

## SEMITOP® 3 Press-Fit

### Antiparallel Thyristor Module

#### Engineering Sample

#### SK25UT16p

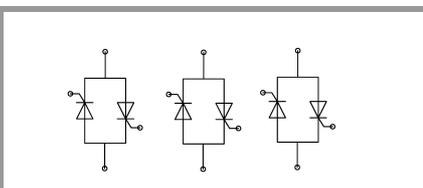
#### Target Data

#### Features

- Compact Design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passivated thyristor chips
- Up to 1600V reverse voltage
- UL recognized, file no. E 63 532

#### Typical Applications\*

- Soft starters
- Light control (studios, theaters...)
- Temperature control



UT

Absolute Maximum Ratings			
Symbol	Conditions	Values	Unit
<b>Thyristor 1</b>			
$V_{RRM}$		1600	V
$I_{T(AV)}$	$T_j = 130\text{ °C}, T_s = 80\text{ °C}$	17	A
$I_{TSM}$	$t_p = 10\text{ ms}, \sin 180^\circ, T_j = 25\text{ °C}$	370	A
$i^2t$	$t_p = 10\text{ ms}, \sin 180^\circ, T_j = 25\text{ °C}$	685	A <sup>2</sup> s
$T_j$		-40 ... 125	°C

Absolute Maximum Ratings			
Symbol	Conditions	Values	Unit
<b>Module</b>			
$I_{T(RMS)}$	$T_{\text{terminal}} = 100\text{ °C}, T_s = 60\text{ °C}$	40	A
$T_{\text{stg}}$		-40 ... 125	°C
$V_{\text{isol}}$	AC, sinusoidal, $t = 1\text{ min}$	2500	V

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
<b>Thyristor 1</b>					
$V_T$	$I_T = 25\text{ A}$			1.22	V
	chip			1.19	V
					$T_j = 25\text{ °C}$
					$T_j = 125\text{ °C}$
$V_{T(TO)}$	$T_j = 130\text{ °C}$			1.1	V
$r_T$	$T_j = 130\text{ °C}$			13.9	mΩ
$V_{GT}$	$T_j = 25\text{ °C}$	1.65			V
$I_{GT}$	$T_j = 25\text{ °C}$	100			mA
$I_H$	$T_j = 25\text{ °C}$			165	mA
$I_L$	$T_j = 25\text{ °C}$			330	mA
$dv/dt_{cr}$	$T_j = 130\text{ °C}$			1000	V/μs
$di/dt_{cr}$	$T_j = 130\text{ °C}$			50	A/μs
$R_{th(j-s)}$	per Thyristor		1.7		K/W

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
<b>Module</b>					
$M_s$	to heatsink	2.25		2.5	Nm
w	weight		30		g

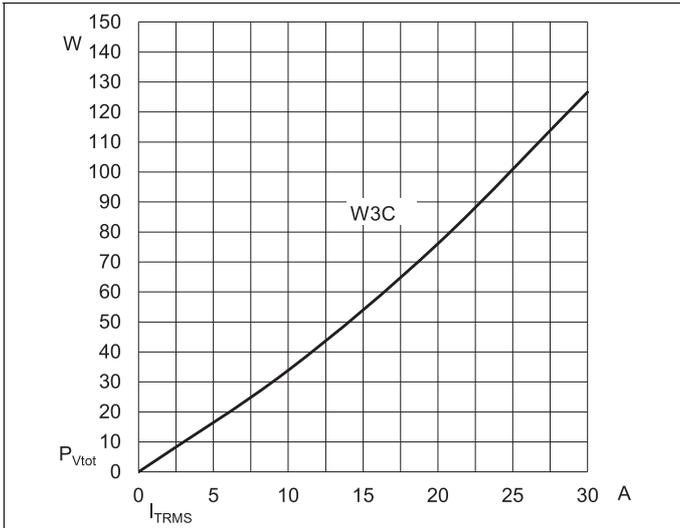


Fig. 1: Power dissipation per module vs. rms current

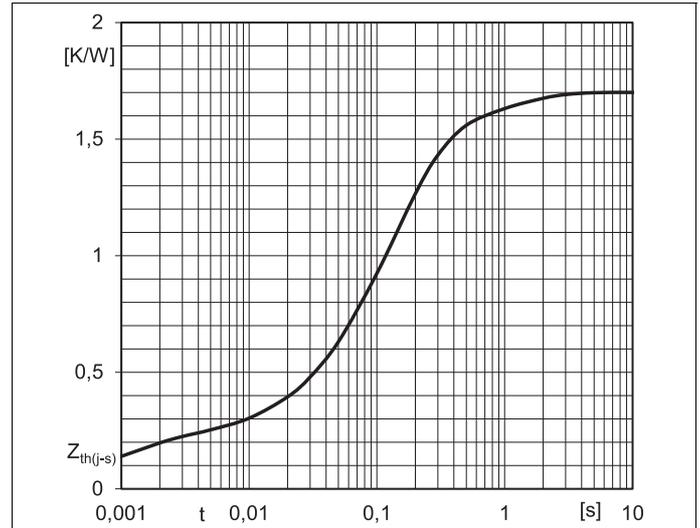


Fig. 2: Transient thermal impedance vs. time

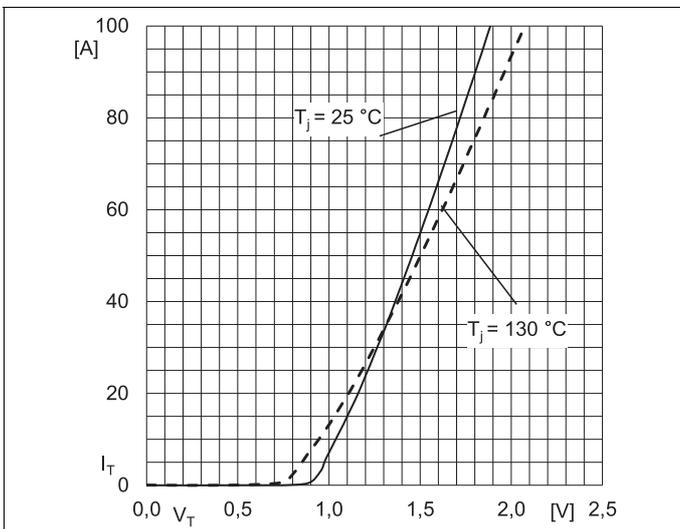


Fig. 3: Typ. forward characteristic of single thyristor

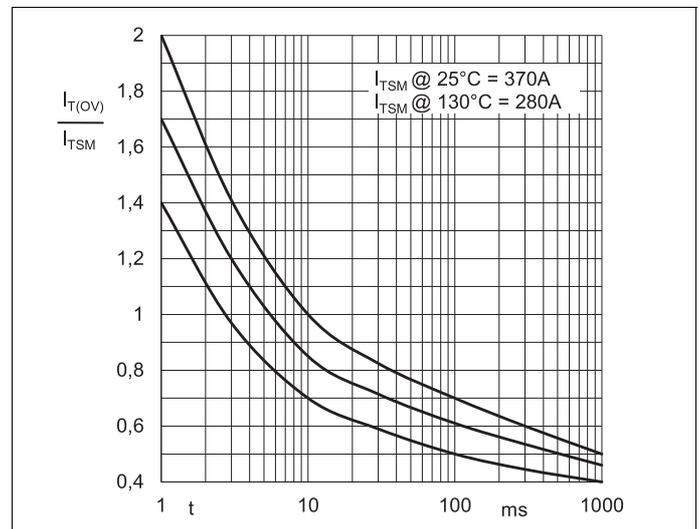


Fig. 4 : Surge overload current vs. time

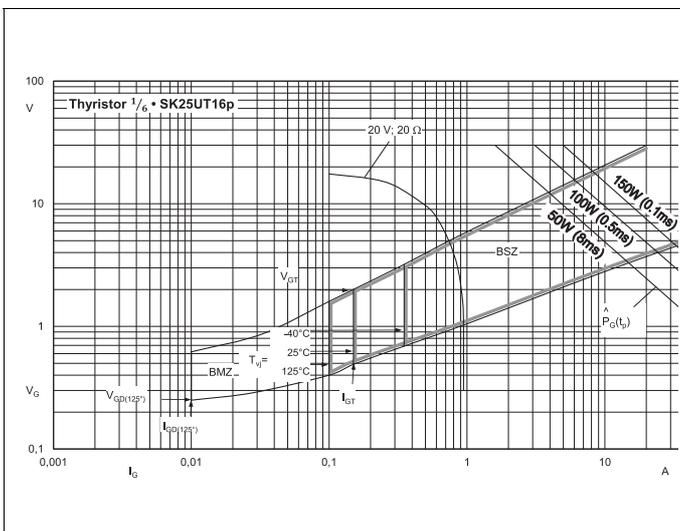
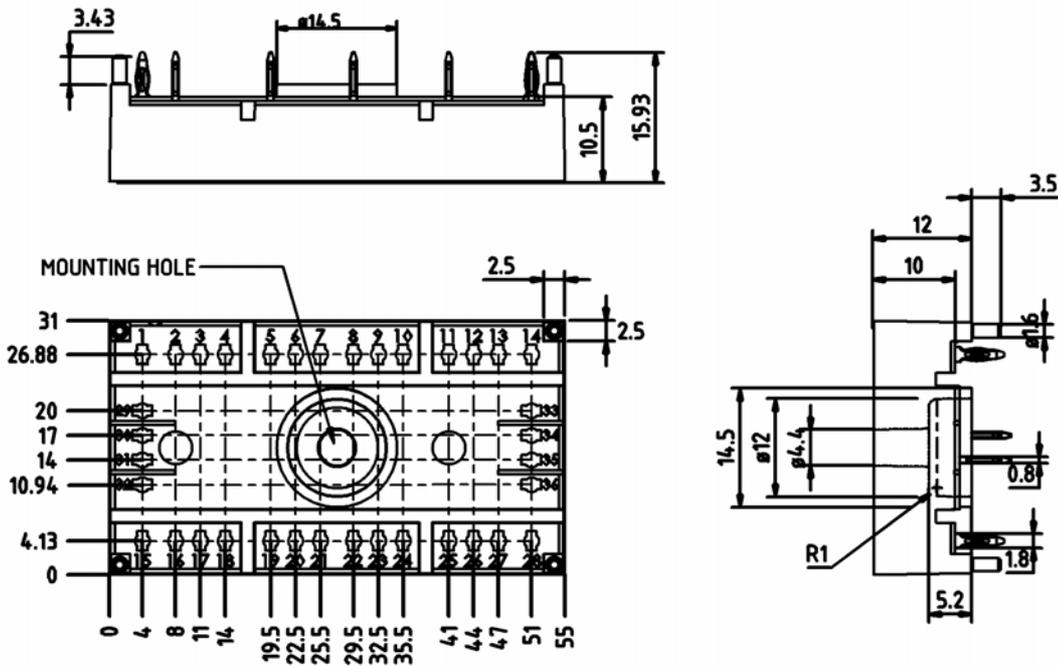


Fig. 5: Gate trigger characteristic

# SK25UT16p

dimensions in mm  
tolerance system: ISO 2768-m



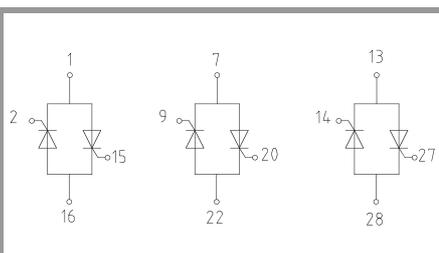
Suggested drilled hole diameter for terminal pins in the circuit board:

- minimum: 1,575mm
- typical: 1,6mm
- maximum: 1,625mm

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

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## SEMITOP 3 Press-Fit



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

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