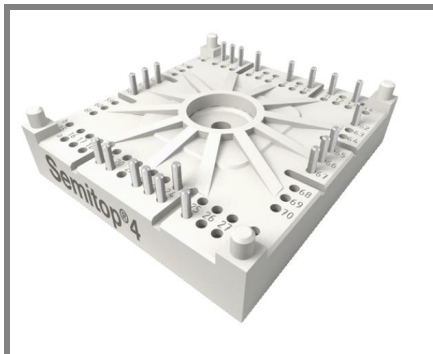


SK50GH128T



SEMITOP[®]4

IGBT module

SK50GH128T

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

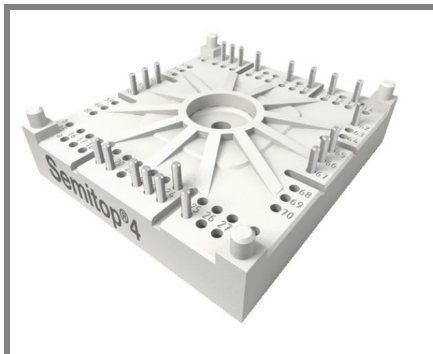
- Voltage regulator



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	$T_j = 125\text{ °C}$	$T_s = 25\text{ °C}$	70	A
		$T_s = 70\text{ °C}$	50	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$, $t_p \leq 1\text{ ms}$	100		A
V_{GES}		20		V
t_{psc}	$V_{CC} = 600\text{ V}$; $V_{GE} \leq 20\text{ V}$; $T_j = 125\text{ °C}$ $V_{CES} < 1200\text{ V}$	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}	$I_{FRM} = 2 \times I_{Fnom}$, $t_p \leq 1\text{ ms}$	150		A
I_{FSM}	$t_p = 10\text{ ms}$; half sine wave $T_j = 125\text{ °C}$	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					
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 2\text{ mA}$	4,5	5,5	6,5	V
I_{CES}	$V_{GE} = 0\text{ V}$, $V_{CE} = V_{CES}$	$T_j = 25\text{ °C}$		0,1	mA
		$T_j = 125\text{ °C}$		0,2	mA
I_{GES}	$V_{CE} = 0\text{ V}$, $V_{GE} = 20\text{ V}$			200	nA
V_{CE0}		$T_j = 25\text{ °C}$	1,1	1,3	V
		$T_j = 125\text{ °C}$	1	1,2	V
r_{CE}	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}$	12		$\text{m}\Omega$
		$T_j = 125\text{ °C}$	22		$\text{m}\Omega$
$V_{CE(sat)}$	$I_{Cnom} = 50\text{ A}$, $V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}_{chiplev.}$	1,9	2,3	V
		$T_j = 125\text{ °C}_{chiplev.}$	2,1		V
C_{ies}	$V_{CE} = \text{ , } V_{GE} = V$	$f = \text{ MHz}$	4,5		nF
C_{oes}			0,33		nF
C_{res}			0,21		nF
$t_{d(on)}$	$R_{Gon} = 15\ \Omega$	$V_{CC} = 600\text{ V}$ $I_{Cnom} = 50\text{ A}$ $T_j = 125\text{ °C}$	6		ns
t_r					ns
E_{on}				6	mJ
$t_{d(off)}$	$R_{Goff} = 15\ \Omega$				ns
t_f					ns
E_{off}				4,6	mJ
$R_{th(j-s)}$	per IGBT		0,51		K/W



SEMITOP[®]4

IGBT module

SK50GH128T

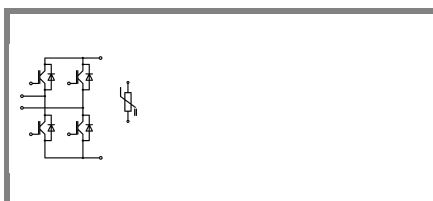
Target Data

Features

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Typical Applications

- Voltage regulator

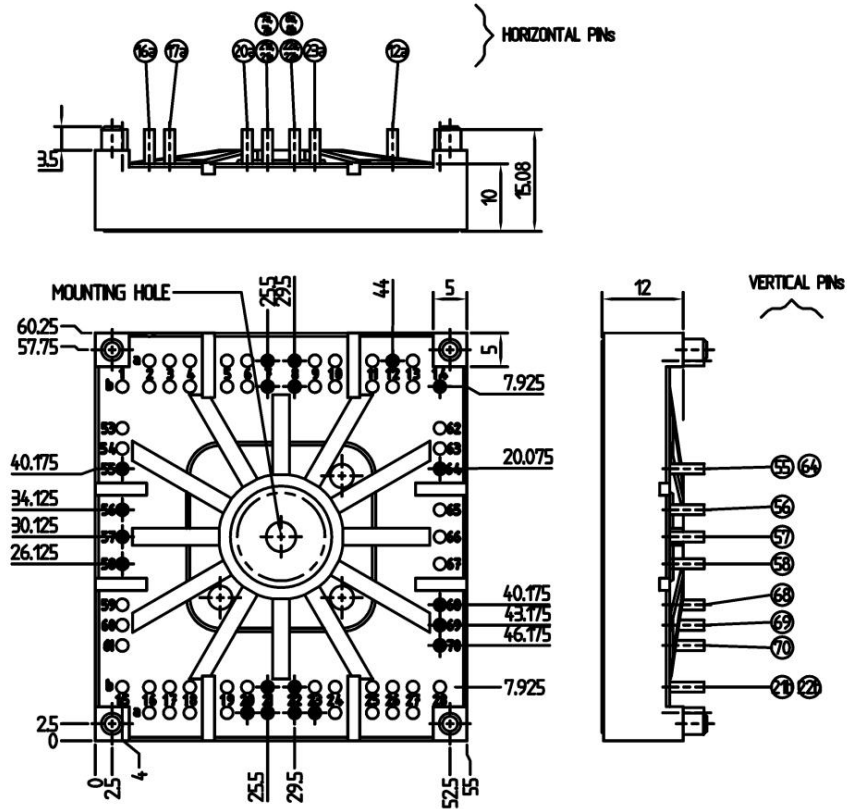


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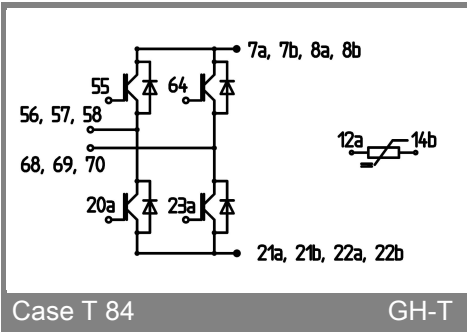
Characteristics				min.	typ.	max.	Units
Symbol	Conditions						
Inverse Diode							
$V_F = V_{EC}$	$I_{Fnom} = 100\text{ A}; V_{GE} = 0\text{ V}$	$T_j = 25\text{ }^\circ\text{C}_{\text{chiplev.}}$		2			V
		$T_j = 125\text{ }^\circ\text{C}_{\text{chiplev.}}$		1,8			V
V_{F0}		$T_j = 125\text{ }^\circ\text{C}$		1	1,2		V
r_F		$T_j = 125\text{ }^\circ\text{C}$		16	22		mΩ
I_{RRM}	$I_{Fnom} = 100\text{ A}$	$T_j = 125\text{ }^\circ\text{C}$					A
Q_{rr}							μC
E_{rr}	$V_{CC}=600\text{ V}$			4			mJ
$R_{th(j-s)D}$	per diode			0,7	0,85		K/W
Freewheeling Diode							
$V_F = V_{EC}$	$I_{Fnom} = \text{A}; V_{GE} = \text{V}$	$T_j = \text{ }^\circ\text{C}_{\text{chiplev.}}$					V
V_{F0}		$T_j = \text{ }^\circ\text{C}$					V
r_F		$T_j = \text{ }^\circ\text{C}$					V
I_{RRM}	$I_{Fnom} = \text{A}$	$T_j = \text{ }^\circ\text{C}$					A
Q_{rr}							μC
E_{rr}							mJ
	per diode						K/W
M_s	to heat sink				3,5		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.

This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.



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



Case T 84

GH-T