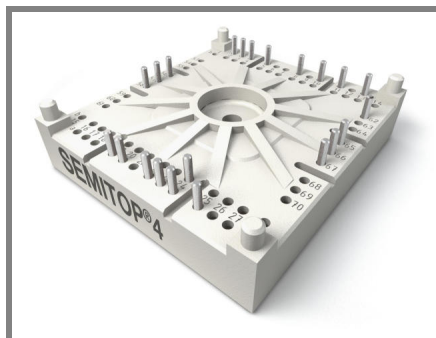


SK50GH128T



SEMISTOP®4

IGBT module

SK50GH128T

Target Data

Features

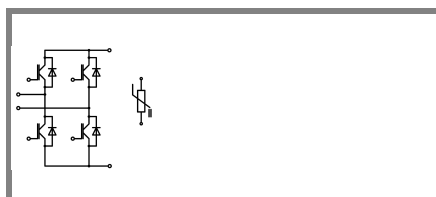
- One screw mounting module
- Fully compatible with SEMISTOP®1,2,3
- Improved thermal performances by aluminium oxide substrate
- SPT IGBT Technology
- CAL technology FWD
- Integrated NTC Temperature sensor

Typical Applications*

- Voltage regulator

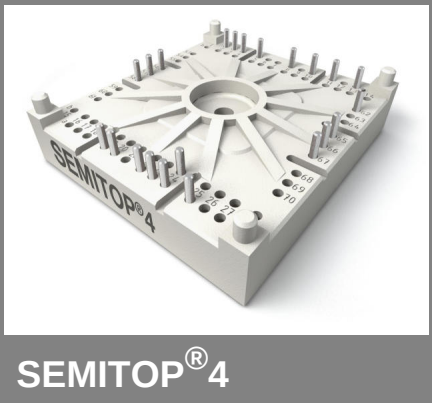
Absolute Maximum Ratings			$T_c = 25\text{ }^{\circ}\text{C}$, unless otherwise specified	
Symbol	Conditions		Values	Units
IGBT				
V_{CES}	$T_j = 25\text{ }^{\circ}\text{C}$		1200	V
I_C	$T_j = 125\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	70	A
		$T_s = 70\text{ }^{\circ}\text{C}$	50	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$, $t_p \leq 1\text{ms}$		100	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}	$I_{FRM} = 2 \times I_{Fnom}$, $t_p \leq 1\text{ms}$		150	A
I_{FSM}	$t_p = 10\text{ ms}$; half sine wave $T_j = 125\text{ }^{\circ}\text{C}$		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 °C, unless otherwise specified			
Symbol	Conditions		min.	typ.	max.	Units
IGBT						
V _{GE(th)}	V _{GE} = V _{CE} , I _C = 2 mA		4,5	5,5	6,5	V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES}	T _J = 25 °C	0,1			mA
		T _J = 125 °C	0,2			mA
I _{GES}	V _{CE} = 0 V, V _{GE} = 20 V	T _J = 125 °C	200			nA
V _{CE0}		T _J = 25 °C	1,1			V
		T _J = 125 °C	1			V
r _{CE}	V _{GE} = 15 V	T _J = 25°C	12			mΩ
		T _J = 125°C	22			mΩ
V _{CE(sat)}	I _{Cnom} = 50 A, V _{GE} = 15 V	T _J = 25°C _{chiplev.}	1,9			V
		T _J = 125°C _{chiplev.}	2,1			V
C _{ies}	V _{CE} = , V _{GE} = V	f = MHz	4,5			nF
C _{oes}			0,33			nF
C _{res}			0,21			nF
t _{d(on)}	R _{Gon} = 15 Ω	V _{CC} = 600V I _C = 50A T _J = 125 °C	6			ns
t _r						ns
E _{on}	R _{Goff} = 15 Ω		4,6			mJ
t _{d(off)}						ns
t _f			ns			
E _{off}					mJ	
R _{th(j-s)}	per IGBT		0,51			K/W



GH-T

SK50GH128T



IGBT module

SK50GH128T

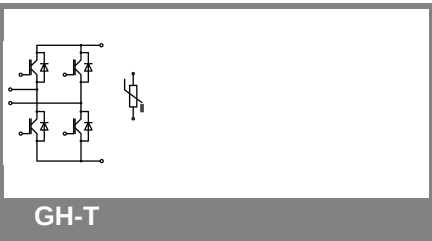
Target Data

Features

- One screw mounting module
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- Improved thermal performances by aluminium oxide substrate
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Typical Applications*

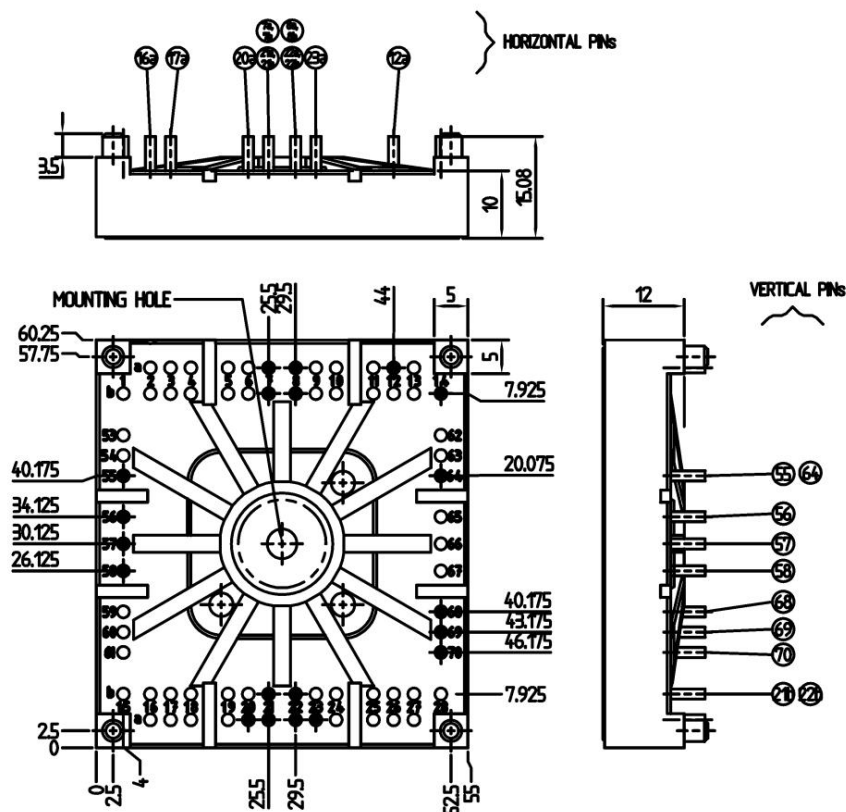
- Voltage regulator



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		V
	$T_j = 125\text{ }^{\circ}\text{C}_{chiplev.}$		1,8		V
V_{F0}	$T_j = 125\text{ }^{\circ}\text{C}$		1	1,2	V
r_F	$T_j = 125\text{ }^{\circ}\text{C}$		16	22	mΩ
I_{RRM}	$I_F = 50\text{ A}$				A
Q_{rr}					μC
E_{rr}	$V_{CC}=600\text{ V}$		4		mJ
$R_{th(j-s)D}$	per diode		0,7		K/W
Freewheeling Diode					
$V_F = V_{EC}$	$I_{Fnom} = \text{A}; V_{GE} = \text{V}$				V
V_{F0}	$T_j = \text{ }^{\circ}\text{C}$				V
r_F	$T_j = \text{ }^{\circ}\text{C}$				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}	$T_s = 100\text{ }^{\circ}\text{C} (R_{25}=5\text{ k}\Omega)$		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)

