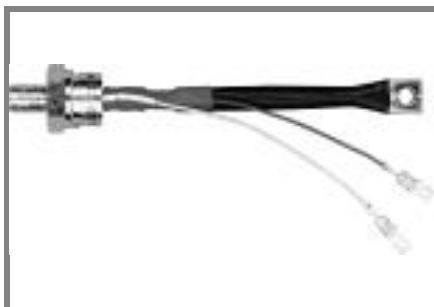


# SKT 300



**Stud Thyristor**

## Line Thyristor

### SKT 300

#### Features

- Hermetic metal case with glass insulator
- Threaded stud ISO M24x1,5 or UNF 3/4-16
- High  $i^2t$  and  $I_{TSM}$  values for easy fusing
- International standard case

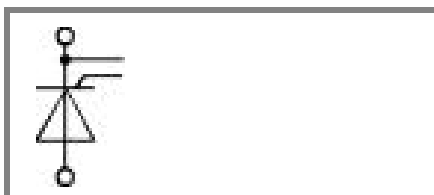
#### Typical Applications\*

- DC motor control (e. g. for machine tools)
- Controlled rectifiers (e. g. for battery charging)
- AC controllers (e. g. for temperature control)
- Recommended snubber network e. g. for  $V_{VRMS} \leq 400$  V:  
 $R = 33 \Omega / 32$  W,  $C = 0,47 \mu F$

1) available with UNF thread 3/4-16 UNF2A, e. g. SKT 300/08D UNF

$V_{RSM}$ V	$V_{RRM}, V_{DRM}$ V	$I_{TRMS} = 550$ A (maximum value for continuous operation) $I_{TAV} = 300$ A (sin. 180; $T_c = 93$ °C)	
500	400	SKT 300/04D	
900	800	SKT 300/08D <sup>1)</sup>	
1300	1200	SKT 300/12E <sup>1)</sup>	
1500	1400	SKT 300/14E <sup>1)</sup>	
1700	1600	SKT 300/16E <sup>1)</sup>	

Symbol	Conditions	Values	Units
$I_{TAV}$	sin. 180; $T_c = 100$ (85) °C;	257 (351)	A
$I_D$	K0,55; $T_a = 45$ °C; B2 / B6	250 / 360	A
	K0,55F; $T_a = 35$ °C; B2 / B5	570 / 800	A
$I_{RMS}$	K0,55; $T_a = 45$ °C; W1C	280	A
$I_{TSM}$	$T_{vj} = 25$ °C; 10 ms	11000	A
	$T_{vj} = 130$ °C; 10 ms	10000	A
$i^2t$	$T_{vj} = 25$ °C; 8,35 ... 10 ms	600000	A <sup>2</sup> s
	$T_{vj} = 130$ °C; 8,35 ... 10 ms	500000	A <sup>2</sup> s
$V_T$	$T_{vj} = 25$ °C; $I_T = 800$ A	max. 1,45	V
$V_{T(TO)}$	$T_{vj} = 130$ °C	max. 0,9	V
$r_T$	$T_{vj} = 130$ °C	max. 0,5	mΩ
$I_{DD}; I_{RD}$	$T_{vj} = 130$ °C; $V_{RD} = V_{RRM}; V_{DD} = V_{DRM}$	max. 50	mA
$t_{gd}$	$T_{vj} = 25$ °C; $I_G = 1$ A; $di_G/dt = 1$ A/μs	1	μs
$t_{gr}$	$V_D = 0,67 * V_{DRM}$	2	μs
$(di/dt)_{cr}$	$T_{vj} = 130$ °C	max. 100	A/μs
$(dv/dt)_{cr}$	$T_{vj} = 130$ °C; SKT ...D / SKT ...E	max. 500 / 1000	V/μs
$t_q$	$T_{vj} = 130$ °C,	50 ... 150	μs
$I_H$	$T_{vj} = 25$ °C; typ. / max.	150 / 250	mA
$I_L$	$T_{vj} = 25$ °C; $R_G = 33 \Omega$ ; typ. / max.	300 / 600	mA
$V_{GT}$	$T_{vj} = 25$ °C; d.c.	min. 3	V
$I_{GT}$	$T_{vj} = 25$ °C; d.c.	min. 200	mA
$V_{GD}$	$T_{vj} = 130$ °C; d.c.	max. 0,25	V
$I_{GD}$	$T_{vj} = 130$ °C; d.c.	max. 10	mA
$R_{th(j-c)}$	cont.	0,09	K/W
$R_{th(j-c)}$	sin. 180	0,096	K/W
$R_{th(j-c)}$	rec. 120	0,101	K/W
$R_{th(c-s)}$		0,015	K/W
$T_{vj}$		- 40 ... + 130	°C
$T_{stg}$		- 55 ... + 150	°C
$V_{isol}$		-	V~
$M_s$	to heatsink	60 (UNF: 30)	Nm
$a$		5 * 9,81	m/s <sup>2</sup>
$m$	approx.	490	g
Case		B 7	



**SKT**

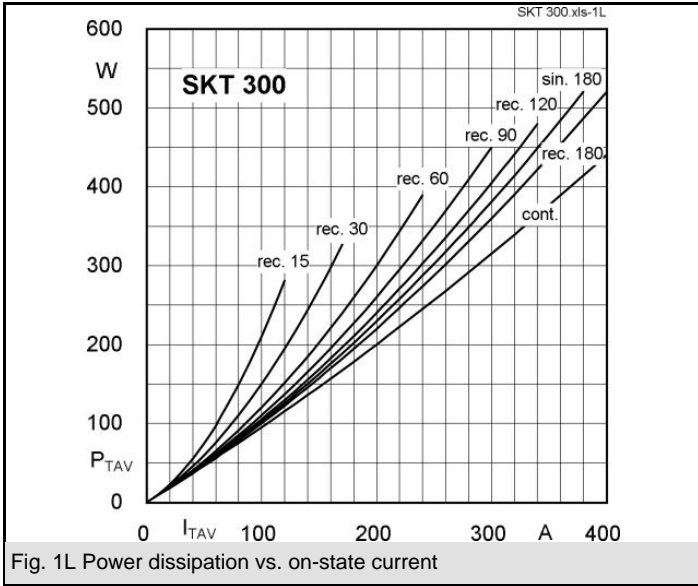


Fig. 1L Power dissipation vs. on-state current

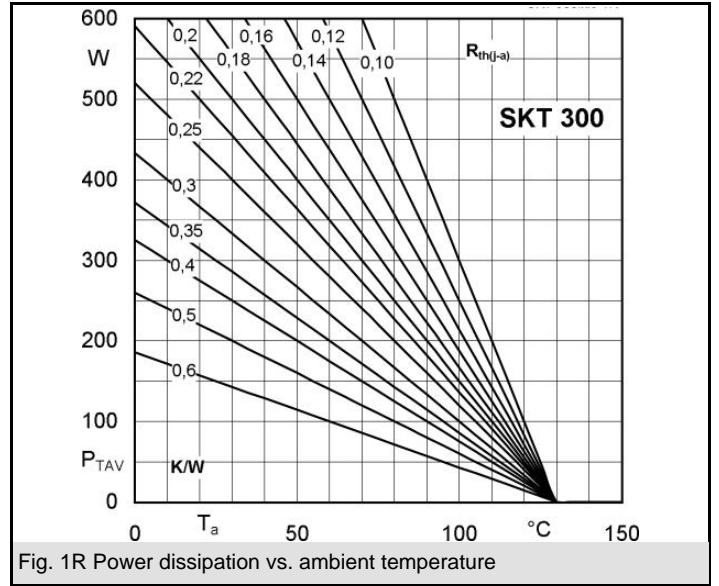


Fig. 1R Power dissipation vs. ambient temperature

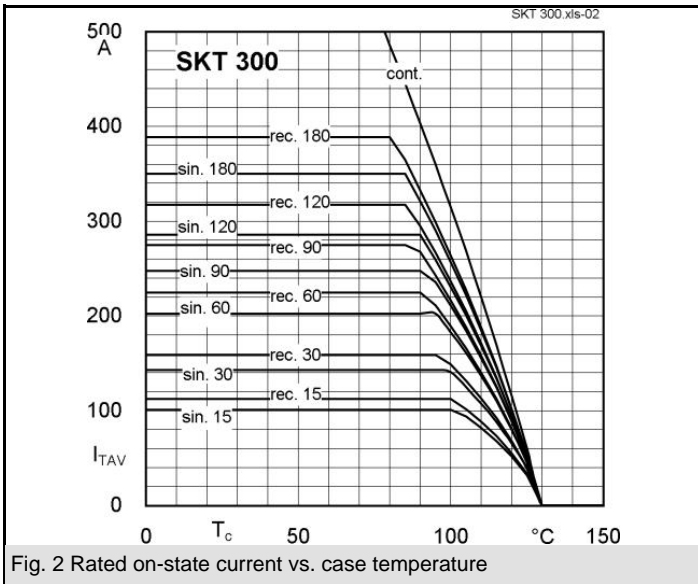


Fig. 2 Rated on-state current vs. case temperature

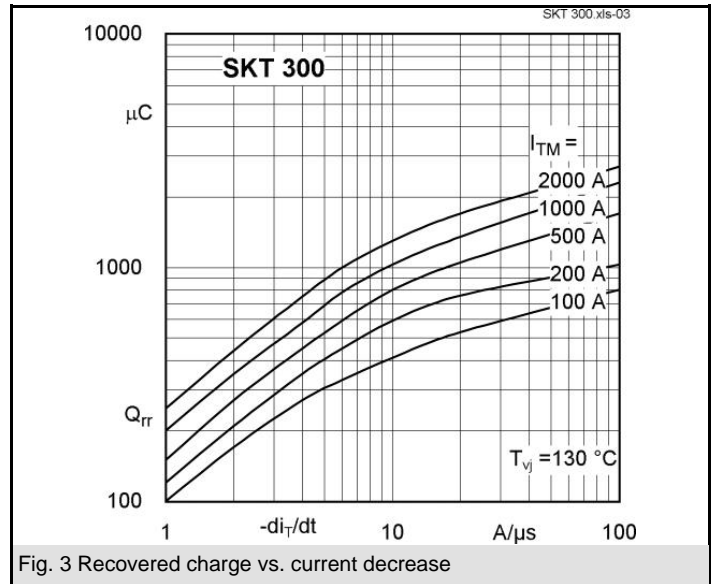


Fig. 3 Recovered charge vs. current decrease

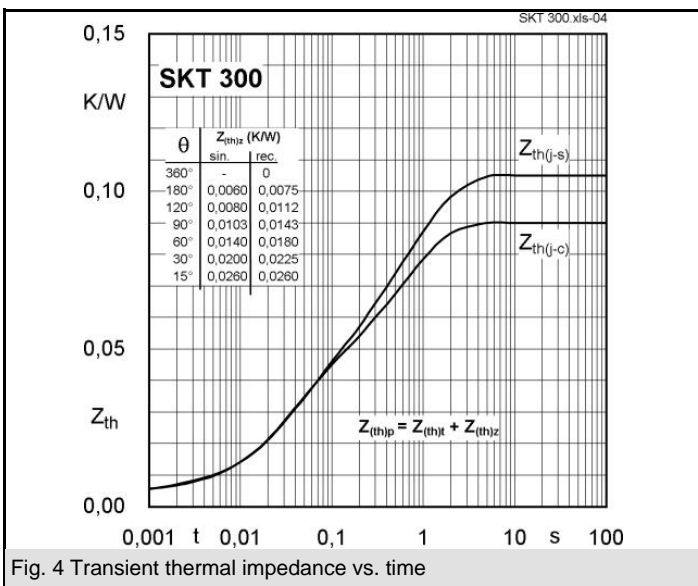


Fig. 4 Transient thermal impedance vs. time

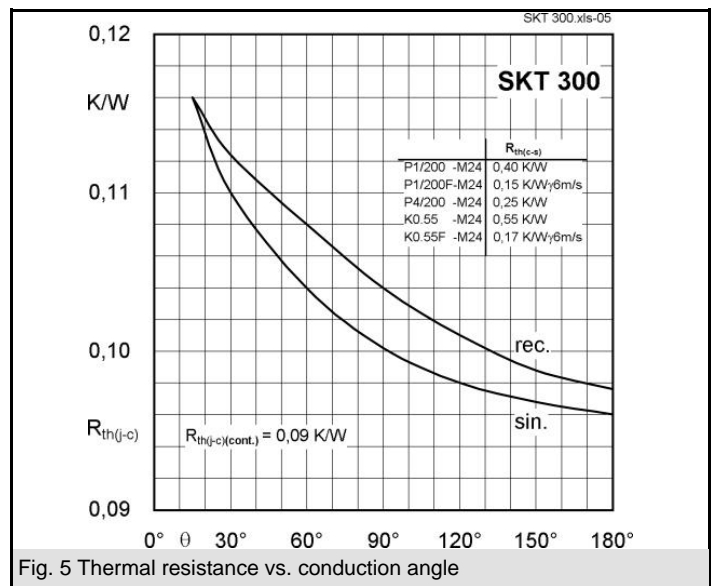
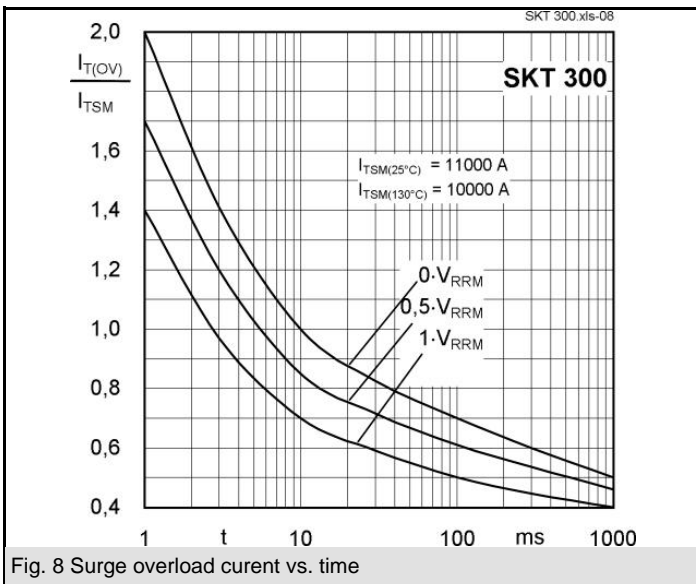
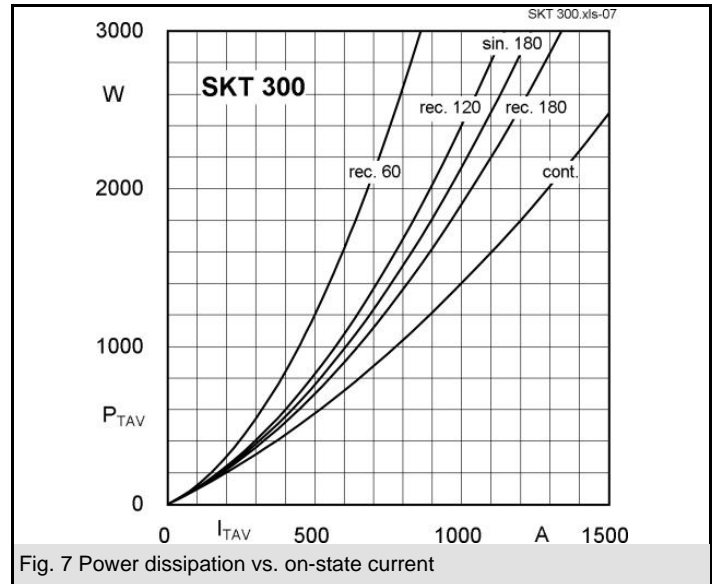
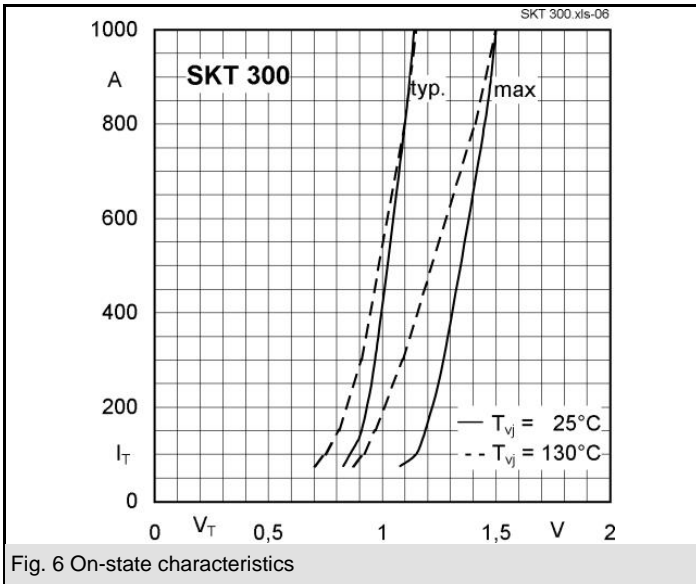
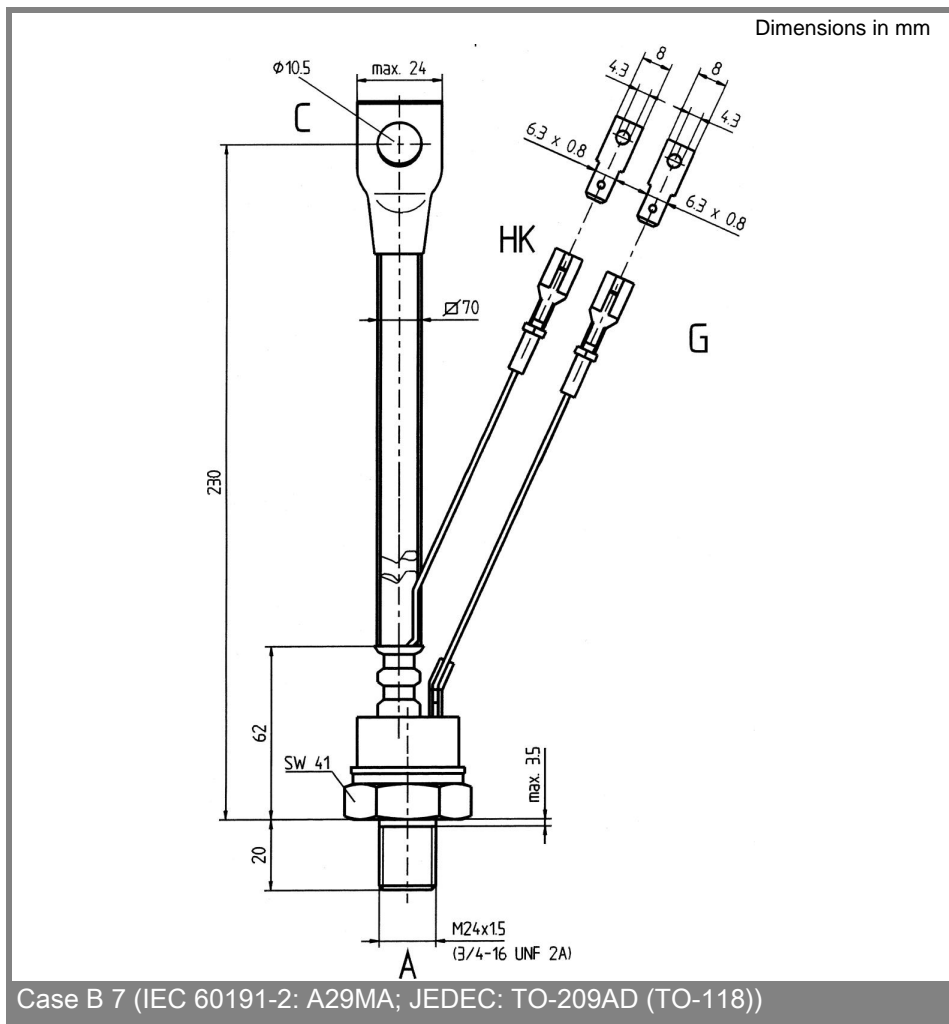
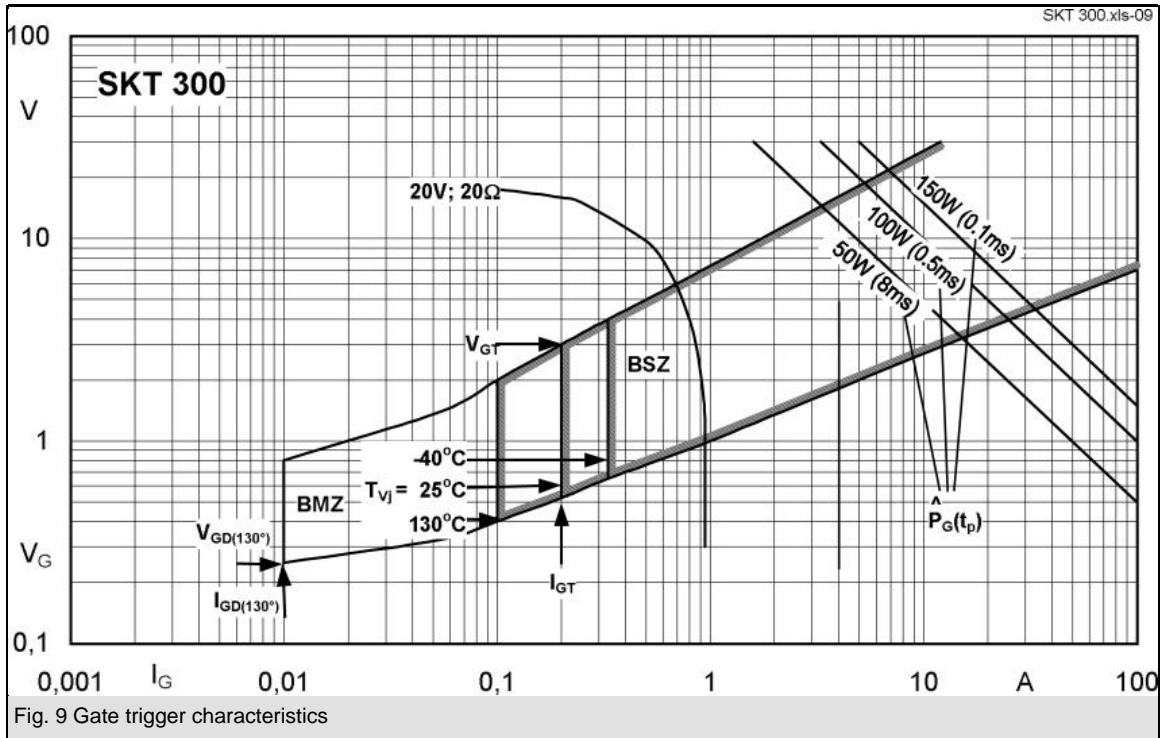


Fig. 5 Thermal resistance vs. conduction angle





\* 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.