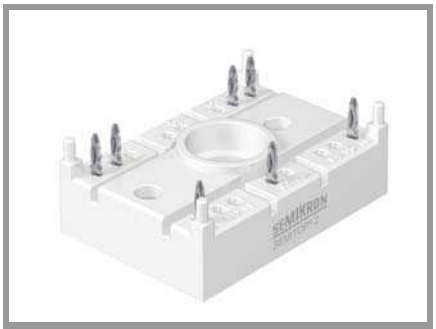
SK25MH120TSCp



SEMITOP® 2 Press-Fit

SIC MOSFET Module

Engineering Sample

SK25MH120TSCp

Target Data

Features

- SiC Power MOSFET
- Single phase inverter topology
- One screw mounting module
- Fully compatible with other SEMITOP® Press-Fit types
- Improved thermal performance by aluminium oxide substrate
- Ultra Low inductance design
- Extremely fast switching
- UL recognized, file no. E63532

Typical Applications*

- Solar inverter
- UPS
- Power Supply

Absolute Maximum Ratings

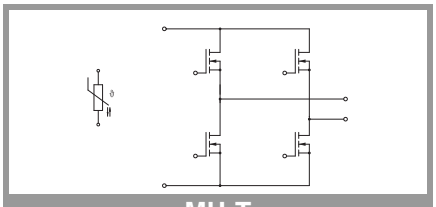
Symbol	Conditions		Values	Unit
MOSFET				
V_{DSS}			1200	V
I_D	T_j = 175 °C	T_s = 25 °C	26	A
		T_s = 70 °C	22	A
I_{DM}			140	A
V_{GS}			-6 ... 22	V
T_j			-40 ... 175	°C
Integrated MOS-diode				
I_{FM}				A

Absolute Maximum Ratings

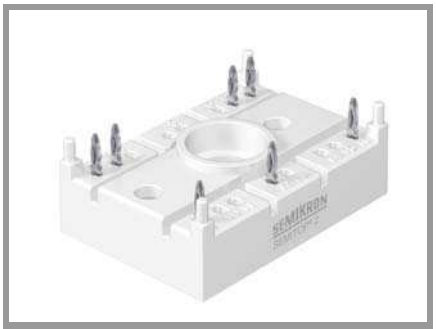
Symbol	Conditions	Values	Unit
Module			
$I_{t(RMS)}$	$T_{terminal}$ = 100 °C, T_S = 60°C	40	A
T_{stg}		-40 ... 125	°C
V_{isol}	AC, sinusoidal, t = 1 min	2500	V

Characteristics

Symbol	Conditions		min.	typ.	max.	Unit
MOSFET						
$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 1 mA		1200			V
$V_{GS(th)}$	V_{DS} = V_{GS}	T_j = 25 °C	1.7		4	V
	I_D = 4.4 mA					V
I_{DSS}	V_{GS} = 0 V, V_{DS} = 1200 V, T_j = 25 °C				0.01	mA
I_{GSS}	V_{DS} = 0 V, V_{GS} = 22 V				100	nA
$R_{DS(on)}$	V_{GS} = 18 V	T_j = 25 °C		80	111	mΩ
	I_D = 10 A	T_j = 125 °C		124		mΩ
C_{iss}	V_{GS} = 0 V, V_{DS} = 800 V, f = 1 MHz			2070		pF
C_{oss}	V_{GS} = 0 V, V_{DS} = 800 V, f = 1 MHz			80		pF
C_{rss}	V_{GS} = 0 V, V_{DS} = 800 V, f = 1 MHz			20		pF
R_{Gint}	T_j = 25 °C			9.0		Ω
Q_G	V_{GS} = 18V			110		nC
$t_{d(on)}$	V_{DD} = 600 V	T_j = 150 °C				ns
$t_{d(off)}$		T_j = 150 °C				ns
t_r	I_D = 25 A	T_j = 150 °C				ns
t_f	R_G = 2 Ω	T_j = 150 °C				ns
E_{on}	di/dt$_{on}$ = 1000 A/µs	T_j = 150 °C		0.78		mJ
E_{off}		T_j = 150 °C		0.33		mJ
$R_{th(j-s)}$	per MOSFET			1.4		K/W



MH-T



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Typical Applications*

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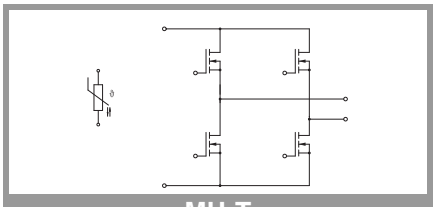
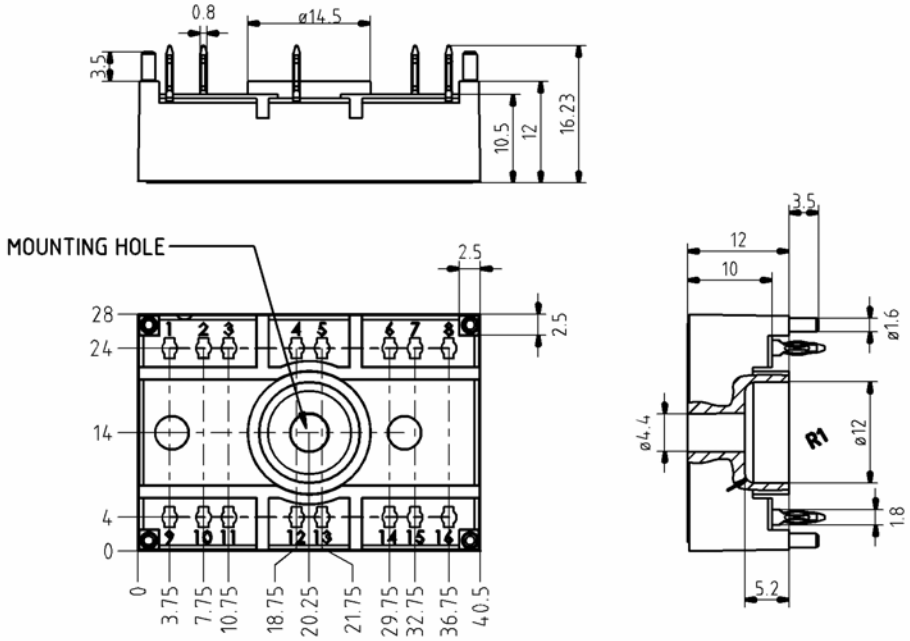
Characteristics					
Symbol	**Conditions**	**min.**	**typ.**	**max.**	**Unit**
Module					
M_s	to heatsink	1.8		2	Nm
w	weight		19		g

Characteristics					
Symbol	**Conditions**	**min.**	**typ.**	**max.**	**Unit**
Temperature Sensor					
R_{100}	T_r = 100 °C,		493 ± 5%		Ω
$B_{100/125}$	$R_2=R_1*\exp[B(1/T_1-1/T_2)]$, T(K), ,		3550 ±2%		K



MH-T

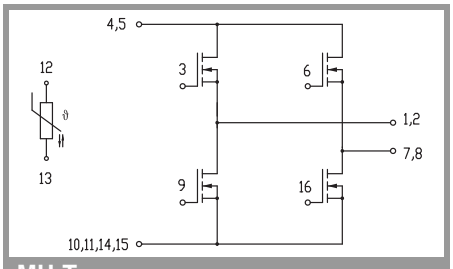
dimensions in mm
tolerance system: ISO 2768-m



Suggested drilled hole diameter for terminal pins in the circuit board:
•minimum:1,575mm
•typical: 1,6mm
•maximum: 1,625mm

Suggested hole diameter for the mounting pins in the circuit board: 2mm

SEMITOP 2 Press-Fit



MH-T

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

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