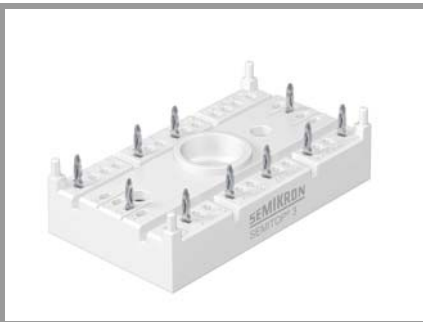


# SK 25 UT 16p



## SEMITOP® 3 Press-Fit

### Antiparallel Thyristor Module

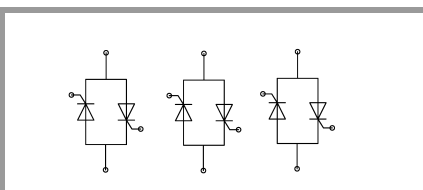
#### SK 25 UT 16p

##### Features\*

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

##### Typical Applications

- Soft starter
- Light control (studios, theater)
- Temperature control



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Absolute Maximum Ratings				
Symbol	Conditions		Values	Unit
<b>Thyristor 1</b>				
$I_{T(AV)}$	sin 180°	$T_s = 25\text{ °C}$	31	A
		$T_s = 70\text{ °C}$	22	A
$I_{TSM}$	10 ms	$T_j = 25\text{ °C}$	370	A
		$T_j = 130\text{ °C}$	280	A
$i^2t$	10 ms	$T_j = 25\text{ °C}$	685	A <sup>2</sup> s
		$T_j = 130\text{ °C}$	392	A <sup>2</sup> s
$V_{RRM}$			1600	V
$V_{DRM}$			1600	V
$(di/dt)_{cr}$	$T_j = 130\text{ °C}$		50	A/μs
$(dv/dt)_{cr}$	$T_j = 130\text{ °C}$		1000	V/μs
$T_j$			-40 ... 125	°C

Absolute Maximum Ratings			
Symbol	Conditions	Values	Unit
<b>Module</b>			
$I_{t(RMS)}$	$\Delta T_{\text{terminal}}$ at PCB joint = 30 K, per pin	35	A
$T_{stg}$	module without TIM	-40 ... 125	°C
$V_{isol}$	AC, sinusoidal, t = 1 min	2500	V

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
<b>Thyristor 1</b>					
$V_T$	$T_j = 25\text{ °C}$ , $I_T = 25\text{ A}$			1.26	V
$V_{T(TO)}$	$T_j = 130\text{ °C}$			0.85	V
$r_T$	$T_j = 130\text{ °C}$			13.90	mΩ
$I_{DD}; I_{RD}$	$T_j = 130\text{ °C}$ , $V_{DD} = V_{DRM}$ ; $V_{RD} = V_{RRM}$			6	mA
$t_{gd}$	$T_j = 25\text{ °C}$ , $I_G = 1\text{ A}$ , $di_G/dt = 1\text{ A}/\mu\text{s}$		1		μs
$t_{gr}$	$V_D = 0.67 * V_{DRM}$		2		μs
$t_q$	$T_j = 130\text{ °C}$		150		μs
$I_H$	$T_j = 25\text{ °C}$	220			mA
$I_L$	$T_j = 25\text{ °C}$ , $R_G = 33\text{ }\Omega$	550			mA
$V_{GT}$	$T_j = 25\text{ °C}$ , d.c.	2			V
$I_{GT}$	$T_j = 25\text{ °C}$ , d.c.	100			mA
$V_{GD}$	$T_j = 130\text{ °C}$ , d.c.			0.25	V
$I_{GD}$	$T_j = 130\text{ °C}$ , d.c.			6	mA
$R_{th(j-s)}$	per thyristor, $\lambda_{\text{paste}} = 0.8\text{ W}/(\text{mK})$ , sin. 180°		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

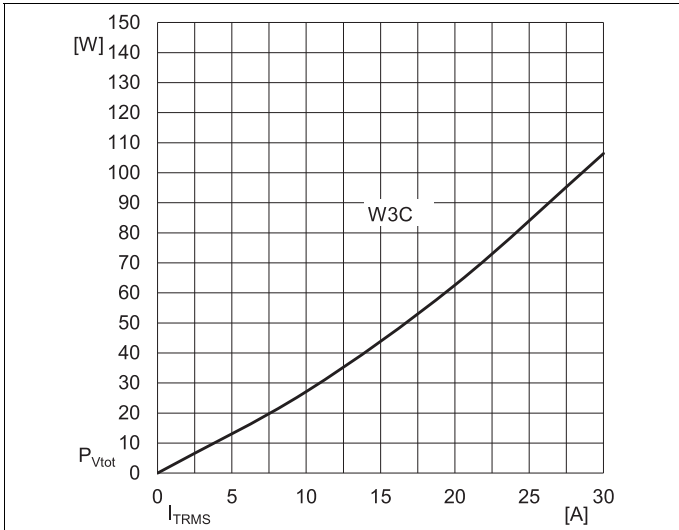


Fig. 1: Power dissipation per module vs. rms current

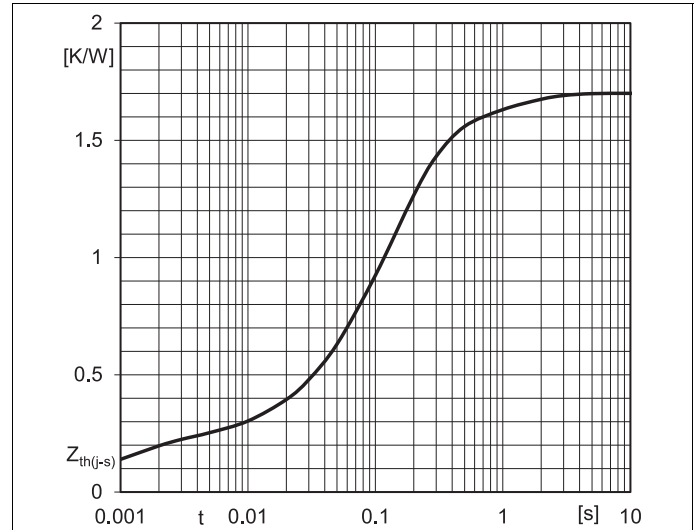


Fig. 2: Typ. transient thermal impedance

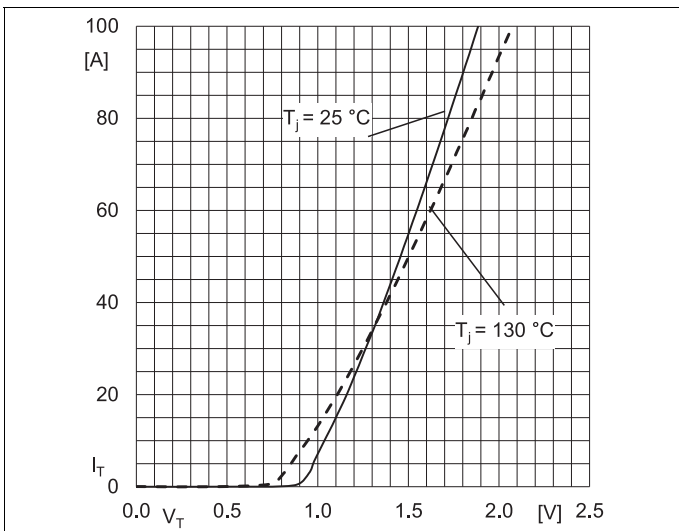


Fig. 3: Typ. forward characteristic of single thyristor

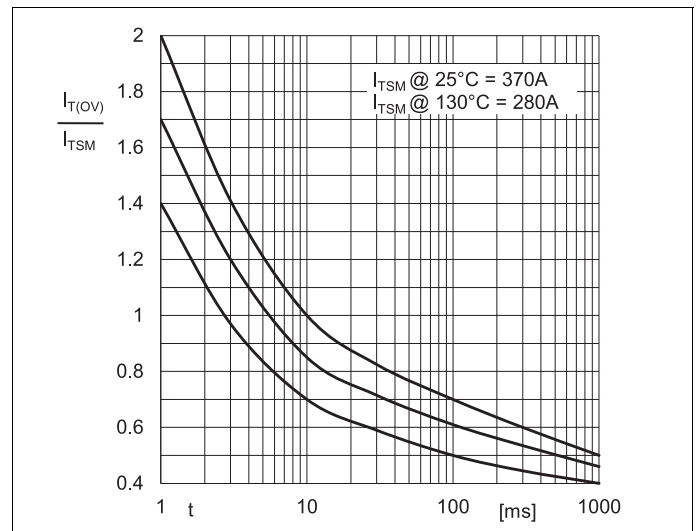


Fig. 4 : Surge overload current vs. time

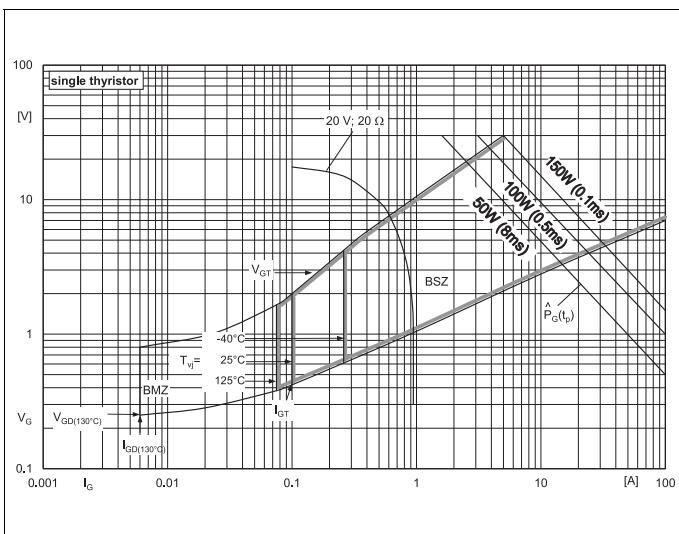
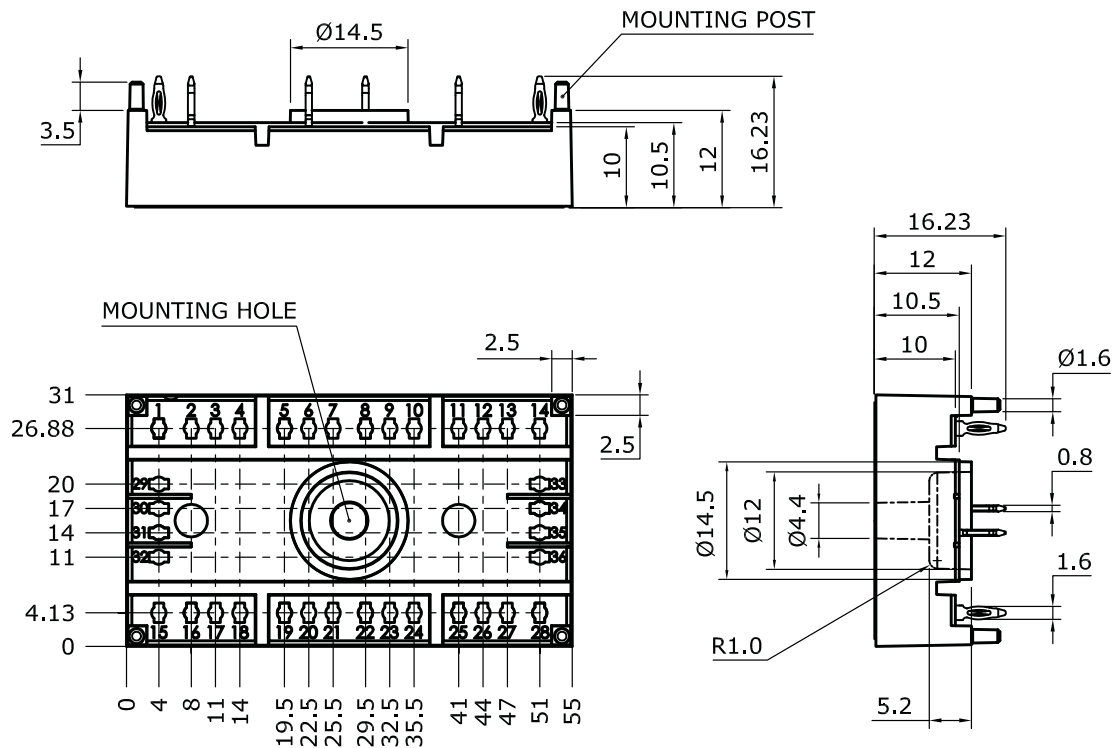


Fig. 5: Gate trigger characteristic

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Dimensions: mm

Tolerance system: ISO 2768-m



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

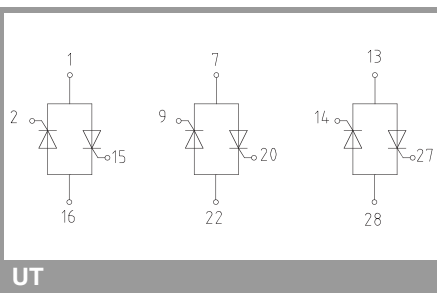
- minimum: 1.575 mm
- typical: 1.6 mm
- maximum: 1.625 mm

Suggested hole diameter for the mounting post in the circuit board:

- 2 mm

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SEMITOP 3 Press-Fit



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This is an electrostatic discharge sensitive device (ESDS) due to international standard IEC 61340.

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