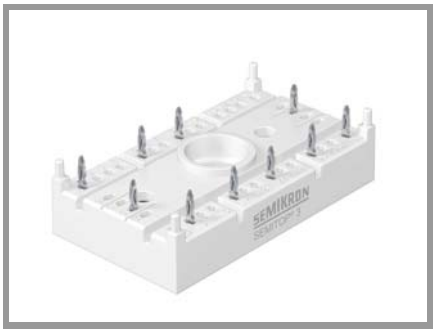
SK 25 UT 16p



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 passived thyristor chip
- Up to 1600V reverse voltage
- UL recognized file no. E 63 532

Typical Applications

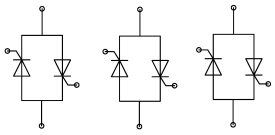
- Soft starter
- Light control (studios, theater)
- Temperature control

Absolute Maximum Ratings				
Symbol	**Conditions**		**Values**	**Unit**
Thyristor 1				
$I_{T(AV)}$	sin 180°	T_s = 25 °C	31	A
		T_s = 70 °C	22	A
I_{TSM}	10 ms	T_j = 25 °C	370	A
		T_j = 130 °C	280	A
i^2t	10 ms	T_j = 25 °C	685	A^2s
		T_j = 130 °C	392	A^2s
V_{RRM}			1600	V
V_{DRM}			1600	V
$(di/dt)_{cr}$	T_j = 130 °C		50	A/µs
$(dv/dt)_{cr}$	T_j = 130 °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 °C, I_T = 25 A			1.26	V
$V_{T(TO)}$	T_j = 130 °C			0.85	V
r_T	T_j = 130 °C			13.90	mΩ
I_{DD};I_{RD}	T_j = 130 °C, V_{DD} = V_{DRM}; V_{RD} = V_{RRM}			6	mA
t_{gd}	T_j = 25 °C, I_G = 1 A, di_G/dt = 1 A/µs		1		µs
t_{gr}	V_D = 0.67 * V_{DRM}		2		µs
t_q	T_j = 130 °C		150		µs
I_H	T_j = 25 °C	220			mA
I_L	T_j = 25 °C, R_G = 33 Ω	550			mA
V_{GT}	T_j = 25 °C, d.c.	2			V
I_{GT}	T_j = 25 °C, d.c.	100			mA
V_{GD}	T_j = 130 °C, d.c.			0.25	V
I_{GD}	T_j = 130 °C, d.c.			6	mA
$R_{th(j-s)}$	per thyristor, λ_{paste}=0.8 W/(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



UT

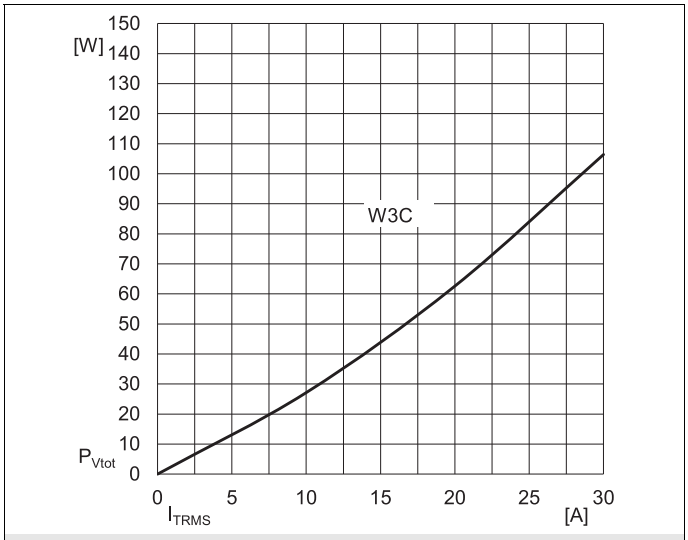


Fig. 1: Power dissipation per module vs. rms current

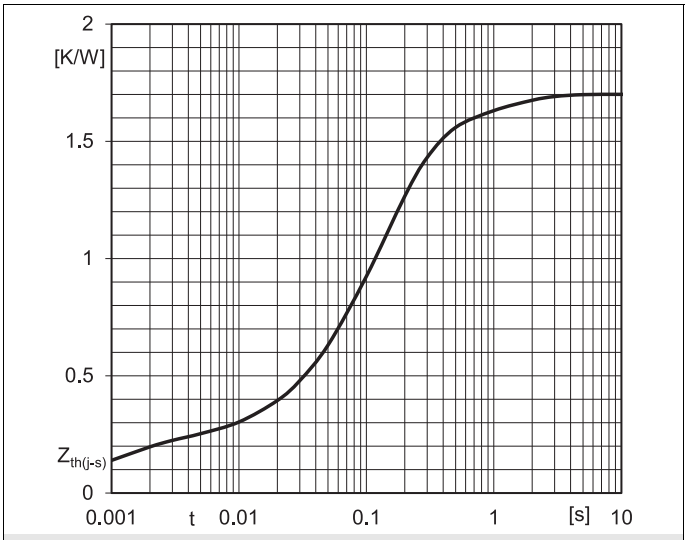


Fig. 2: Typ. transient thermal impedance

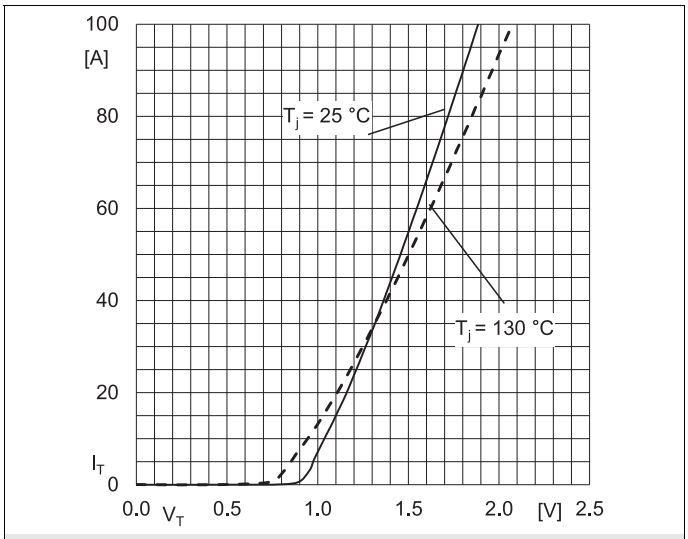


Fig. 3: Typ. forward characteristic of single thyristor

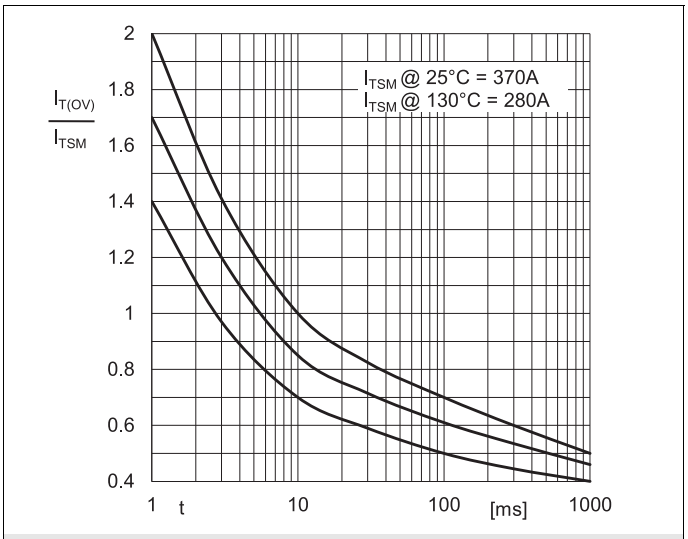


Fig. 4 : Surge overload current vs. time

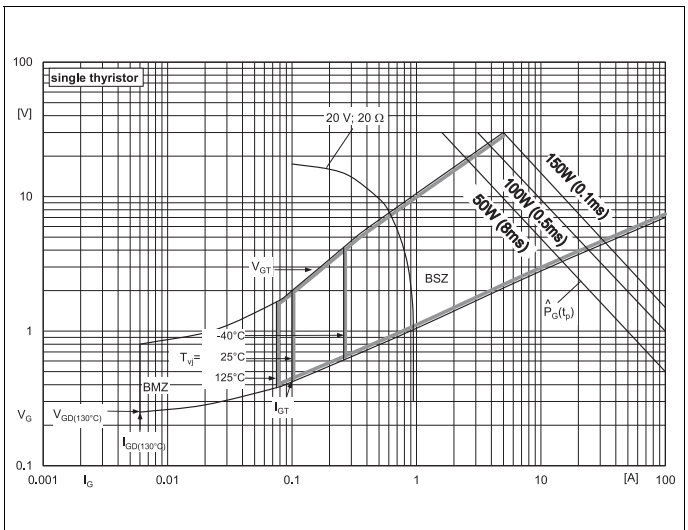
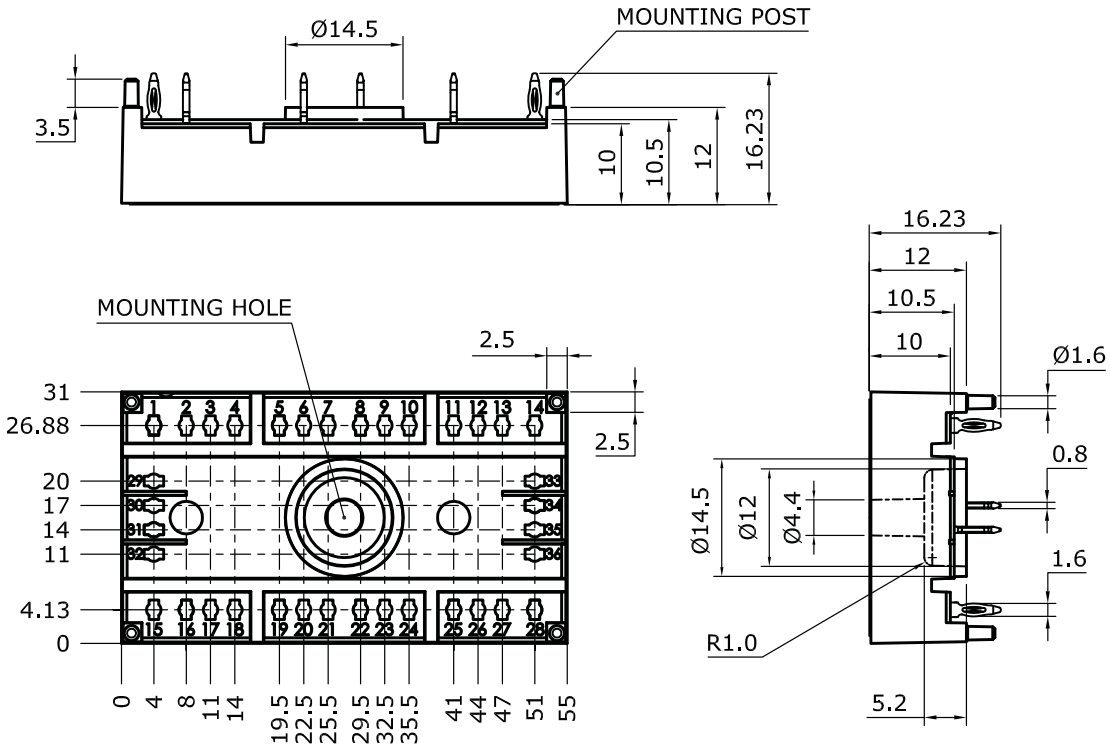


Fig. 5: Gate trigger characteristic

Dimensions: mm
Tolerance system: ISO 2768-m



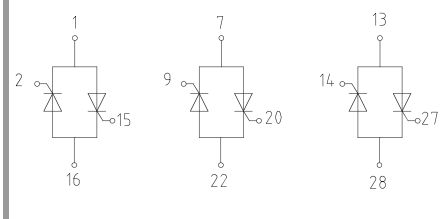
Suggested drilled hole diameter for terminal pins in the circuit board:

- 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

SEMITOP 3 Press-Fit



UT

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

***IMPORTANT INFORMATION AND WARNINGS**

The specifications of SEMIKRON products may not be considered as guarantee or assurance of product characteristics ("Beschaffenheitsgarantie"). The specifications of SEMIKRON products describe only the usual characteristics of products to be expected in typical applications, which may still vary depending on the specific application. Therefore, products must be tested for the respective application in advance. Application adjustments may be necessary. The user of SEMIKRON products is responsible for the safety of their applications embedding SEMIKRON products and must take adequate safety measures to prevent the applications from causing a physical injury, fire or other problem if any of SEMIKRON products become faulty. The user is responsible to make sure that the application design is compliant with all applicable laws, regulations, norms and standards. Except as otherwise explicitly approved by SEMIKRON in a written document signed by authorized representatives of SEMIKRON, SEMIKRON products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury. No representation or warranty is given and no liability is assumed with respect to the accuracy, completeness and/or use of any information herein, including without limitation, warranties of non-infringement of intellectual property rights of any third party. SEMIKRON does not assume any liability arising out of the applications or use of any product; neither does it convey any license under its patent rights, copyrights, trade secrets or other intellectual property rights, nor the rights of others. SEMIKRON makes no representation or warranty of non-infringement or alleged non-infringement of intellectual property rights of any third party which may arise from applications. Due to technical requirements our products may contain dangerous substances. For information on the types in question please contact the nearest SEMIKRON sales office. This document supersedes and replaces all information previously supplied and may be superseded by updates. SEMIKRON reserves the right to make changes.

