

SEMITOP® 3

## Six Separated Thyristors Module

### SK 45 STA

Preliminary Data

### Features

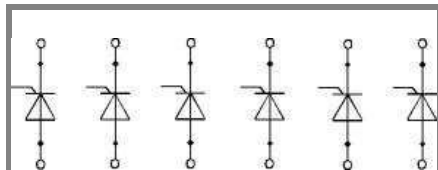
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Glass passivated thyristor chips
- Up to 1600 V reverse voltage

### Typical Applications\*

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

$V_{RSM}$ V	$V_{RRM}, V_{DRM}$ V	$I_{TRMS} = 41$ A ( $T_s = 75$ °C)
900	800	SK 45 STA 08
1300	1200	SK 45 STA 12
1700	1600	SK 45 STA 16

Characteristics		$T_h = 25$ °C, unless otherwise specified	
Symbol	Conditions	Values	Units
$I_{rms}$ (W1C)	sin. 180°; $T_s = 100$ °C	33	A
$I_{rms}$ (W1C)	sin. 180°; $T_s = 85$ °C	47	A
			A
$I_{TSM}/I_{FSM}$	$T_{vj} = 25$ (125) °C; 10 ms	450 (380)	A
$I^2t$	$T_{vj} = 25$ (125) °C; 8,3 ... 10 ms ms	1000 (720)	A²s
$T_{stg}$		- 40 ... + 125	°C
$T_{solder}$	terminals, 10 s	260	°C
Thyristor			
$(dv/dt)_{cr}$	$T_{vj} = 125$ °C	1000	V/μs
$(di/dt)_{cr}$	$T_{vj} = 125$ °C; $f = 50 \dots 60$ Hz	50	A/μs
$t_q$	$T_{vj} = 125$ °C; typ.	80	μs
$I_H$	$T_{vj} = 25$ °C; typ. / max.	80 / 150	mA
$I_L$	$T_{vj} = 25$ °C; $R_G = 33$ Ω; typ. / max.	150 / 300	mA
$V_T$	$T_{vj} = 25$ °C; ( $I_T = 75$ A); max.	1,9	V
$V_{T(TO)}$	$T_{vj} = 125$ °C	max. 1	V
$r_T$	$T_{vj} = 125$ °C	max. 10	mΩ
$I_{DD}, I_{RD}$	$T_{vj} = 125$ °C; $V_{DD} = V_{DRM}, V_{RD} = V_{RRM}$	max. 10	mA
$R_{th(j-s)}$		1,2	K/W
$T_{vj}$		- 40 ... + 125	°C
$V_{GT}$	$T_{vj} = 25$ °C; d.c.	3	V
$I_{GT}$	$T_{vj} = 25$ °C; d.c.	100	mA
$V_{GD}$	$T_{vj} = 125$ °C; d.c.	0,25	V
$I_{GD}$	$T_{vj} = 125$ °C; d.c.	3	mA
Diode			
$V_F$	$T_{vj} =$ °C; ( $I_F =$ A); max.		V
$V_{(TO)}$	$T_{vj} =$ °C		V
$r_T$	$T_{vj} =$ °C		mΩ
$I_{RD}$	$T_{vj} =$ °C; $V_{RD} = V_{RRM}$		mA
$R_{th(j-s)}$			K/W
$T_{vj}$			°C
Mechanical data			
$V_{isol}$	a.c. 50 Hz; r.m.s.; 1 min / 1s	2500 (3000)	V
$M_1$	mounting torque	2,5	Nm
$w$		30	g
Case	SEMITOP® 3	T56	



STA

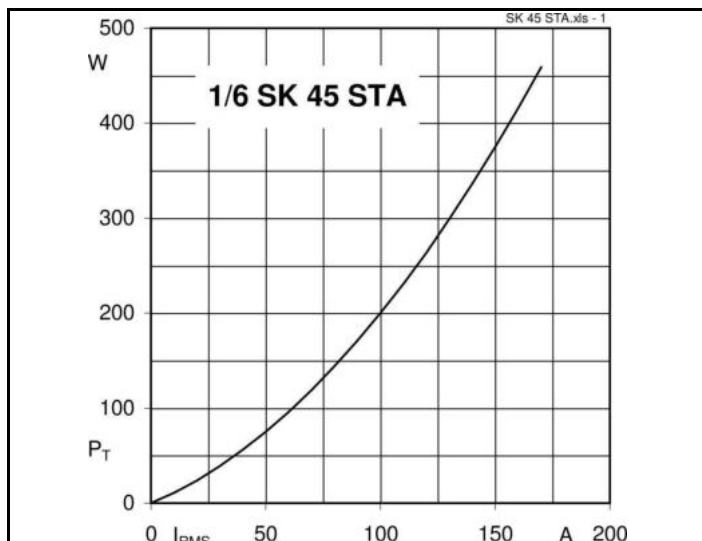


Fig. 1 Power dissipation per Thyristor vs. r.m.s. current

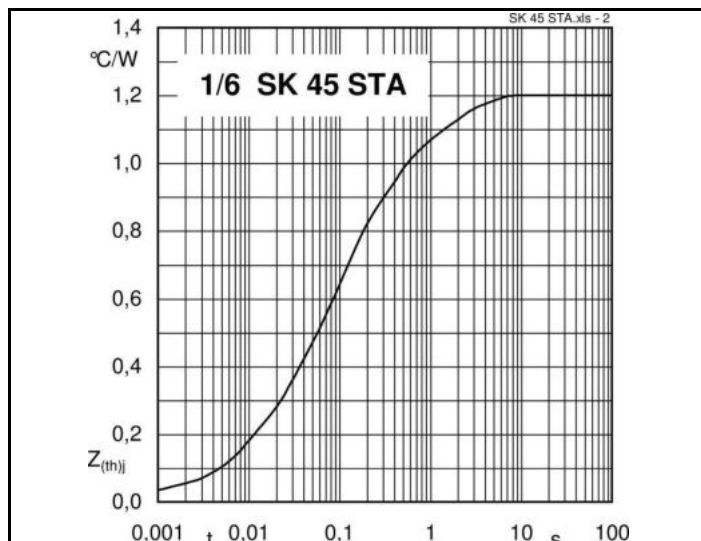


Fig. 2 Transient thermal impedance vs. time

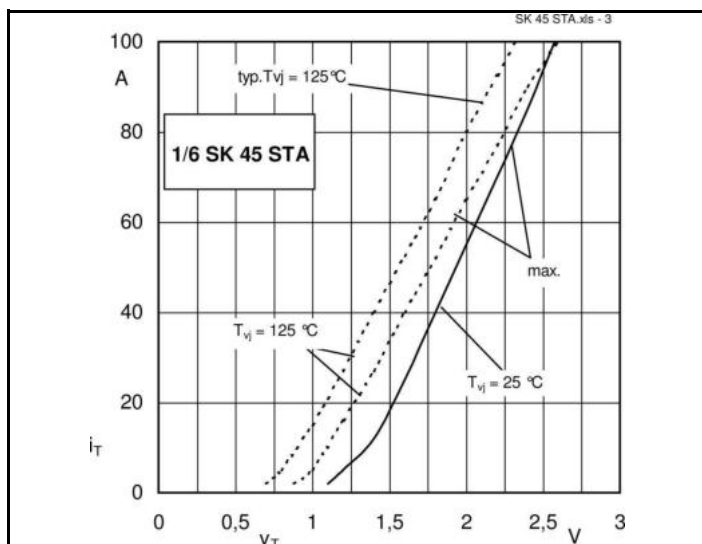


Fig. 3 On-state characteristics

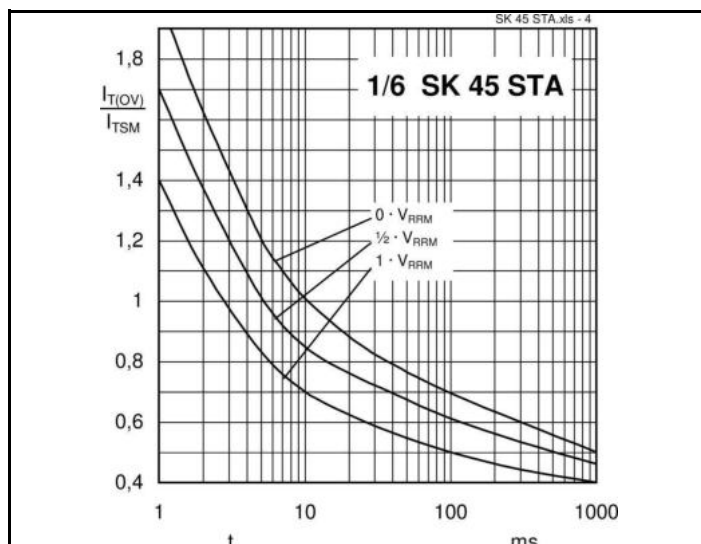


Fig. 4 Surge overload current vs. time

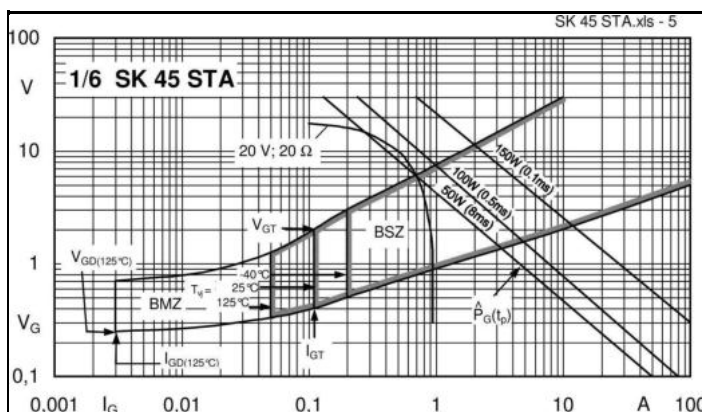
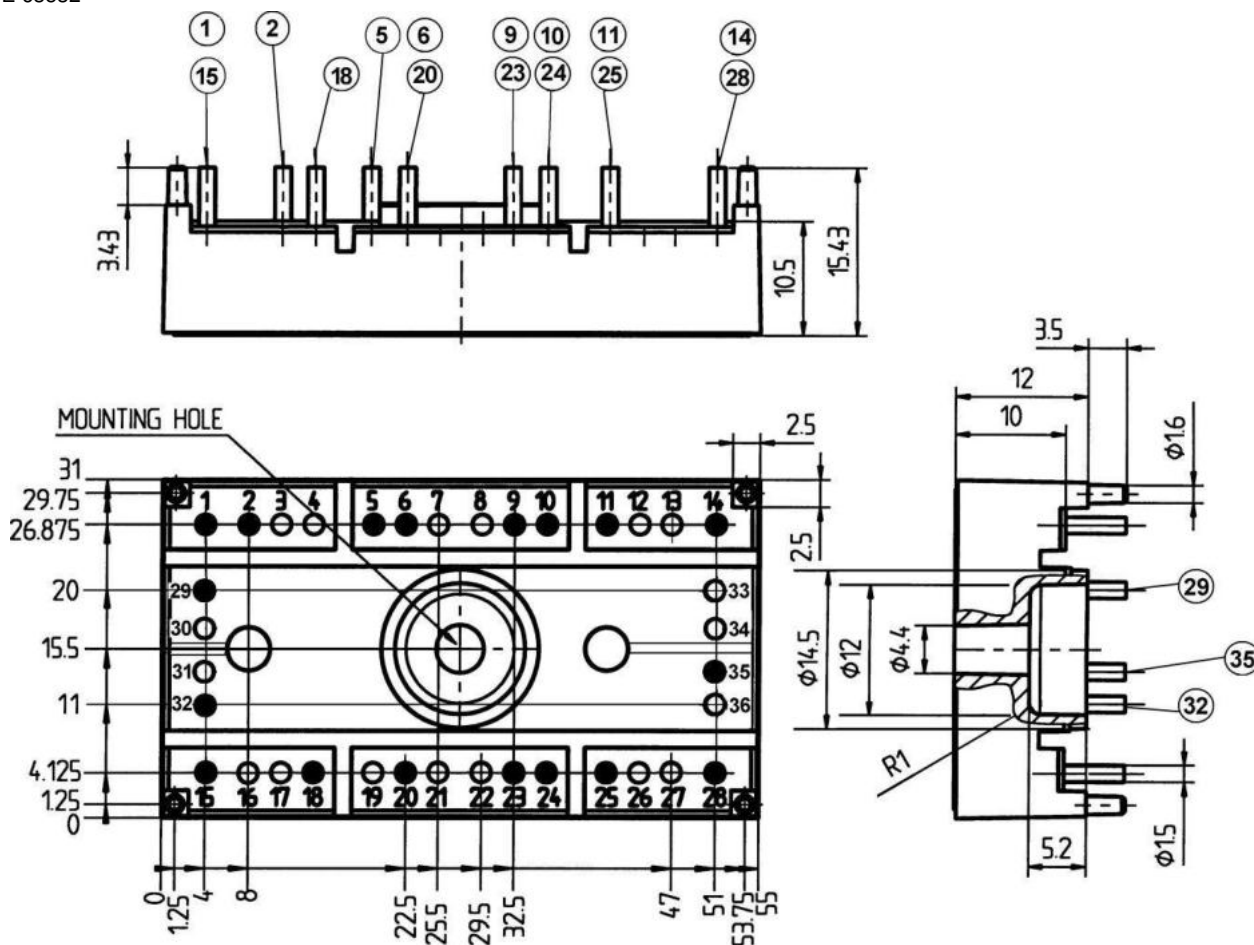


Fig. 5 Gate trigger characteristics

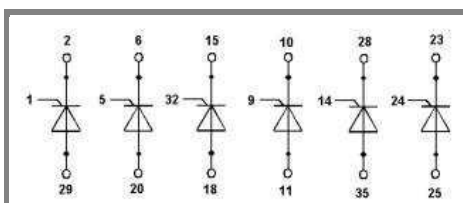
UL Recognized  
File no. E 63532

Dimensions in mm



SUGGESTED HOLEDIAMETER FOR THE SOLDER PINS AND THE MOUNTING PINS IN THE PCB: 2 mm

Case T56 (Suggested hole diameter in the PCB for solder pins and mounting pins: 2mm)



Case T56

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

\* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.