



**SEMITOP®2**

## Thyristor/Diode Module

### SK 20 NHMH

#### Target Data

#### Features

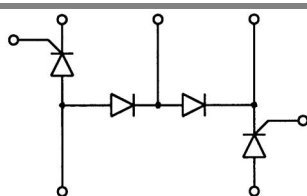
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Glass passivated thyristor chip
- High surge currents

#### Typical Applications\*

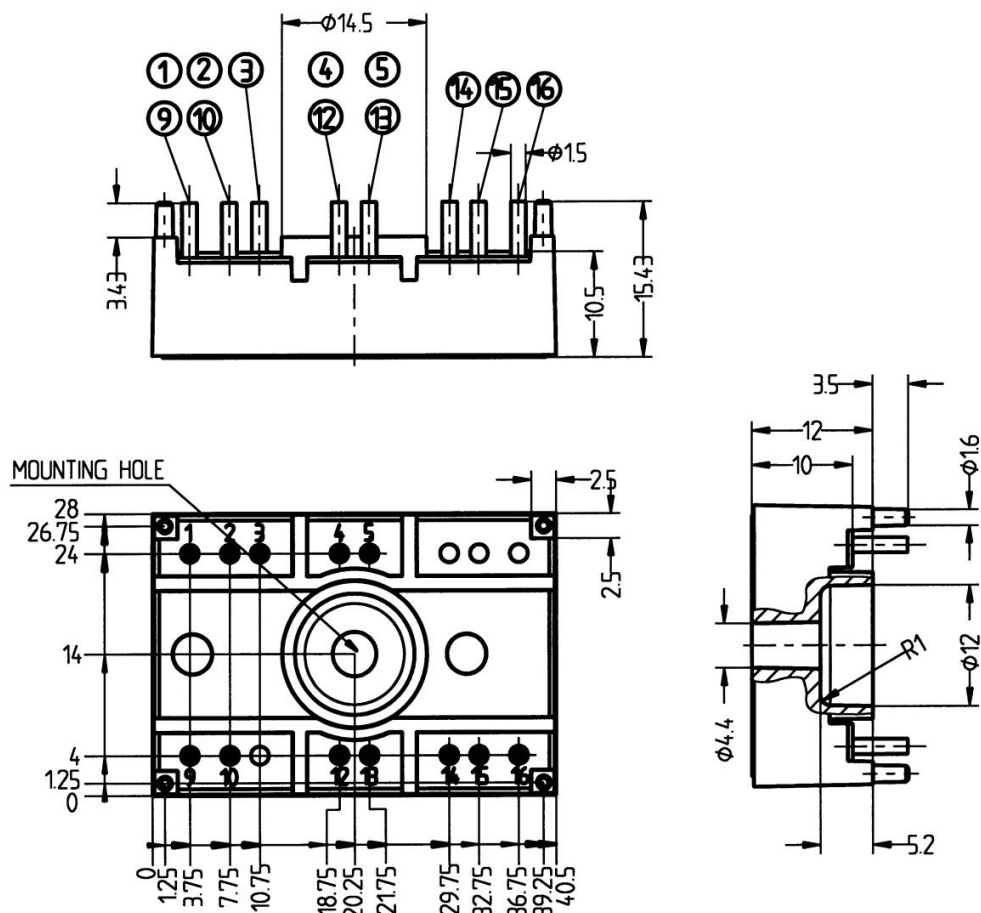
- UPS
- 1) Value limited by thyristor chip  
2) Thermal resistance junction to heatsink

$V_{RSM}$ V	$V_{RRM}, V_{DRM}$ V	$I_{RMS}^{1)}$ (maximum values for cont. operation) 21 A ( $T_s = 85^\circ\text{C}$ )
900	800	SK 20 NHMH 08
1100	1000	SK 20 NHMH 10

Characteristics <span style="float: right;"><math>T_s = 25^\circ\text{C}</math>, unless otherwise specified</span>			
Symbol	Conditions	Values	Units
$I_{TAV}$	sin. $180^\circ$ ; $T_h = 85^\circ\text{C}$	21	A
			A
$I_{TSM}/I_{FSM}$	$T_{vj} = 25 (125)^\circ\text{C}$ ; 10 ms	450 (380)	A
$I^2t$	$T_{vj} = 25 (125)^\circ\text{C}$ ; 8,3 ... 10 ms	1000 (720)	A <sup>2</sup> s
$T_{stg}$		-40 ... +125	$^\circ\text{C}$
$T_{solder}$	terminals, 10 s	260	$^\circ\text{C}$
<b>Thyristor</b>			
$(dv/dt)_{cr}$	$T_{vj} = 125^\circ\text{C}$	1000	V/ $\mu\text{s}$
$(di/dt)_{cr}$	$T_{vj} = 125^\circ\text{C}$ ; $f = 50 \dots 60 \text{ Hz}$	50	A/ $\mu\text{s}$
$t_q$	$T_{vj} = 125^\circ\text{C}$ ; typ.	80	$\mu\text{s}$
$I_H$	$T_{vj} = 25^\circ\text{C}$ ; typ. / max.	80 / 150	mA
$I_L$	$T_{vj} = 25^\circ\text{C}$ ; $R_G = 33 \Omega$ ; typ. / max.	150 / 300	mA
$V_T$	$T_{vj} = 25^\circ\text{C}$ ; ( $I_T = 75 \text{ A}$ ); max.	1,9	V
$V_{T(TO)}$	$T_{vj} = 125^\circ\text{C}$	max. 1	V
$r_T$	$T_{vj} = 125^\circ\text{C}$	max. 10	m $\Omega$
$I_{DD}, I_{RD}$	$T_{vj} = 125^\circ\text{C}$ ; $V_{DD} = V_{DRM}$ ; $V_{RD} = V_{RRM}$	max. 10	mA
$R_{th(j-s)}$	cont. 2)	1,2	K/W
$T_{vj}$		-40 ... +125	$^\circ\text{C}$
$V_{GT}$	$T_{vj} = 25^\circ\text{C}$ ; d.c.	2	V
$I_{GT}$	$T_{vj} = 25^\circ\text{C}$ ; d.c.	100	mA
$V_{GD}$	$T_{vj} = 125^\circ\text{C}$ ; d.c.	0,25	V
$I_{GD}$	$T_{vj} = 125^\circ\text{C}$ ; d.c.	3	mA
<b>Diode</b>			
$V_F$	$T_{vj} = 25^\circ\text{C}$ ; ( $I_F = 80 \text{ A}$ ); max.	1,45	V
$V_{T(TO)}$	$T_{vj} = 150^\circ\text{C}$	0,8	V
$r_T$	$T_{vj} = 150^\circ\text{C}$	7,5	m $\Omega$
$I_{RD}$	$T_{vj} = 150^\circ\text{C}$ ; $V_{RD} = V_{RRM}$	4	mA
$R_{th(j-s)}$	per diode <sup>2)</sup>	1,2	K/W
$T_{vj}$		-40 ... +150	$^\circ\text{C}$
<b>Mechanical data</b>			
$V_{isol}$	a.c. 50 Hz; r.m.s., 1s (1 min)	3000 (2500)	V
$M_1$	mounting torque	2	Nm
w		19	g
Case	SEMITOP®2	T 30	

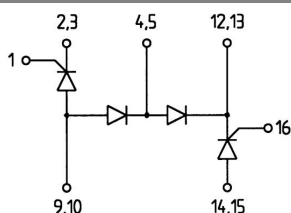


NHMH



SUGGESTED HOLEDIAMETER FOR THE SOLDER PINS AND THE MOUNTING PINS IN THE PCB: 2 mm

Case T 30 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 30

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 staff.