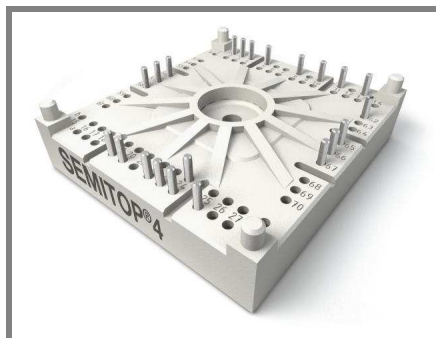


SK50GH12T4T



SEMISTOP®4

IGBT module

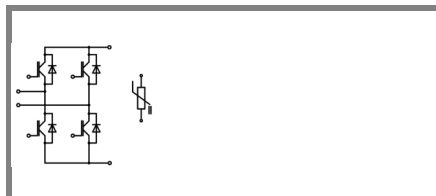
SK50GH12T4T

Features

- One screw mounting module
- Fully compatible with SEMISTOP®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

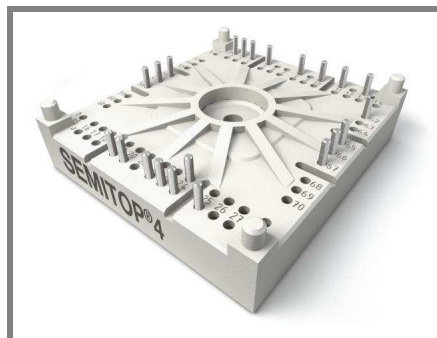


GH-T

Absolute Maximum Ratings			$T_s = 25\text{ }^{\circ}\text{C}$, unless otherwise specified	
Symbol	Conditions		Values	Units
IGBT				
V_{CES}	$T_j = 25\text{ }^{\circ}\text{C}$		1200	V
I_C	$T_j = 175\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	75	A
		$T_s = 70\text{ }^{\circ}\text{C}$	60	A
I_{CRM}	$I_{CRM} = 3 \times I_{Cnom}$, $t_p \leq 1\text{ms}$		150	A
V_{GES}			± 20	V
t_{psc}	$V_{CC} = 800\text{ V}$; $V_{GE} \leq 15\text{ V}$; $T_j = 150\text{ }^{\circ}\text{C}$ $V_{CES} < 1200\text{ V}$		10	μs
Inverse Diode				
I_F	$T_j = 175\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	56	A
		$T_s = 70\text{ }^{\circ}\text{C}$	45	A
I_{FRM}	$I_{FRM} = 3 \times I_{Fnom}$, $t_p \leq 1\text{ms}$		150	A
I_{FSM}	$t_p = 10\text{ ms}$; half sine wave $T_j = 150\text{ }^{\circ}\text{C}$		335	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 _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	T _J = 125 °C			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}				5,54		nF
C _{oes}	V _{CE} = 25, V _{GE} = 0 V	f = 1 MHz		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

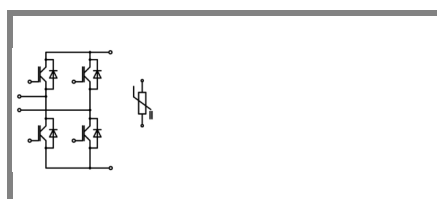
Features

- 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

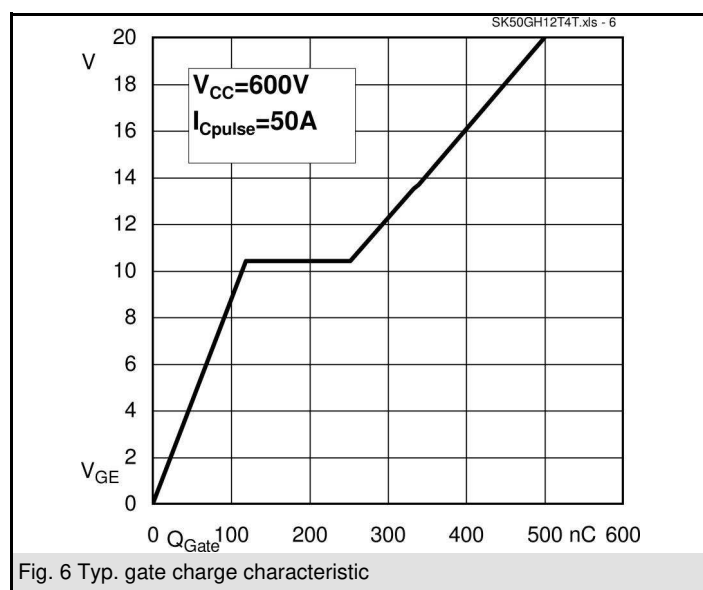
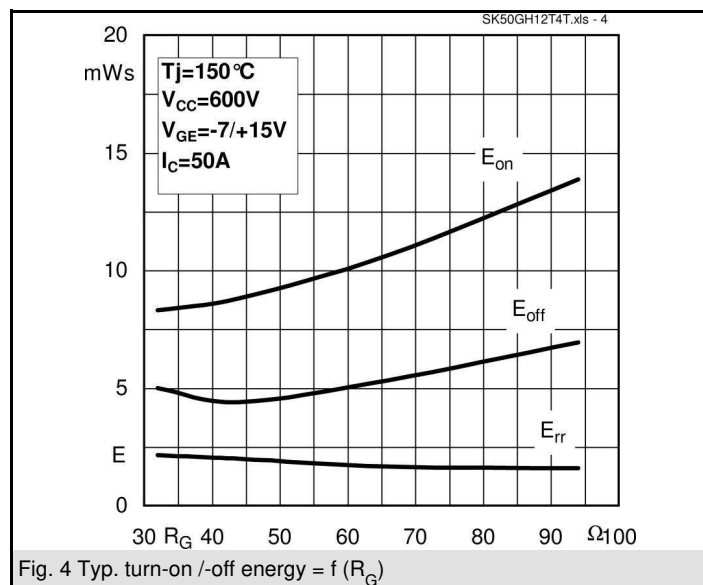
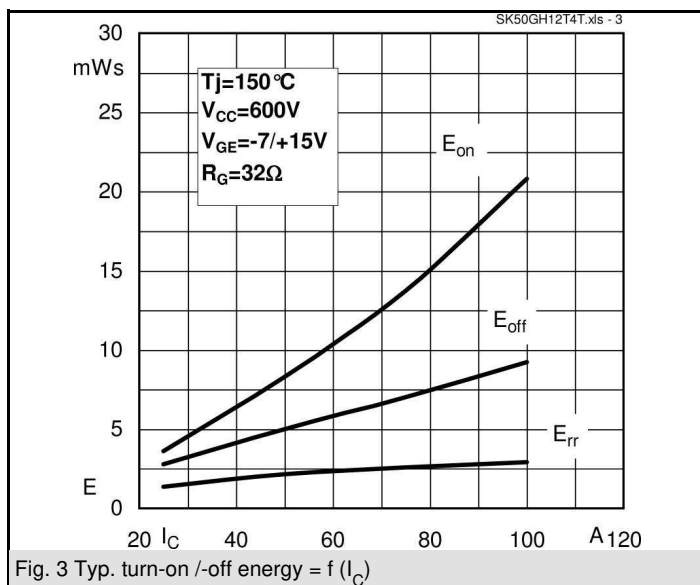
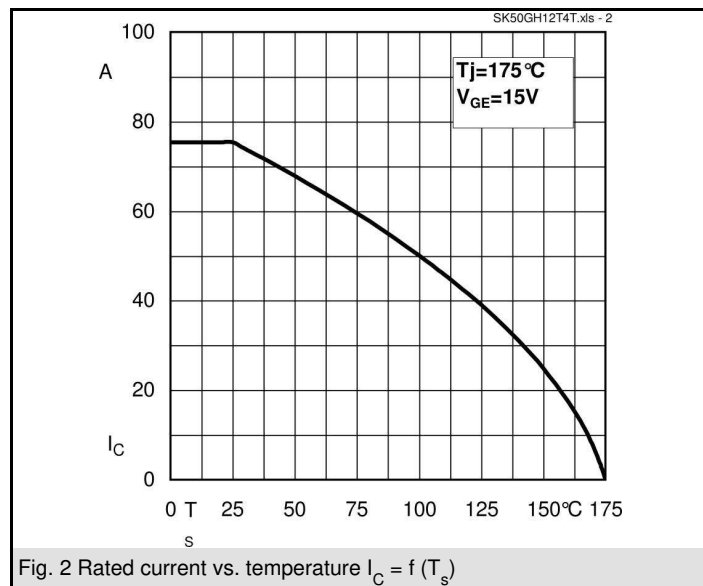
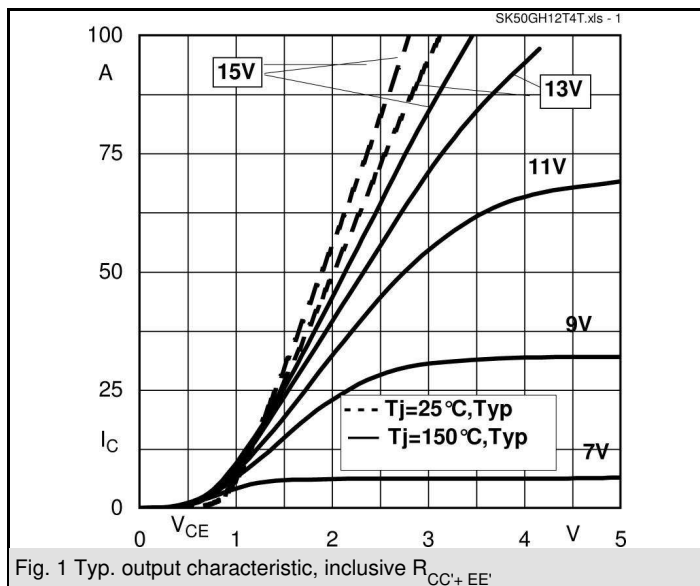
Typical Applications*

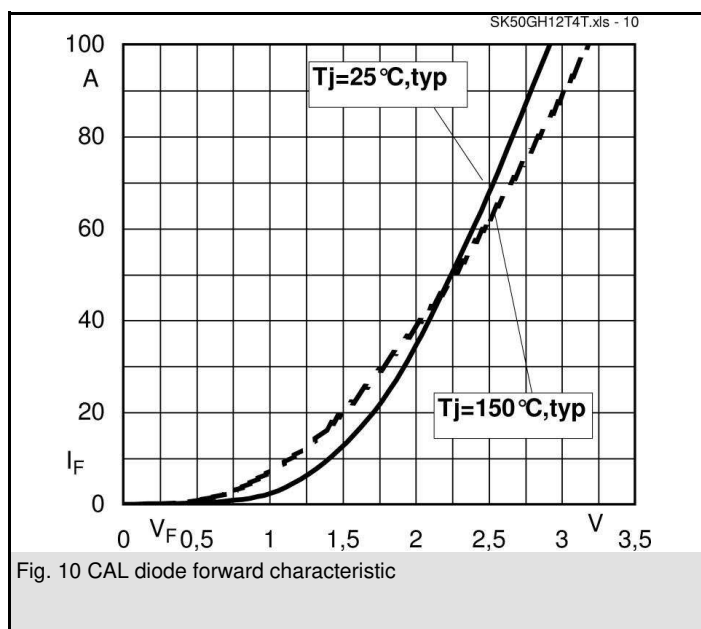
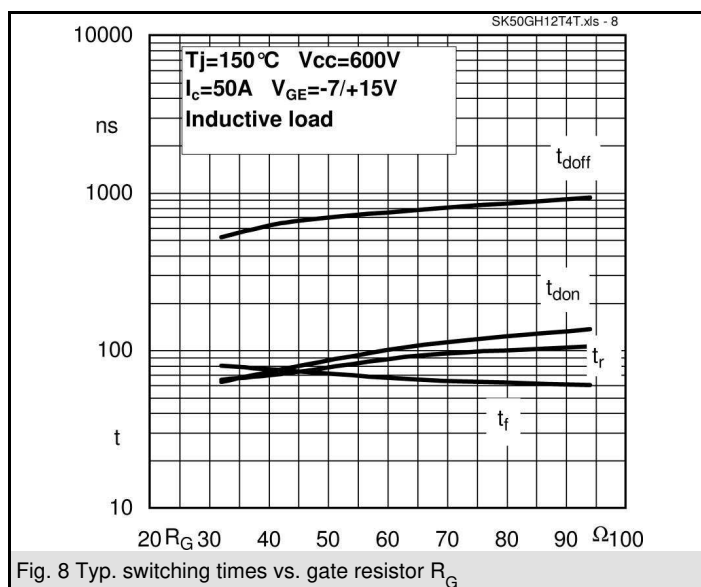
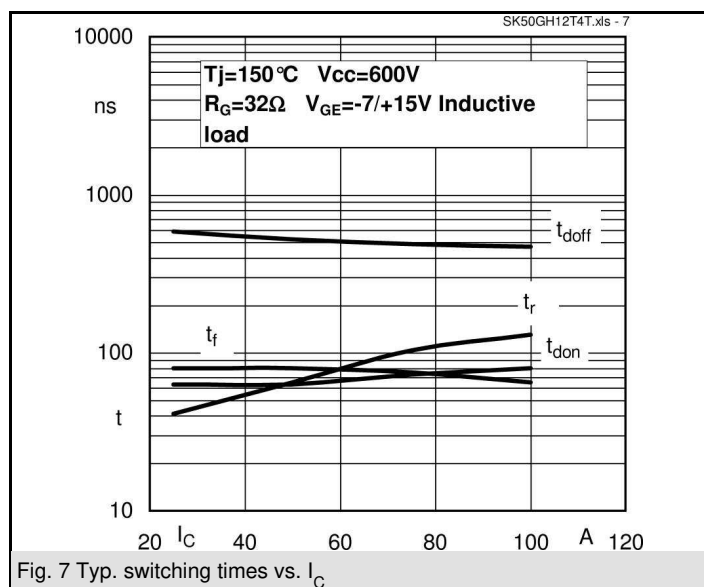
- Voltage regulator

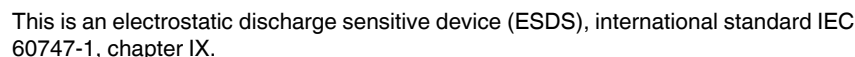
Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 50 \text{ A}; V_{GE} = 0 \text{ V}$				
	$T_j = 25 \text{ }^{\circ}\text{C}_{chiplev.}$		2,2	2,5	V
	$T_j = 150 \text{ }^{\circ}\text{C}_{chiplev.}$		2,1	2,45	V
V_{F0}					
	$T_j = 25 \text{ }^{\circ}\text{C}$		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







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