



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

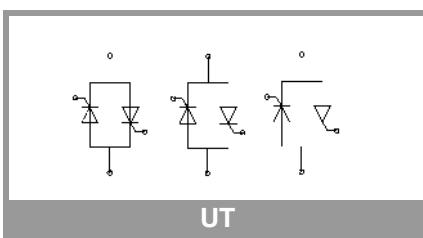
- Soft starter
- Light control (studios, theater)
- Temperature control

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

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

Characteristics		min.	typ.	max.	Unit
Symbol	Conditions				
Thyristor 1					
V_T	$T_j = 25^\circ\text{C}, I_T = 25\text{ A}$			1.26	V
$V_{T(TO)}$	$T_j = 130^\circ\text{C}$			0.85	V
r_T	$T_j = 130^\circ\text{C}$			13.90	$\text{m}\Omega$
$I_{DD}:I_{RD}$	$T_j = 130^\circ\text{C}, V_{DD} = V_{DRM}, V_{RD} = V_{RRM}$			6	mA
t_{gd}	$T_j = 25^\circ\text{C}, I_G = 1\text{ A}, di_G/dt = 1\text{ A}/\mu\text{s}$			1	μs
t_{gr}	$V_D = 0.67 * V_{DRM}$			2	μs
t_q	$T_j = 130^\circ\text{C}$			150	μs
I_H	$T_j = 25^\circ\text{C}$			220	mA
I_L	$T_j = 25^\circ\text{C}, R_G = 33\text{ }\Omega$			550	mA
V_{GT}	$T_j = 25^\circ\text{C, d.c.}$			2	V
I_{GT}	$T_j = 25^\circ\text{C, d.c.}$			100	mA
V_{GD}	$T_j = 130^\circ\text{C, d.c.}$			0.25	V
I_{GD}	$T_j = 130^\circ\text{C, d.c.}$			6	mA
$R_{th(j-s)}$	per thyristor, $\lambda_{\text{paste}}=0.8\text{ W}/(\text{mK})$, sin. 180°			1.7	K/W

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



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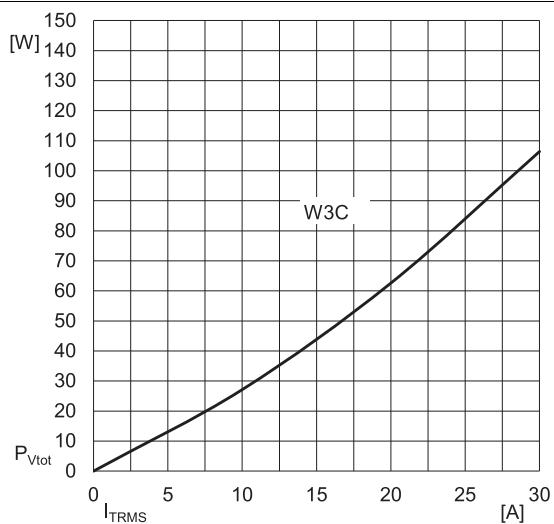


Fig. 1: Power dissipation per module vs. rms current

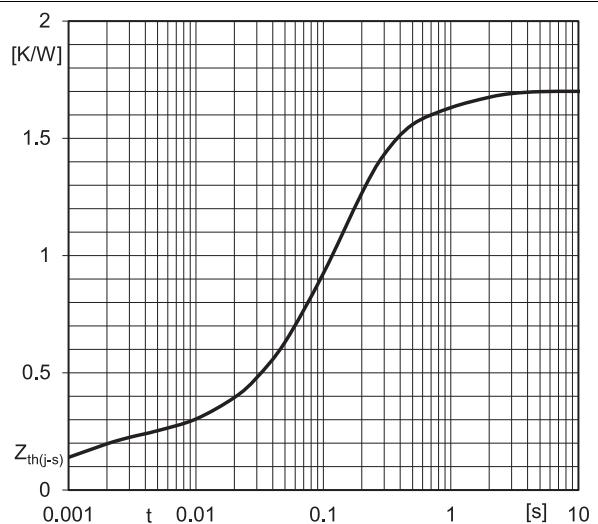


Fig. 2: Typ. transient thermal impedance

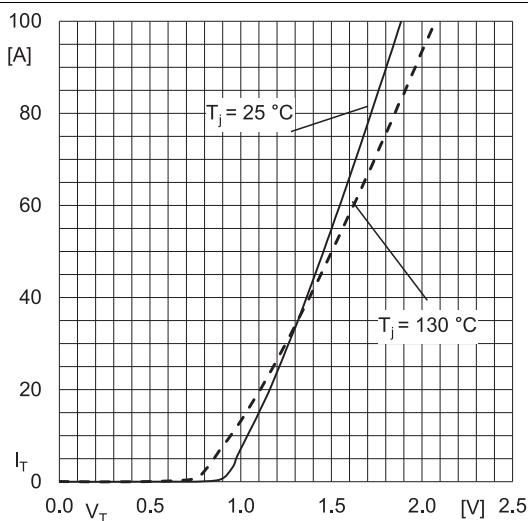


Fig. 3: Typ. forward characteristic of single thyristor

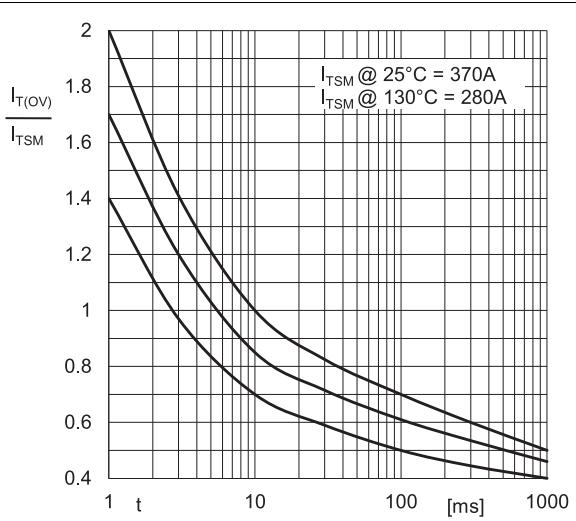


Fig. 4 : Surge overload current vs. time

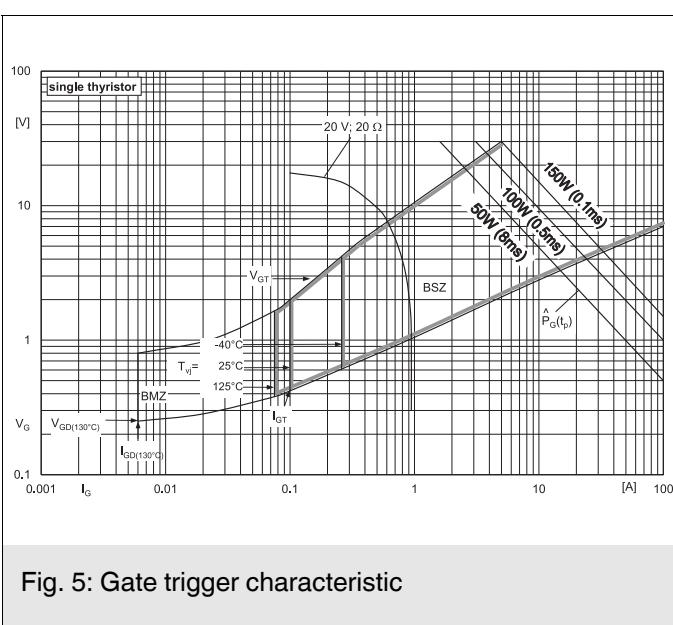
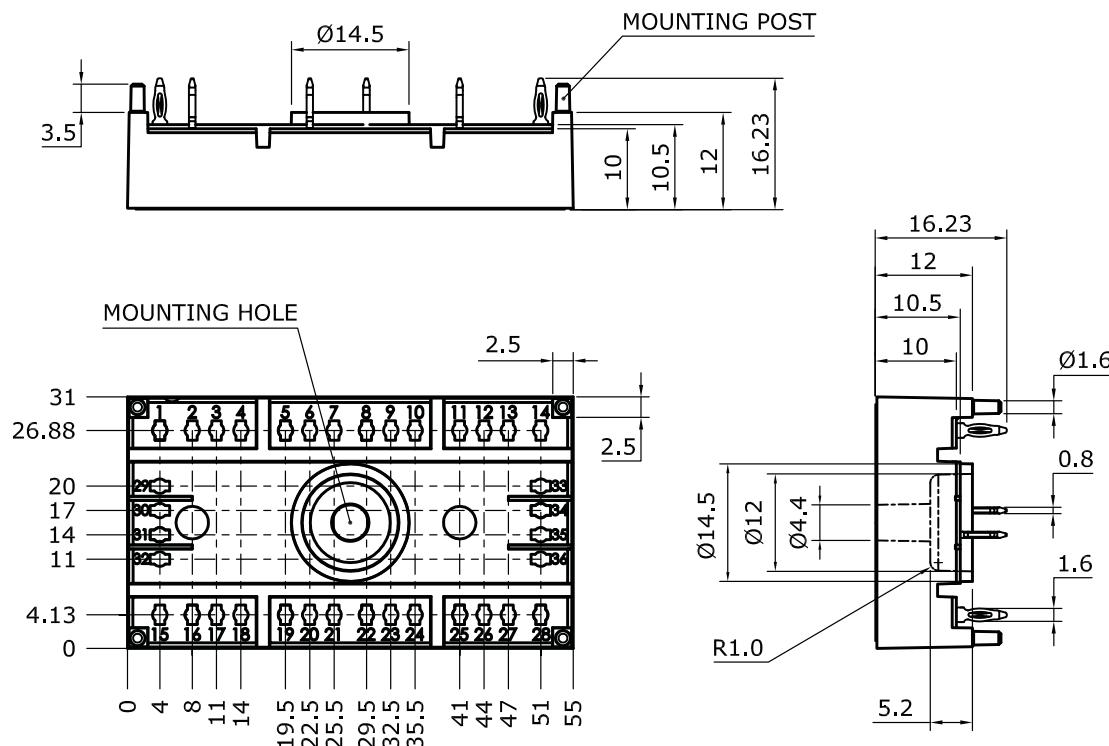


Fig. 5: Gate trigger characteristic

Dimensions: mm

Tolerance system: ISO 2768-m



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

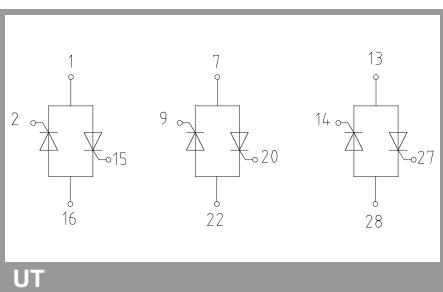
- minimum: 1.575 mm
- typical: 1.6 mm
- maximum: 1.625 mm

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

- 2 mm

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

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