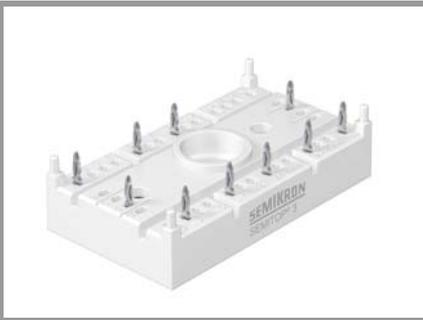


SK 25 UT 16p



SEMITOP® 3 Press-Fit

Antiparallel Thyristor Module

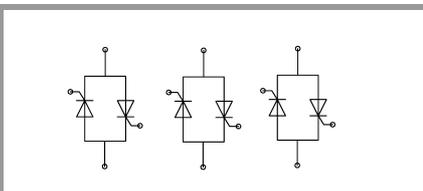
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Features*

- 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
Thyristor 1				
$I_{T(AV)}$	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 ² s
		$T_j = 130\text{ °C}$	392	A ² 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
Module			
$I_{t(RMS)}$	$\Delta T_{terminal}$ 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
Thyristor 1					
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, $\lambda_{paste} = 0.8\text{ W}/(\text{mK})$, sin. 180°		1.7		K/W

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
Module					
M_s	to heatsink	2.25		2.5	Nm
w	weight		30		g

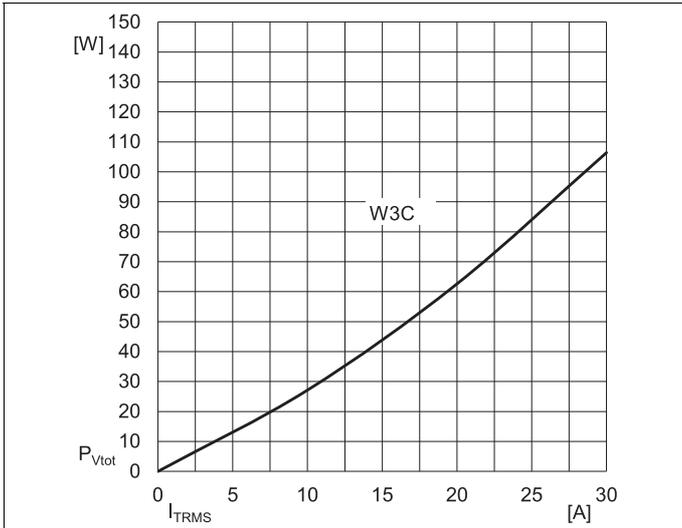


Fig. 1: Power dissipation per module vs. rms current

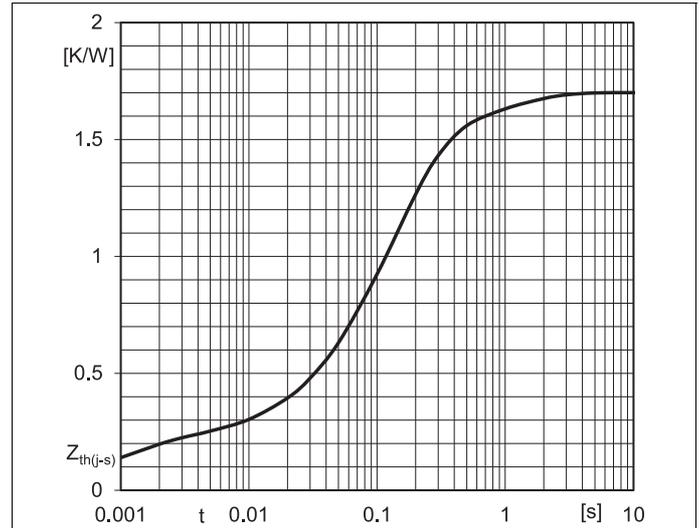


Fig. 2: Typ. transient thermal impedance

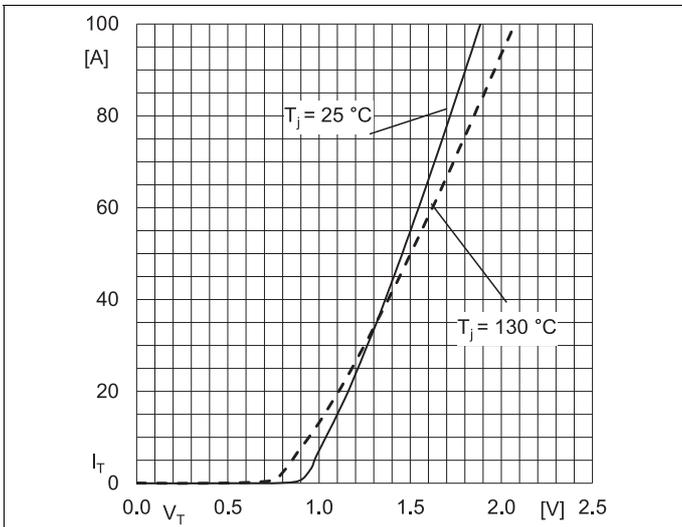


Fig. 3: Typ. forward characteristic of single thyristor

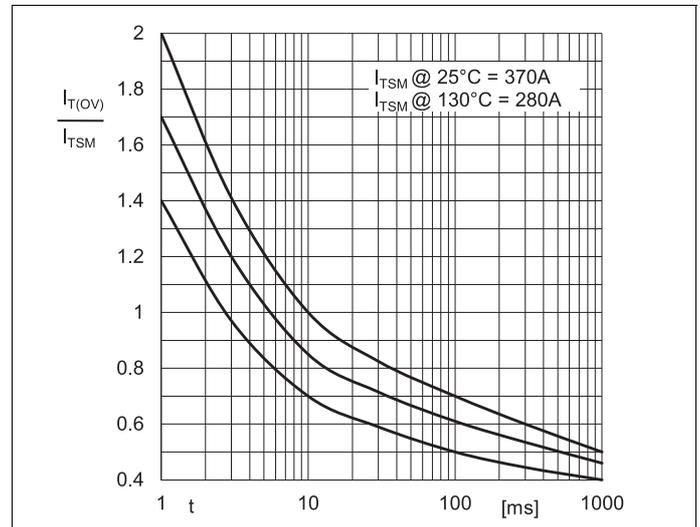


Fig. 4 : Surge overload current vs. time

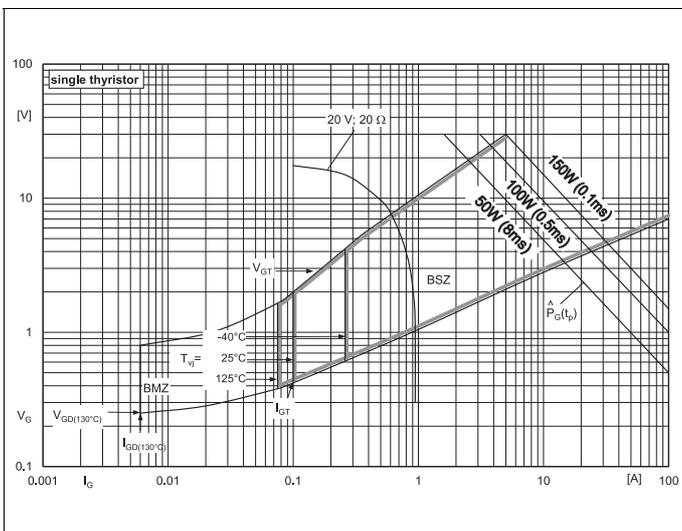
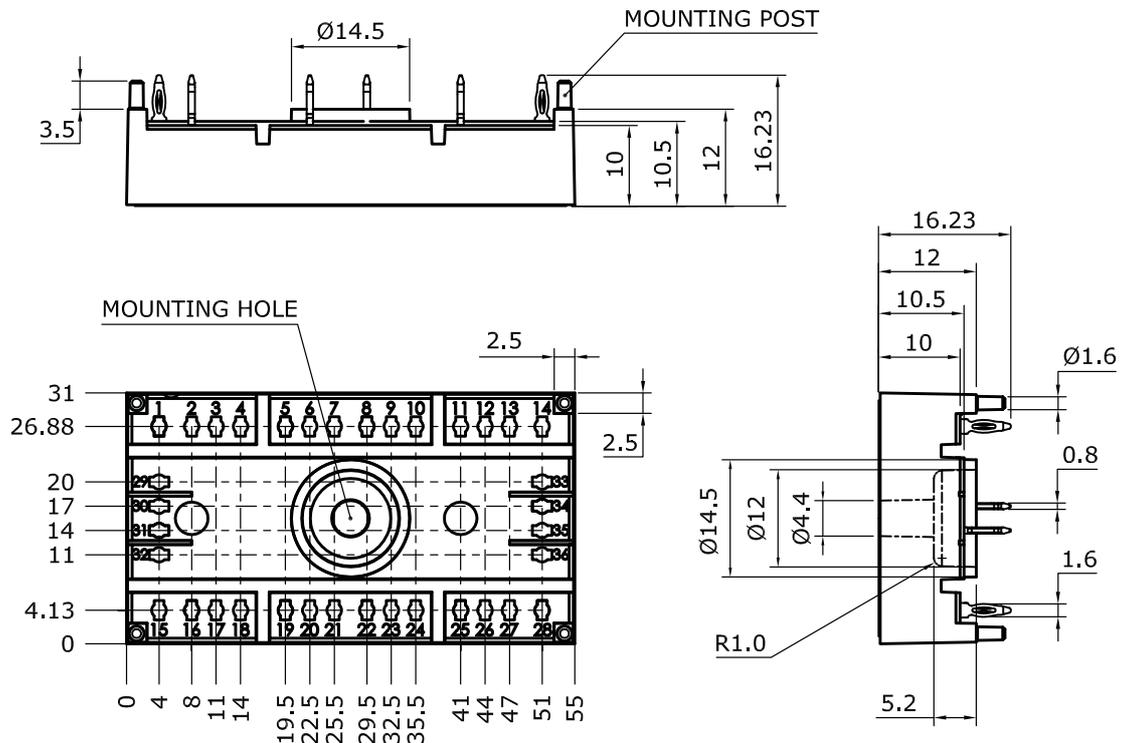


Fig. 5: Gate trigger characteristic

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Dimensions: mm

Tolerance system: ISO 2768-m



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

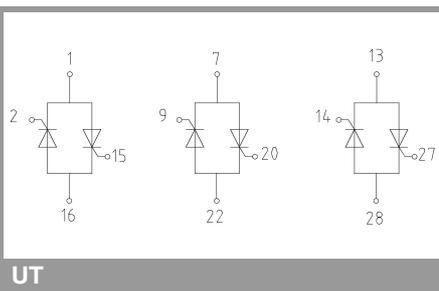
- minimum: 1.575 mm
- typical: 1.6 mm
- maximum: 1.625 mm

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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