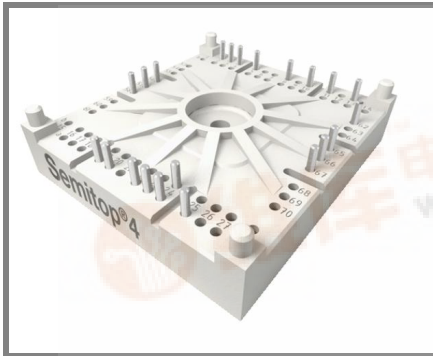


SK50GH128T



SEMITOR® 4

IGBT module

SK50GH128T

Target Data

Features

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

Typical Applications

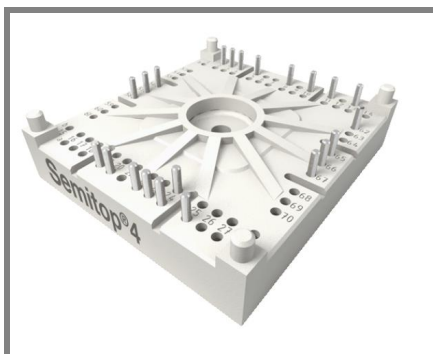
- Voltage regulator

Absolute Maximum Ratings		$T_c = 25^\circ\text{C}$, unless otherwise specified		
Symbol	Conditions	Values		Units
IGBT				
V_{CES}	$T_j = 25^\circ\text{C}$	1200		V
I_C	$T_j = 125^\circ\text{C}$	$T_s = 25^\circ\text{C}$	70	A
		$T_s = 70^\circ\text{C}$	50	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$, $t_p \leq 1\text{ms}$	100		A
V_{GES}		20		V
t_{psc}	$V_{CC} = 600\text{V}$; $V_{GE} \leq 20\text{V}$; $T_j = 125^\circ\text{C}$ $V_{CES} < 1200\text{V}$	10		μs
Inverse Diode				
I_F	$T_j = 150^\circ\text{C}$	$T_s = 25^\circ\text{C}$	67	A
		$T_s = 70^\circ\text{C}$	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 $T_j = 125^\circ\text{C}$	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		$T_c = 25^\circ\text{C}$, 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}	$V_{GE} = 0\text{V}$, $V_{CE} = V_{CES}$	$T_j = 25^\circ\text{C}$	0,1		mA
		$T_j = 125^\circ\text{C}$	0,2		mA
I_{GES}	$V_{CE} = 0\text{V}$, $V_{GE} = 20\text{V}$			200	nA
V_{CE0}		$T_j = 25^\circ\text{C}$	1,1	1,3	V
		$T_j = 125^\circ\text{C}$	1	1,2	V
r_{CE}	$V_{GE} = 15\text{V}$	$T_j = 25^\circ\text{C}$	12		$\text{m}\Omega$
		$T_j = 125^\circ\text{C}$	22		$\text{m}\Omega$
$V_{CE(sat)}$	$I_{Cnom} = 50\text{A}$, $V_{GE} = 15\text{V}$	$T_j = 25^\circ\text{C}_{chiplev.}$	1,9	2,3	V
		$T_j = 125^\circ\text{C}_{chiplev.}$	2,1		V
C_{res}	$V_{CE} = \cdot$, $V_{GE} = \text{V}$	$f = \text{MHz}$	4,5		nF
C_{oes}			0,33		nF
C_{res}			0,21		nF
$t_{d(on)}$	$R_{Gon} = 15\Omega$	$V_{CC} = 600\text{V}$ $I_{Cnom} = 50\text{A}$ $T_j = 125^\circ\text{C}$	6		ns
t_r					ns
E_{on}	$R_{Goff} = 15\Omega$	$V_{CC} = 600\text{V}$ $I_{Cnom} = 50\text{A}$ $T_j = 125^\circ\text{C}$	4,6		mJ
$t_{d(off)}$					ns
t_f					ns
E_{off}			4,6		mJ
$R_{th(j-s)}$	per IGBT	0,51		K/W	



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

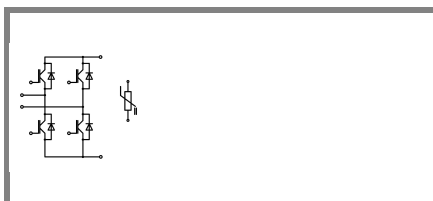
Typical Applications

- Voltage regulator

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

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GH-T

