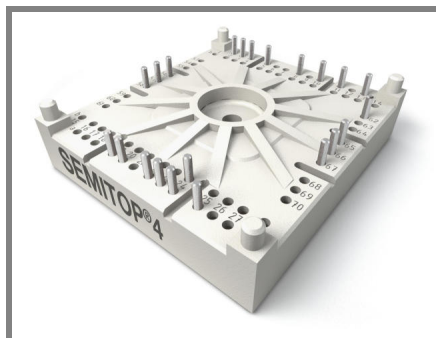




SEMISTOP®4

IGBT module

SK100GH128T

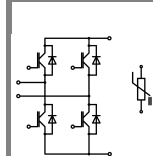
Target Data

Features

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

Typical Applications*

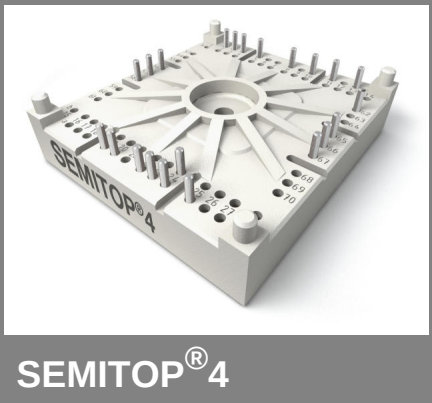
- Voltage regulator



GH-T

Absolute Maximum Ratings		$T_c = 25\text{ }^{\circ}\text{C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT			
V_{CES}	$T_j = 25\text{ }^{\circ}\text{C}$	1200	V
I_C	$T_j = 125\text{ }^{\circ}\text{C}$ $T_s = 25\text{ }^{\circ}\text{C}$	120	A
	$T_s = 70\text{ }^{\circ}\text{C}$	80	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$, $t_p \leq 1\text{ms}$	200	A
V_{GES}		20	V
t_{psc}	$V_{CC} = 600\text{ V}$; $V_{GE} \leq 20\text{ V}$; $T_j = 125\text{ }^{\circ}\text{C}$ $V_{CES} < 1200\text{ V}$	10	μs
Inverse Diode			
I_F	$T_j = 150\text{ }^{\circ}\text{C}$ $T_s = 25\text{ }^{\circ}\text{C}$	67	A
	$T_s = 70\text{ }^{\circ}\text{C}$	50	A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$, $t_p \leq 1\text{ms}$	110	A
I_{FSM}	$t_p = 10\text{ ms}$; half sine wave $T_j = 150\text{ }^{\circ}\text{C}$	550	A
Module			
$I_{t(RMS)}$			A
T_{vj}		-40 ... +150	$^{\circ}\text{C}$
T_{stg}		-40 ... +125	$^{\circ}\text{C}$
V_{isol}	AC, 1 min.	2500	V

Characteristics		$T_c = 25\text{ °C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 4\text{ mA}$	4,5	5,5	6,5	V
I_{CES}	$V_{GE} = 0\text{ V}$, $V_{CE} = V_{CES}$		0,4	0,2	mA
					mA
I_{GES}	$V_{CE} = 0\text{ V}$, $V_{GE} = 20\text{ V}$			400	nA
V_{CE0}			1,1	1,3	V
					V
r_{CE}	$V_{GE} = 15\text{ V}$		6	11	m Ω
					m Ω
$V_{CE(sat)}$	$I_{Cnom} = 100\text{ A}$, $V_{GE} = 15\text{ V}$		1,9	2,3	V
					V
C_{ies}	$V_{CE} = 25$, $V_{GE} = 0\text{ V}$		9		nF
C_{oes}					nF
C_{res}					nF
R_{Gint}	$T_j = 25\text{ °C}$		5		Ω
$t_{d(on)}$	$R_{Gon} = 4\text{ }\Omega$		80		ns
					ns
t_r	$R_{Goff} = 4\text{ }\Omega$		33		ns
					ns
E_{on}	$di/dt = 3000\text{ A}/\mu\text{s}$		5,97		mJ
					mJ
$t_{d(off)}$			418		ns
					ns
t_f			70		ns
					ns
E_{off}			8,5		mJ
					mJ
$R_{th(j-s)}$	per IGBT		0,34		K/W



IGBT module

SK100GH128T

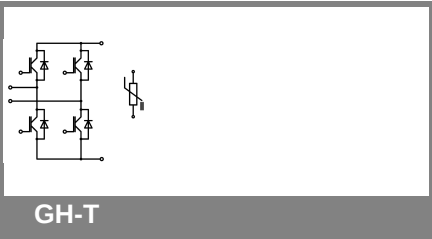
Target Data

Features

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

Typical Applications*

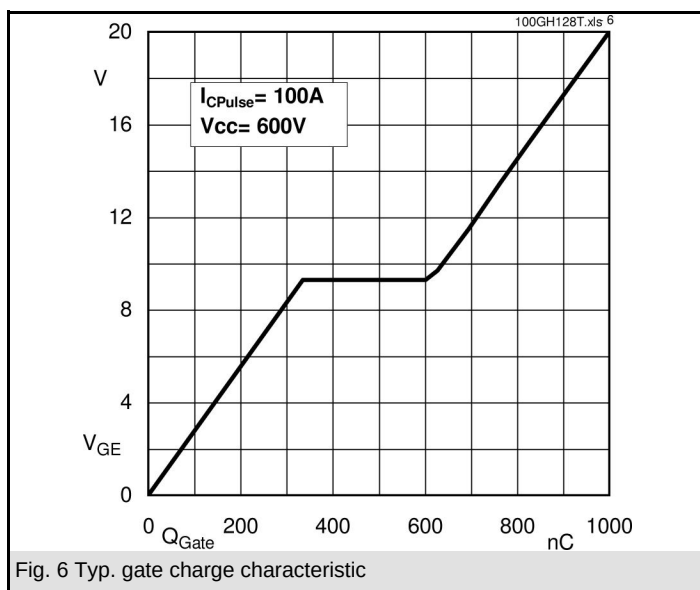
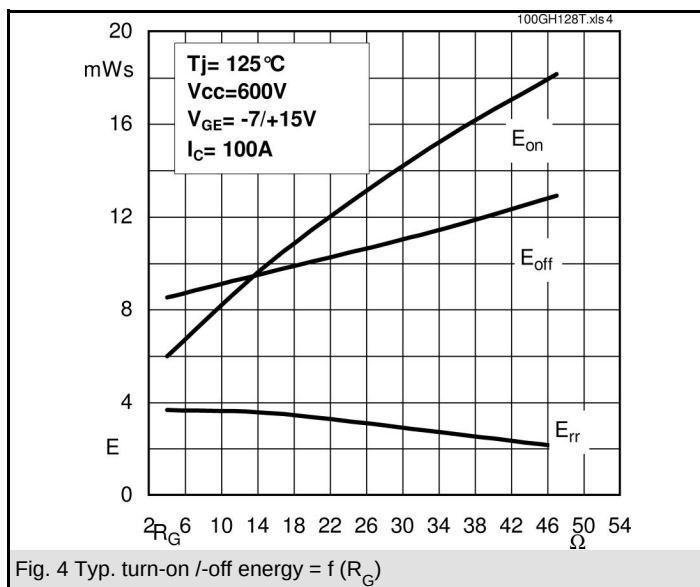
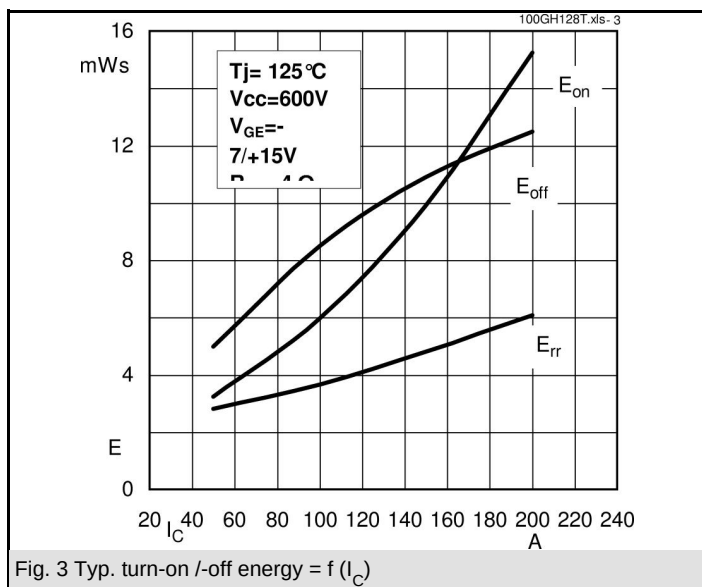
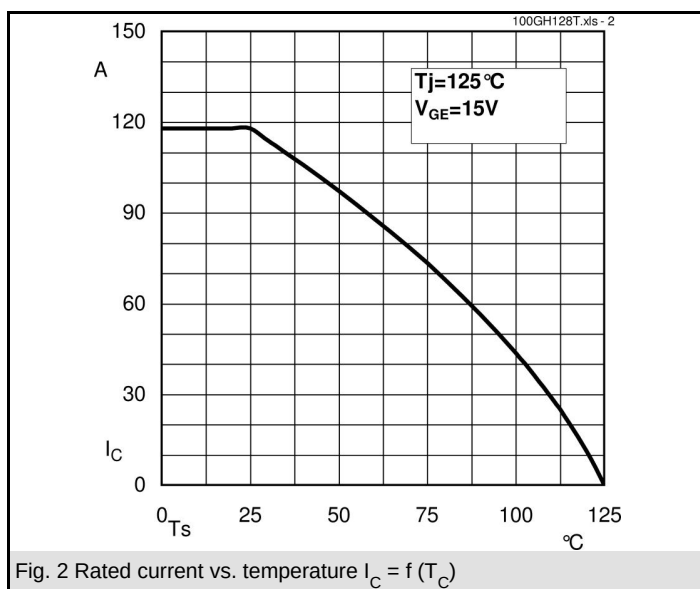
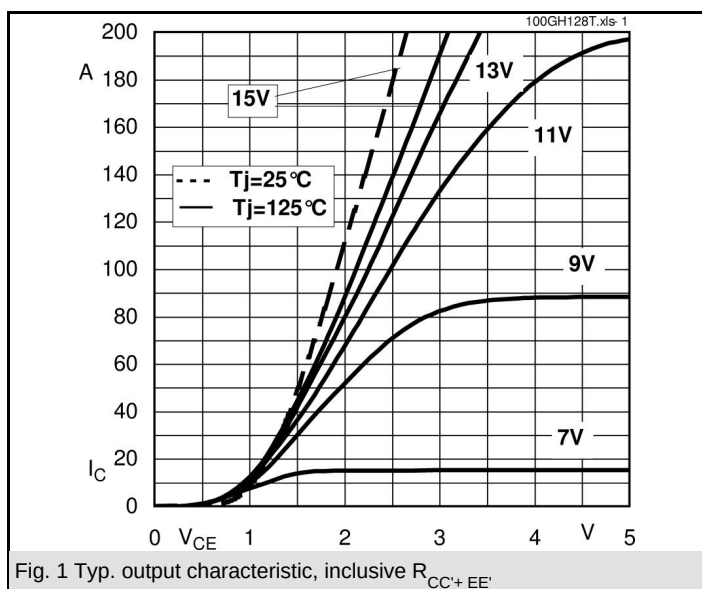
- Voltage regulator

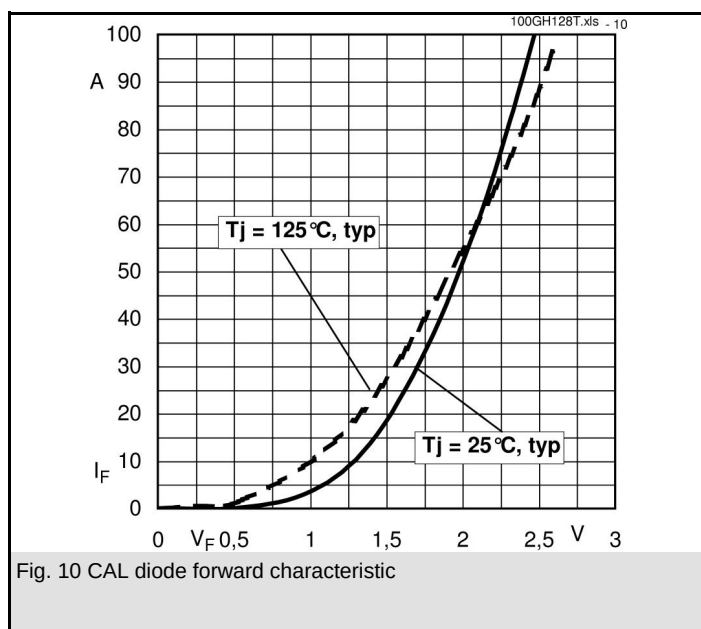
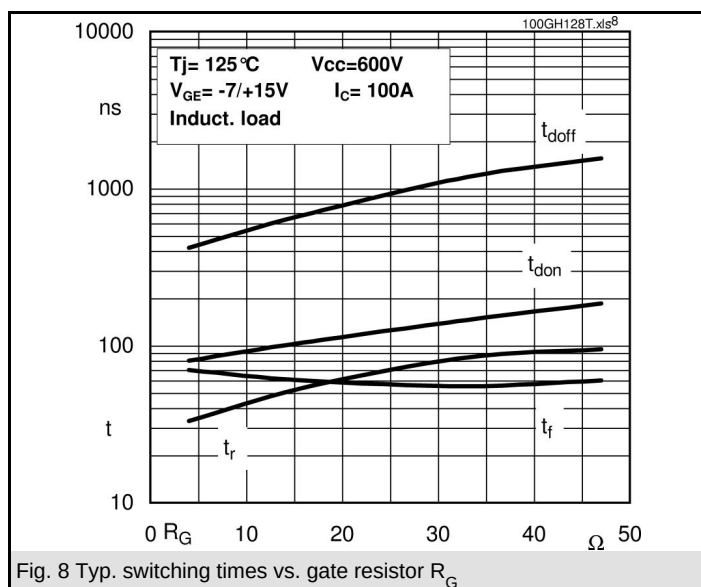
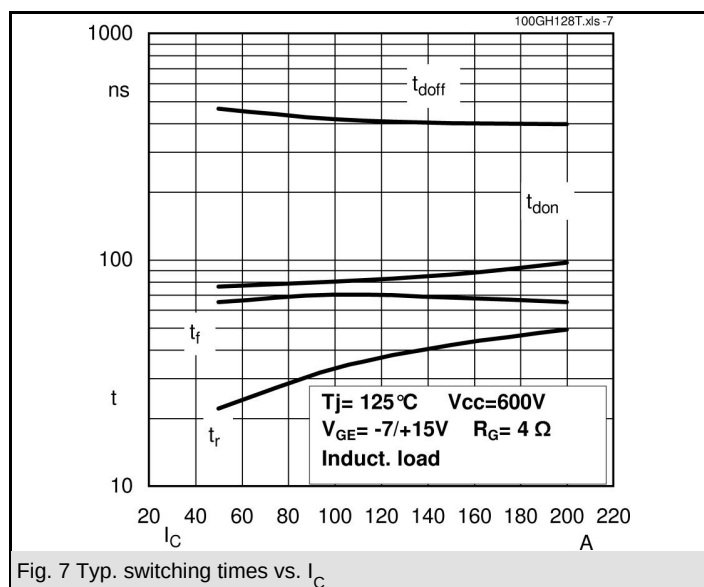


Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 55 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		2	2,5	V
		T _j = 125 °C _{chiplev.}		1,8	2,3	V
V _{F0}		T _j = 125 °C		1,2		V
r _F		T _j = 125 °C		10,9		mΩ
I _{RRM}	I _F = 100 A di/dt = 3000 A/μs V _{CC} =600V	T _j = 125 °C		125		A
Q _{rr}				25		μC
E _{rr}				3,66		mJ
R _{th(j-s)D}	per diode			0,7	0,85	K/W
Freewheeling Diode						
V _F = V _{EC}	I _{Fnom} = A; V _{GE} = V	T _j = °C _{chiplev.}				V
V _{F0}		T _j = °C				V
r _F		T _j = °C				V
I _{RRM}	I _F = A	T _j = °C				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°C (R ₂₅ =5kΩ)			493±5%		Ω

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

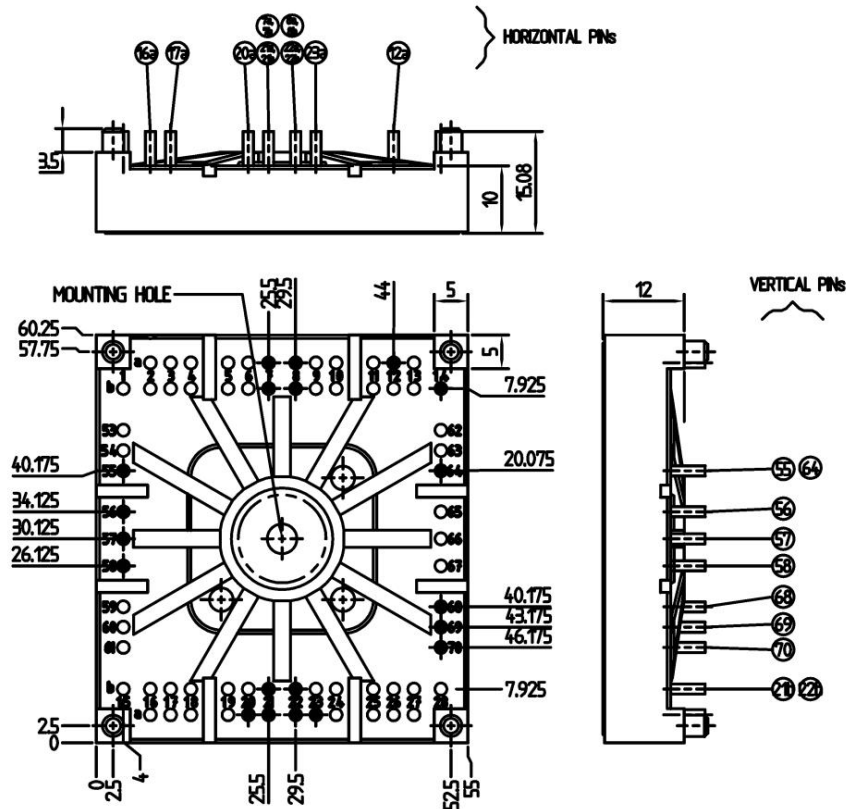
* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.





UL recognized file

no. E 63 532



Case T84 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)

