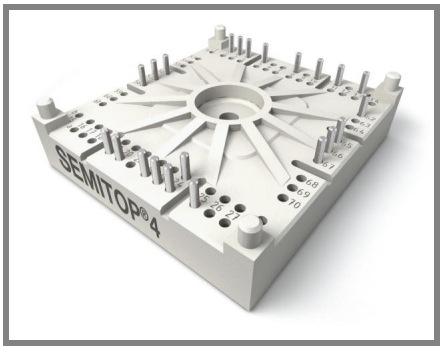
SK50GH128T



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*

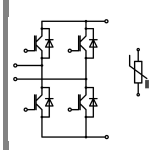
- Voltage regulator

Absolute Maximum Ratings T_c = 25 °C, unless otherwise specified

Symbol	Conditions		Values	Units
IGBT				
V_{CES}	T_j = 25 °C		1200	V
I_C	T_j = 125 °C	T_s = 25 °C	70	A
		T_s = 70 °C	50	A
I_{CRM}	I_{CRM}= 2 x I_{Cnom} , $t_p \leq$ 1ms		100	A
V_{GES}			20	V
t_{psc}	V_{CC} = 600 V; $V_{GE} \leq$ 20 V; V_{CES} < 1200 V	T_j = 125 °C	10	µs
Inverse Diode				
I_F	T_j = 150 °C	T_s = 25 °C	67	A
		T_s = 70 °C	50	A
I_{FRM}	I_{FRM}= 2 x I_{Fnom} , $t_p \leq$ 1ms		150	A
I_{FSM}	t_p = 10 ms; half sine wave	T_j = 125 °C	550	A
Module				
$I_{t(RMS)}$				A
T_{vj}			-40 ... +150	°C
T_{stg}			-40 ... +125	°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	1,3	V
		T_j = 125 °C		1	1,2	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	2,3	V
		T_j = 125°$C_{chiplev.}$		2,1		V
C_{ies}				4,5		nF
C_{oes}	V_{CE} = , V_{GE} = V	f = MHz		0,33		nF
C_{res}				0,21		nF
$t_{d(on)}$						ns
t_r	R_{Gon} = 15 Ω	V_{CC} = 600V				ns
E_{on}		I_C= 50A		6		mJ
$t_{d(off)}$	R_{Goff} = 15 Ω	T_j = 125 °C				ns
t_f						ns
E_{off}				4,6		mJ
$R_{th(j-s)}$	per IGBT			0,51		K/W



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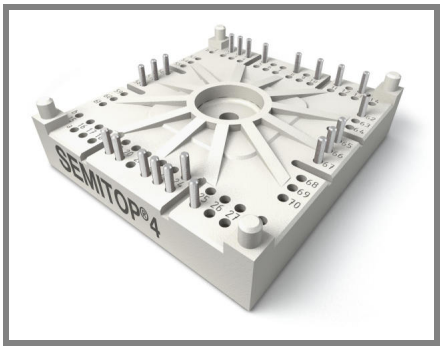

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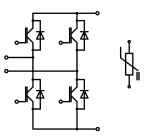
Typical Applications*

- Voltage regulator

Characteristics						
Symbol	**Conditions**		**min.**	**typ.**	**max.**	**Units**
Inverse Diode						
$V_F = V_{EC}$	I_{Fnom} = 50 A; V_{GE} = 0 V	T_j = 25 °$C_{chiplev.}$		2		V
		T_j = 125 °$C_{chiplev.}$		1,8		V
V_{F0}		T_j = 125 °C		1	1,2	V
r_F		T_j = 125 °C		16	22	mΩ
I_{RRM}	I_F = 50 A	T_j = 125 °C				A
Q_{rr}						µC
E_{rr}	V_{CC}=600V			4		mJ
$R_{th(j-s)D}$	per diode			0,7		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.



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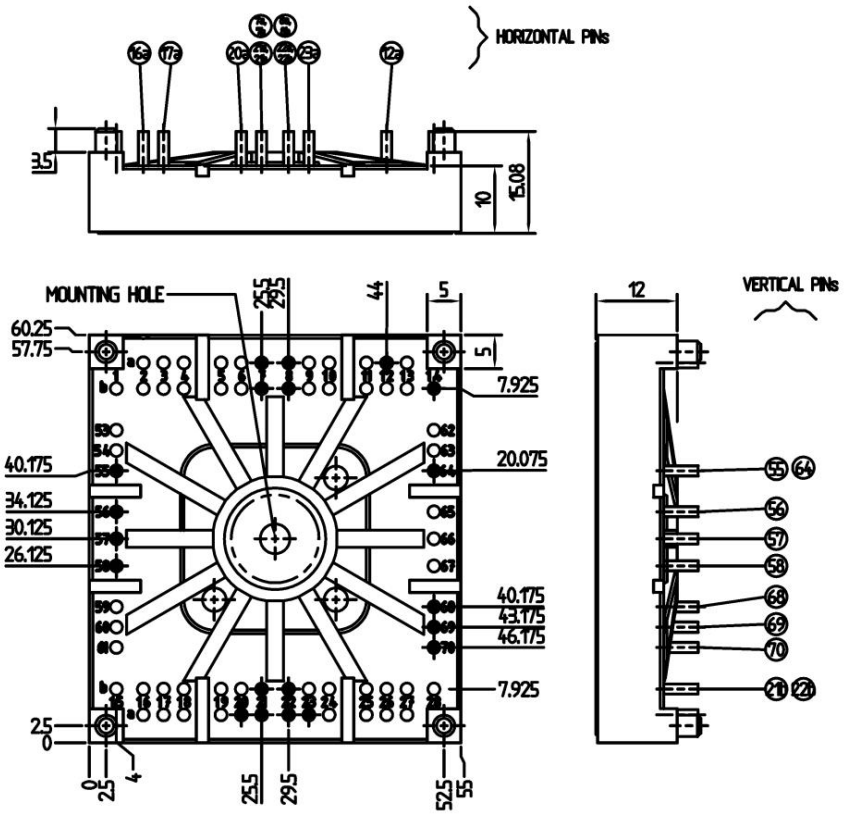
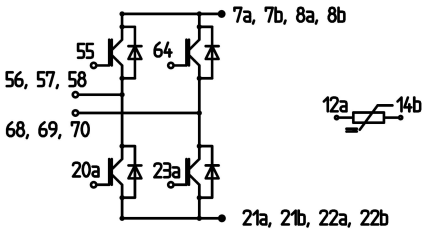


Case T84 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 84 GH-T

