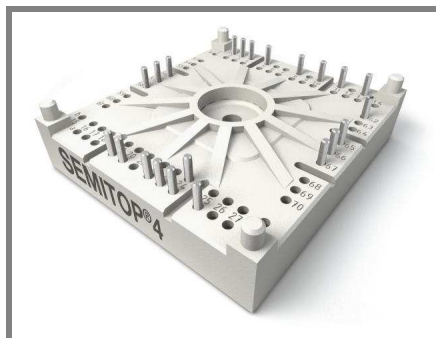


SK50GH12T4T



SEMITOP®4

IGBT module

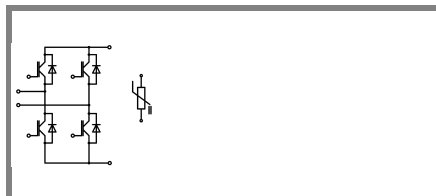
SK50GH12T4T

Features

- One screw mounting module
- Fully compatible with SEMITOP®1,2,3
- Improved thermal performances by aluminium oxide substrate
- New IGBT4 Technology
- CAL 4 technology FWD
- Integrated NTC Temperature sensor

Typical Applications*

- Voltage regulator

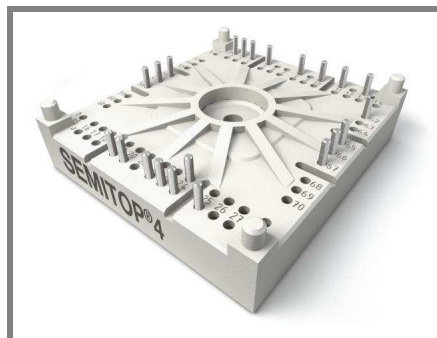


GH-T

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} , t _p ≤ 1ms		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	56	A
		T _s = 70 °C	45	A
I _{FRM}	I _{FRM} = 3 x I _{Fnom} , t _p ≤ 1ms		150	A
I _{FSM}	t _p = 10 ms; half sine wave T _j = 150 °C		335	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 _C = 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			1,0	mA	
		T _j = 125 °C		0,4		mA	
I _{GES}	V _{CE} = 0 V, V _{GE} = 20 V				600	nA	
V _{CE0}		T _j = 25 °C		0,8	0,9	V	
		T _j = 150 °C		0,7	0,8	V	
r _{CE}	V _{GE} = 15 V	T _j = 25°C		20		mΩ	
		T _j = 150°C		30		mΩ	
V _{CE(sat)}	I _{Cnom} = 50 A, V _{GE} = 15 V	T _j = 25°C _{chiplev.}		1,8	2	V	
		T _j = 150°C _{chiplev.}		2,2	2,4	V	
C _{ies}	V _{CE} = 25, V _{GE} = 0 V	f = 1 MHz		5,54		nF	
C _{oes}				0,41		nF	
C _{res}				0,32		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		63		ns	
t _r				65		ns	
E _{on}				8,3		mJ	
t _{d(off)}	R _{Goff} = 32 Ω			521		ns	
t _f				80		ns	
E _{off}			5		mJ		
R _{th(j-s)}	per IGBT			0,65		K/W	

SK50GH12T4T



SEMITOP®4

IGBT module

SK50GH12T4T

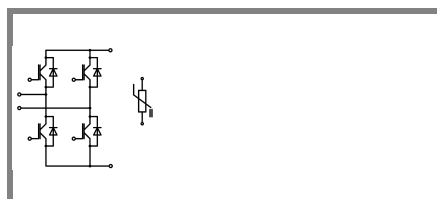
Features

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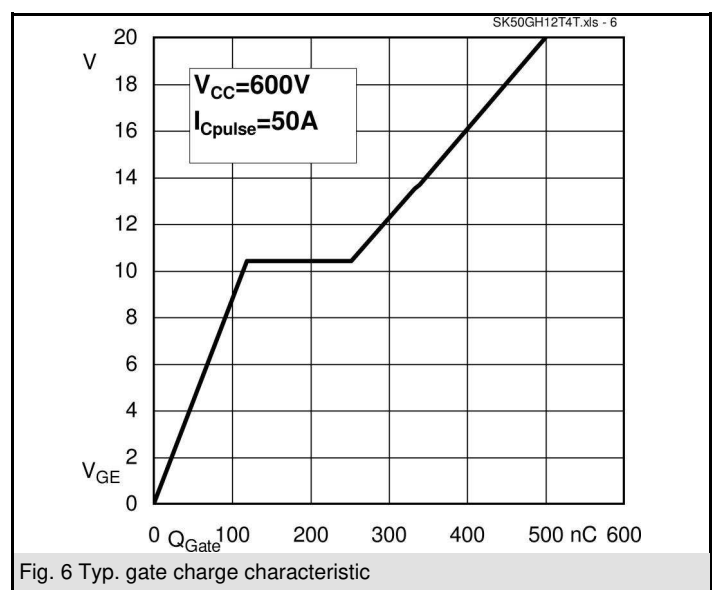
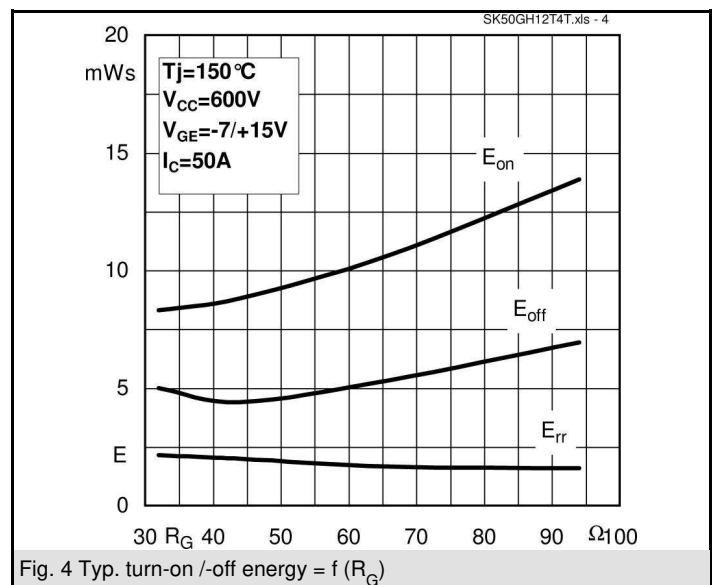
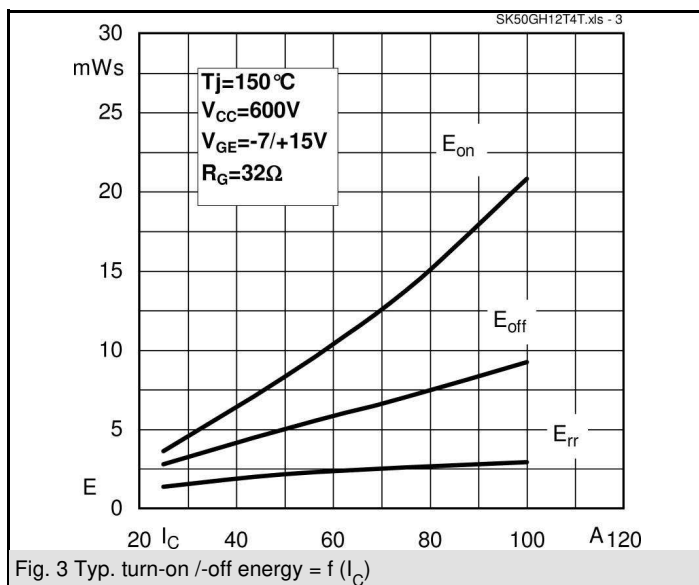
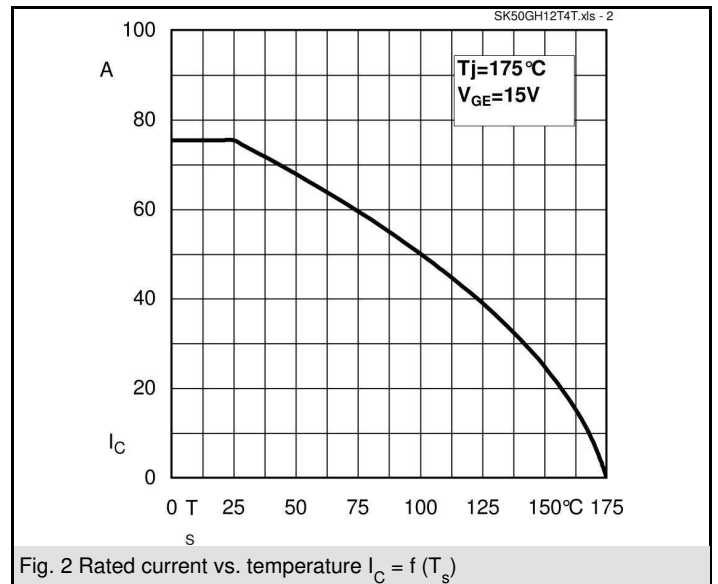
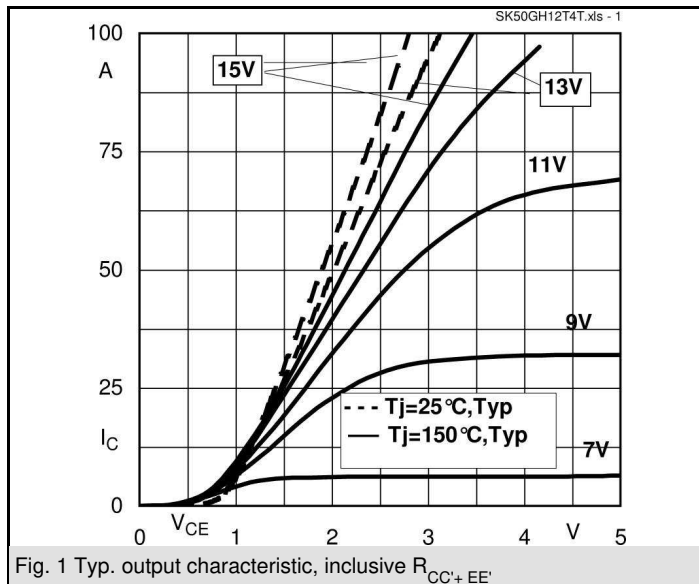
Typical Applications*

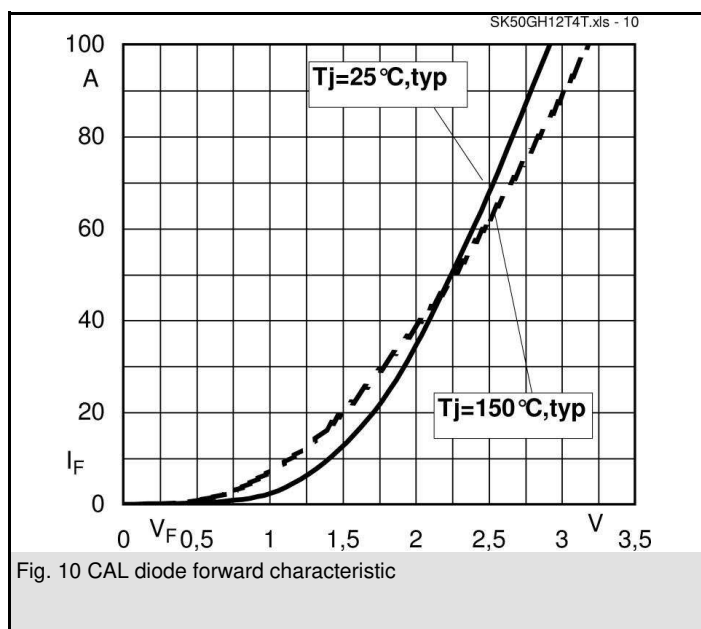
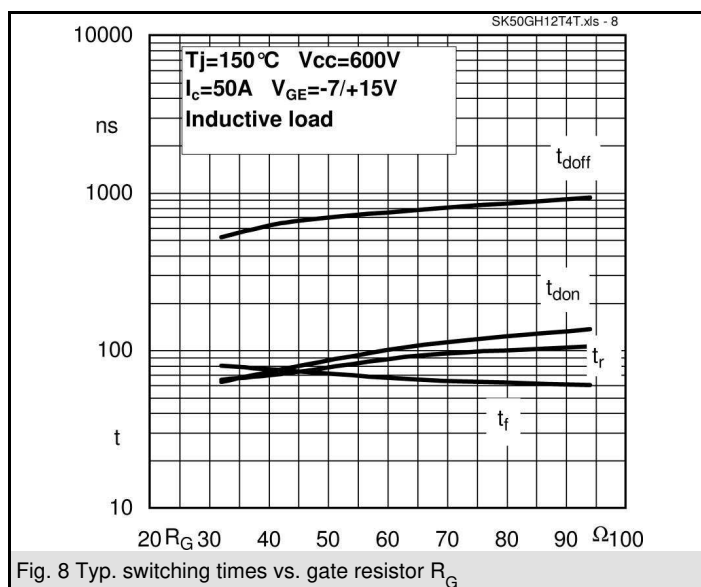
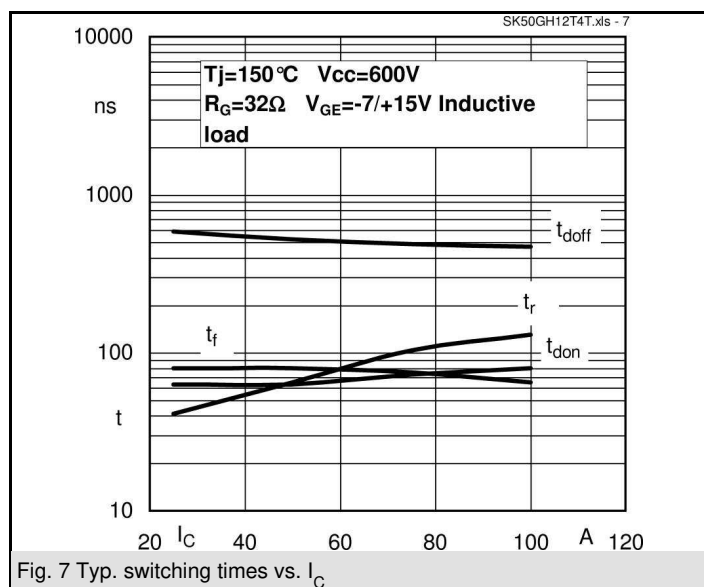
- Voltage regulator

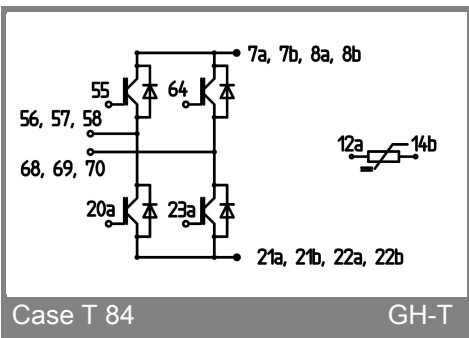
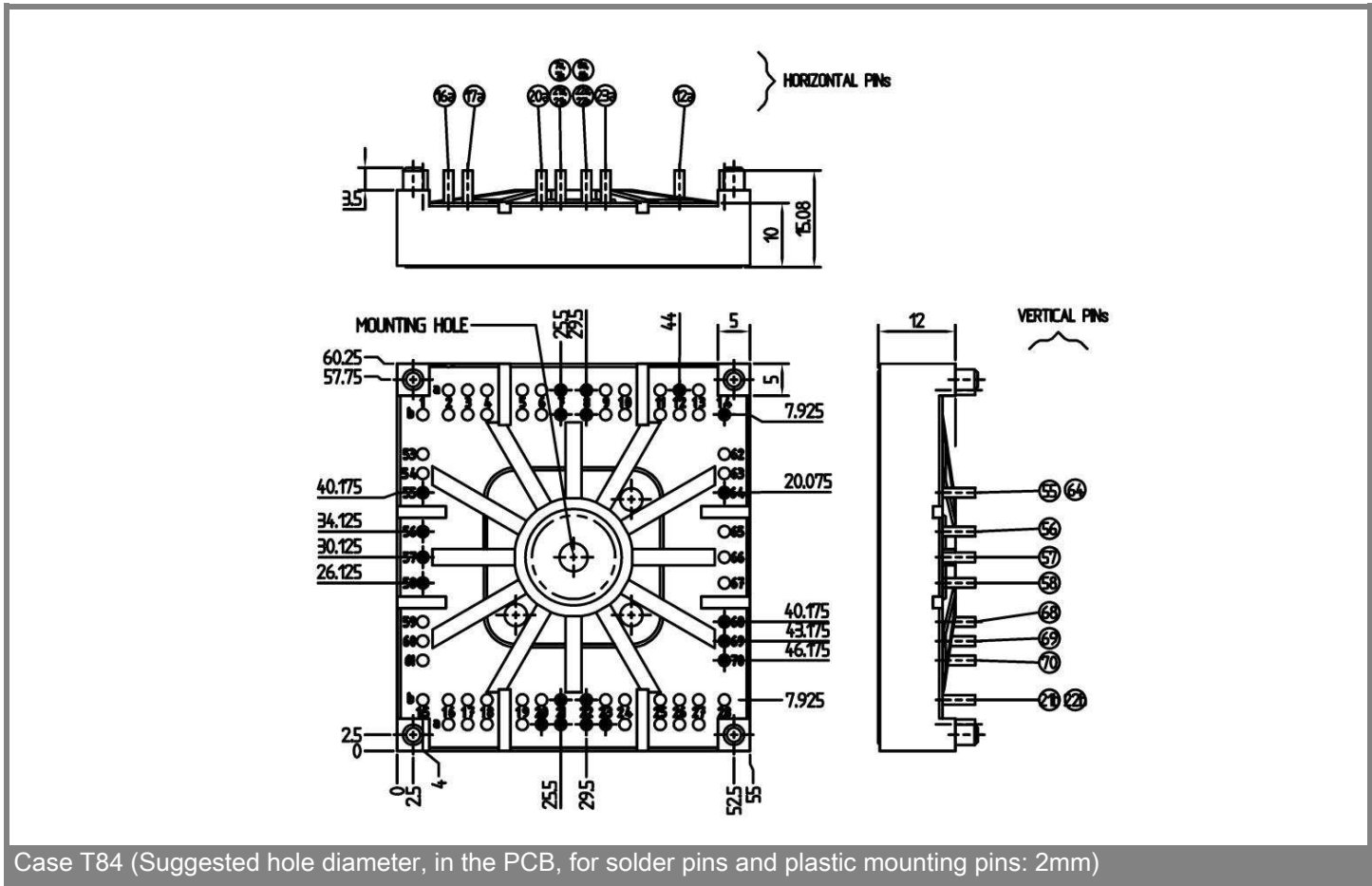
Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 50 \text{ A}; V_{GE} = 0 \text{ V}$				
	$T_j = 25 \text{ }^{\circ}\text{C}_{chiplev.}$		2,2	2,5	V
	$T_j = 150 \text{ }^{\circ}\text{C}_{chiplev.}$		2,1	2,45	V
V_{F0}					
	$T_j = 25 \text{ }^{\circ}\text{C}$		1,3	1,5	V
	$T_j = 150 \text{ }^{\circ}\text{C}$		0,9	1,1	V
r_F					
	$T_j = 25 \text{ }^{\circ}\text{C}$		18		mΩ
	$T_j = 150 \text{ }^{\circ}\text{C}$		24		mΩ
I_{RRM}	$I_F = 50 \text{ A}$		30		A
Q_{rr}	$di/dt = 920 \text{ A}/\mu\text{s}$		7,2		μC
E_{rr}	$V_{CC}=600\text{V}$		2,15		mJ
$R_{th(j-s)D}$	per diode		1,05		K/W
Freewheeling Diode					
$V_F = V_{EC}$	$I_{Fnom} = \text{A}; V_{GE} = \text{V}$				V
V_{F0}					V
r_F					V
I_{RRM}	$I_F = \text{A}$				A
Q_{rr}					μC
E_{rr}					mJ
	per diode				K/W
M_s	to heat sink	2,5		2,75	Nm
w			60		g
Temperature sensor					
R_{100}	$T_s = 100^{\circ}\text{C} (R_{25}=5\text{k}\Omega)$		493±5%		Ω



GH-T







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

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