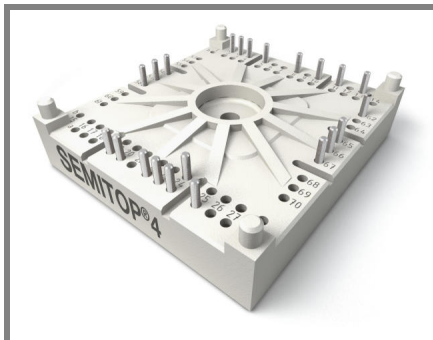


SK100GH128T



SEMITOP® 4

IGBT module

SK100GH128T

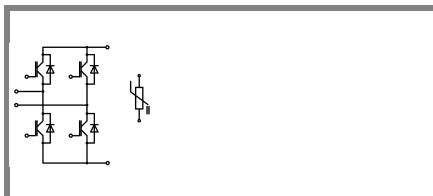
Target Data

Features

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

Typical Applications*

- Voltage regulator

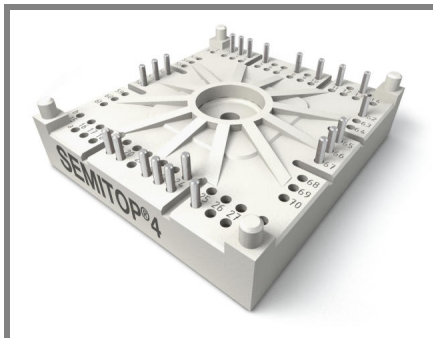


GH-T

Absolute Maximum Ratings		$T_c = 25\text{ °C}$, unless otherwise specified		
Symbol	Conditions	Values	Units	
IGBT				
V_{CES}	$T_j = 25\text{ °C}$	1200	V	
I_C	$T_j = 125\text{ °C}$	$T_s = 25\text{ °C}$	120	A
		$T_s = 70\text{ °C}$	80	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$, $t_p \leq 1\text{ ms}$	200	A	
V_{GES}		20	V	
t_{psc}	$V_{CC} = 600\text{ V}$; $V_{GE} \leq 20\text{ V}$; $T_j = 125\text{ °C}$ $V_{CES} < 1200\text{ V}$	10	μs	
Inverse Diode				
I_F	$T_j = 150\text{ °C}$	$T_s = 25\text{ °C}$	67	A
		$T_s = 70\text{ °C}$	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 $T_j = 150\text{ °C}$	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}	$V_{GE} = 0\text{ V}$, $V_{CE} = V_{CES}$	$T_j = 25\text{ °C}$		0,2	mA
		$T_j = 125\text{ °C}$		0,4	mA
I_{GES}	$V_{CE} = 0\text{ V}$, $V_{GE} = 20\text{ V}$			400	nA
V_{CE0}		$T_j = 25\text{ °C}$	1,1	1,3	V
		$T_j = 125\text{ °C}$	1	1,2	V
r_{CE}	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}$	6		m Ω
		$T_j = 125\text{ °C}$	11		m Ω
$V_{CE(sat)}$	$I_{Cnom} = 100\text{ A}$, $V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}_{chiplev.}$	1,9	2,3	V
		$T_j = 125\text{ °C}_{chiplev.}$	2,1		V
C_{ies}	$V_{CE} = 25$, $V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$	9		nF
C_{oes}			0,66		nF
C_{res}			0,42		nF
R_{Gint}	$T_j = 25\text{ °C}$		5		Ω
$t_{d(on)}$	$R_{Gon} = 4\text{ }\Omega$	$V_{CC} = 600\text{ V}$ $I_C = 100\text{ A}$	80		ns
t_r			33		ns
E_{on}	$R_{Goff} = 4\text{ }\Omega$ $di/dt = 3000\text{ A}/\mu\text{s}$	$T_j = 125\text{ °C}$	5,97		mJ
$t_{d(off)}$			418		ns
t_f			70		ns
E_{off}			8,5		mJ
$R_{th(j-s)}$	per IGBT		0,34		K/W

SK100GH128T



SEMITOP®4

IGBT module

SK100GH128T

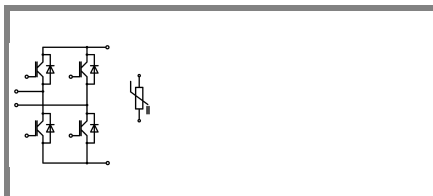
Target Data

Features

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- Improved thermal performances by aluminium oxide substrate
- SPT IGBT Technology
- CAL technology FWD
- Integrated NTC Temperature sensor

Typical Applications*

- Voltage regulator



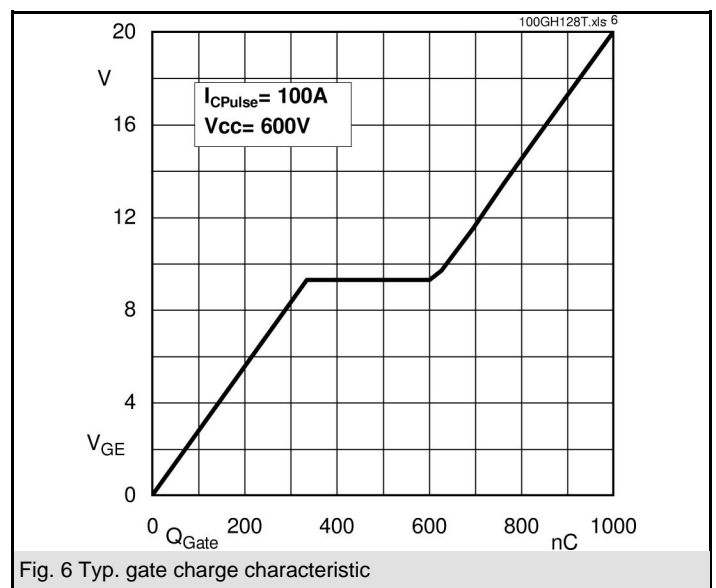
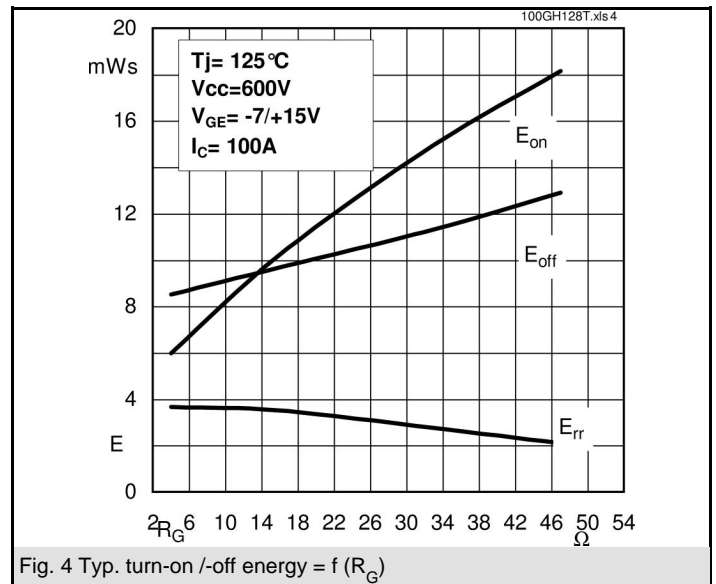
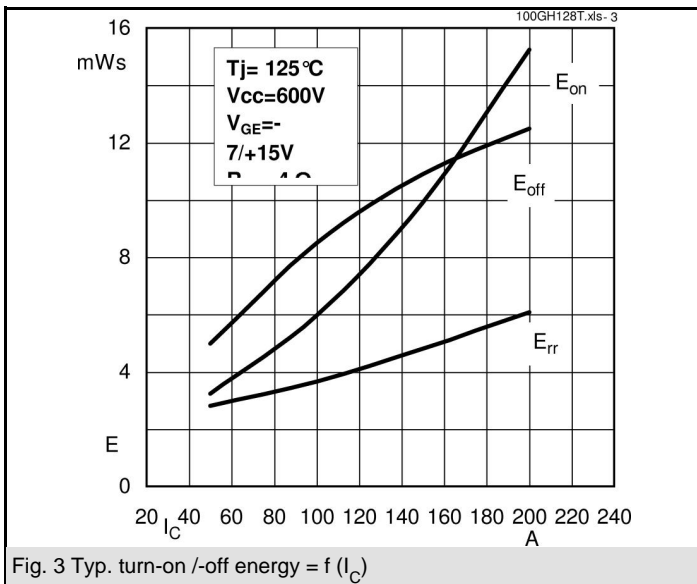
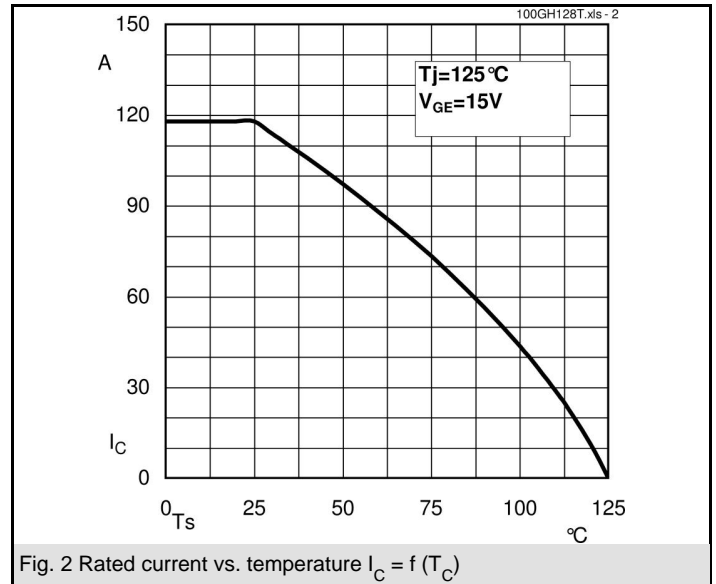
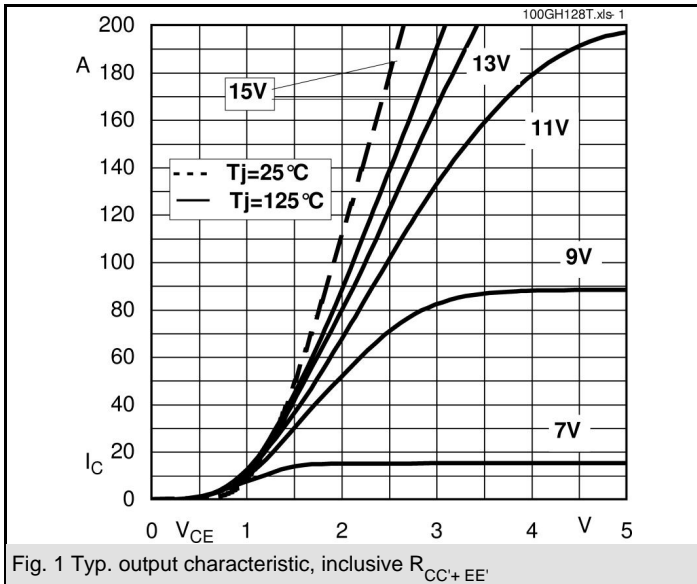
GH-T

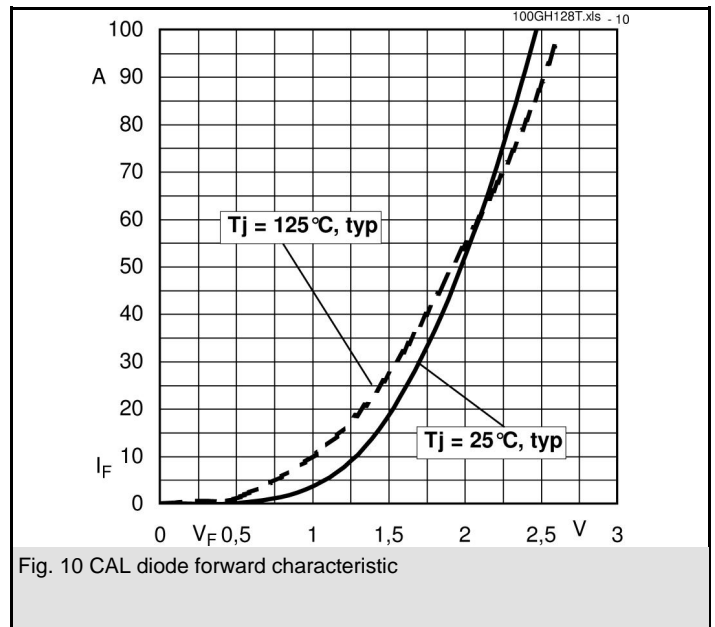
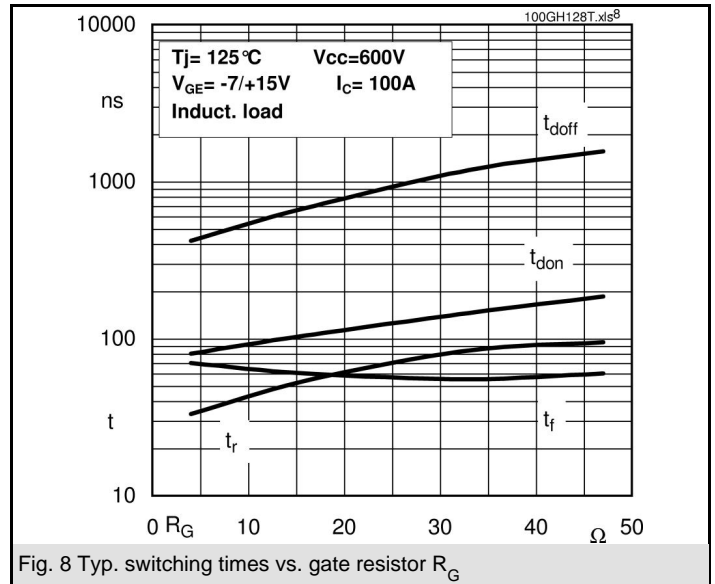
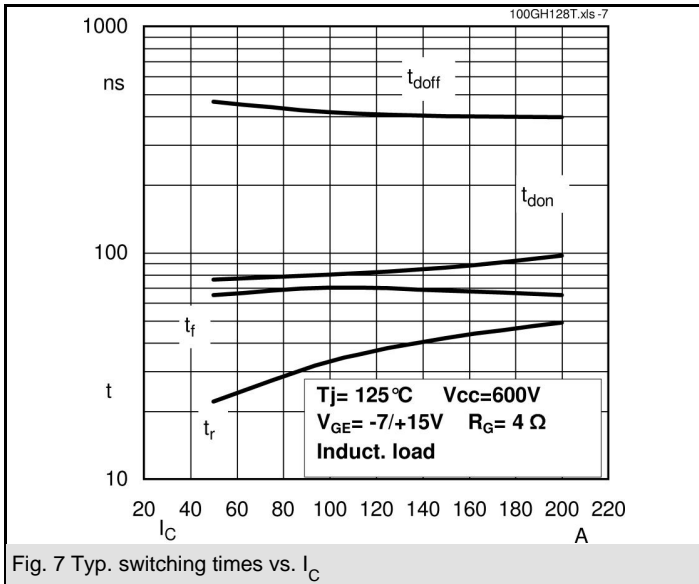
Characteristics

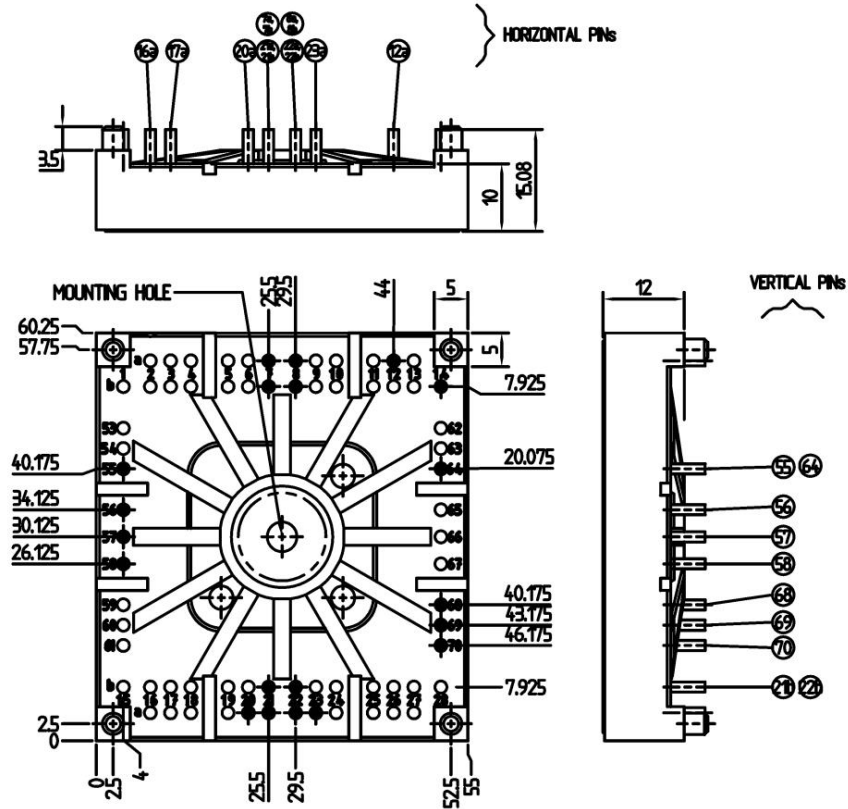
Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 55 \text{ A}; V_{GE} = 0 \text{ V}$		2	2,5	V
			1,8	2,3	V
V_{F0}			1,2		V
r_F			10,9		mΩ
I_{RRM}	$I_F = 100 \text{ A}$		125		A
Q_{rr}	$di/dt = 3000 \text{ A}/\mu\text{s}$		25		μC
E_{rr}	$V_{CC} = 600 \text{ V}$		3,66		mJ
$R_{th(j-s)D}$	per diode		0,7	0,85	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

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

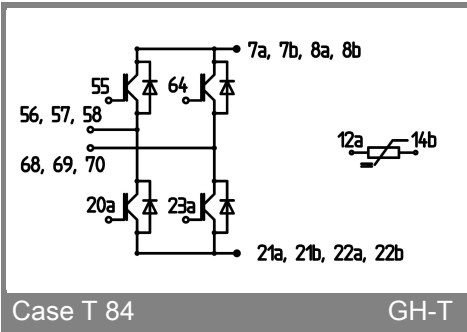
* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and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







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



Case T 84

GH-T