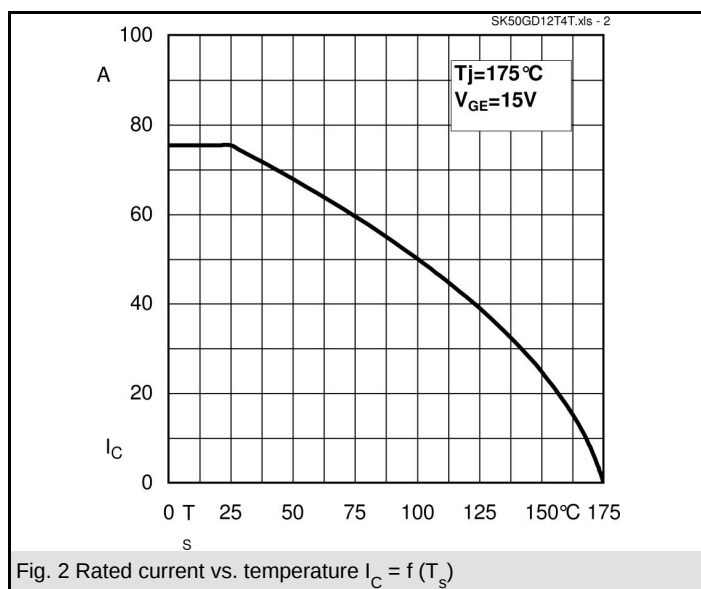
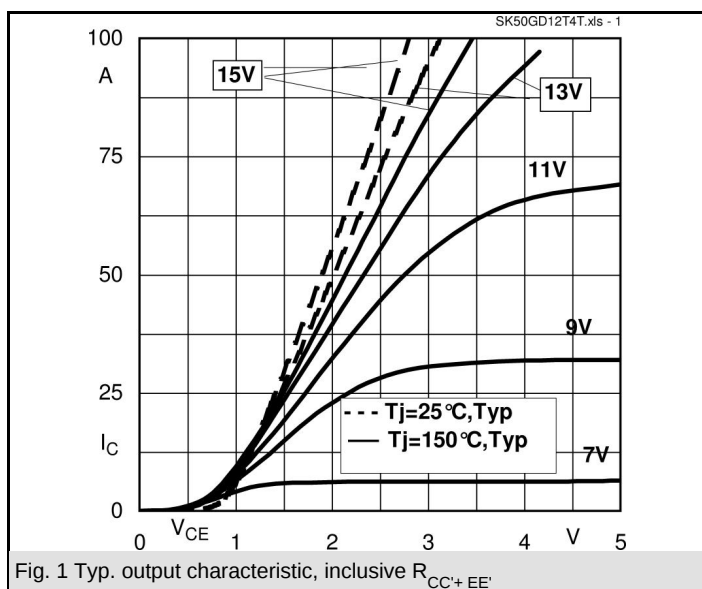
- $V_{CE,sat}$, V_F = chip level value

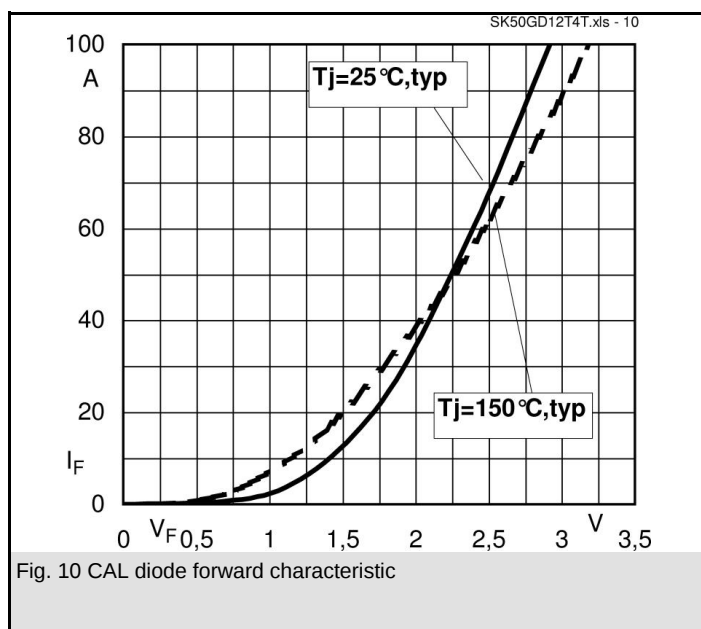
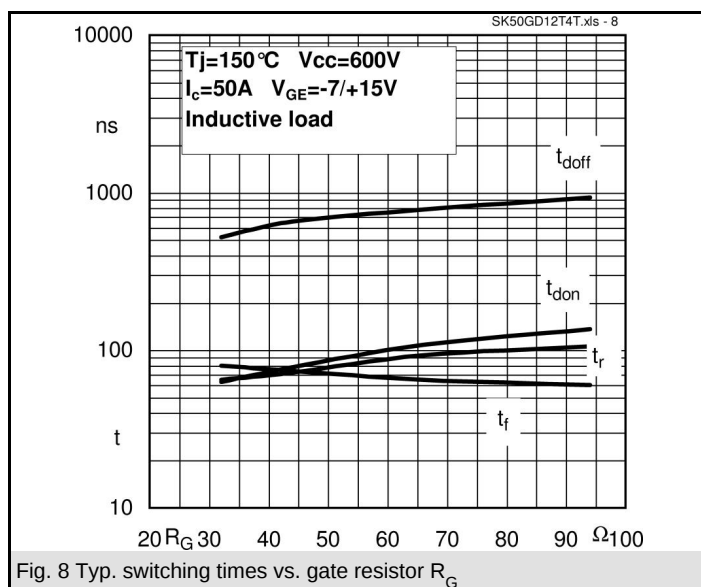
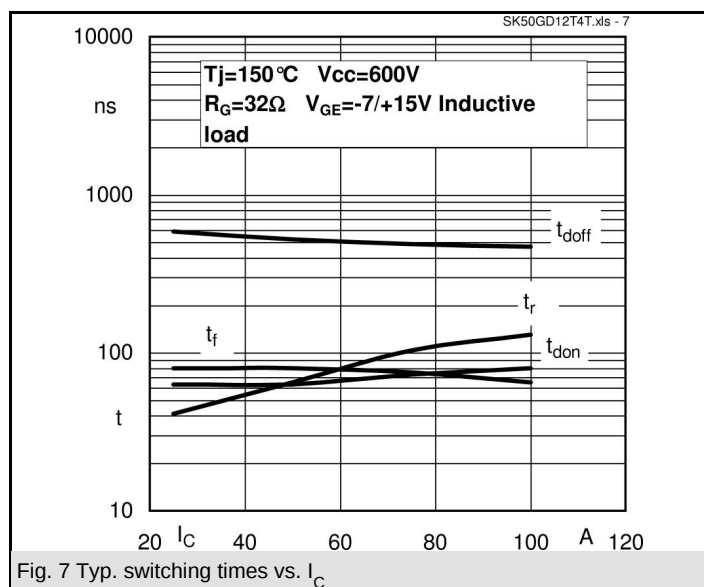


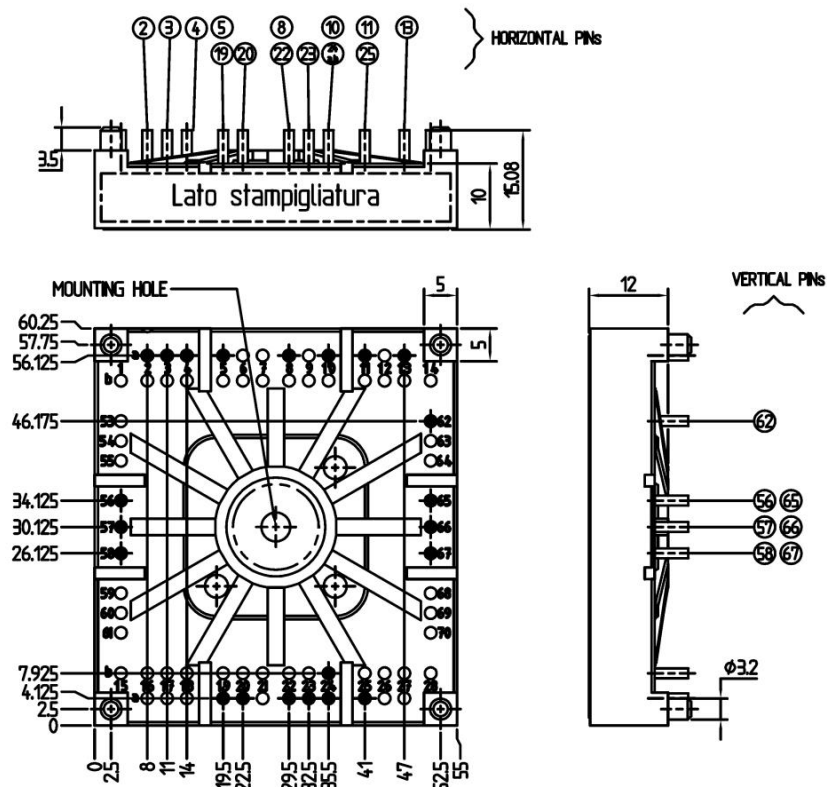
Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
V _F = V _{EC}	I _{Fnom} = 50 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}	2,2	2,55	V
		T _j = 150 °C _{chiplev.}	2,18	2,5	V
V _{F0}		T _j = 25 °C	1,3	1,5	V
		T _j = 150 °C	0,9	1,1	V
r _F		T _j = 25 °C	19	21	mΩ
		T _j = 150 °C	26	28	mΩ
I _{RRM}	I _F = 50 A	T _j = 150 °C	30		A
Q _{rr}	di/dt = 920 A/μs		7,2		μC
E _{rr}	V _{CC} = 600V		2,15		mJ
R _{th(j-s)D}	per diode		0,97		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.

* 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)

