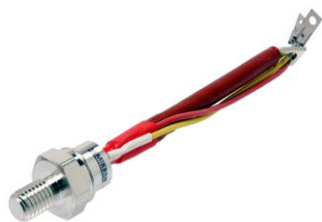


# SKT 100



Stud Thyristor

| $V_{RSM}$<br>V | $V_{RRM}, V_{DRM}$<br>V | $I_{TMS} = 175$ A (maximum value for continuous operation)<br>$I_{TAV} = 100$ A (sin. 180; $T_c = 85$ °C) |
|----------------|-------------------------|-----------------------------------------------------------------------------------------------------------|
| 500            | 400                     | SKT 100/04 D                                                                                              |
| 900            | 800                     | SKT 100/08 D                                                                                              |
| 1300           | 1200                    | SKT 100/12 E                                                                                              |
| 1500           | 1400                    | SKT 100/14 E                                                                                              |
| 1700           | 1600                    | SKT 100/16 E                                                                                              |
| 1900           | 1800                    | SKT 100/18 E                                                                                              |

## Line Thyristor

### SKT 100

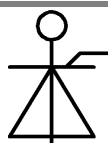
#### Features

- Hermetic metal case with glass insulator
- Threaded stud ISO M12 x 1,75 or ½" - 20 UNF 2A
- Interchangeable with 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  $V_{RMS} \leq 400$  V:  
 $R = 47 \Omega / 10$  W,  $C = 0,22 \mu F$

1) Mounting with grease-like thermal compound or joint contact compound  
2) M12 x 1,75 is standard, "UNF" should be added in description for ½" - 20 2A thread.  
e.g.: SKT 100/08 D UNF



SKT

| Symbol           | Condition                                               | Values     | Units            |
|------------------|---------------------------------------------------------|------------|------------------|
| $I_{TAV}$        | sin. 180; $T_c = 100$ (85) °C                           | 74 (100)   | A                |
| $I_D$            | 2 x P1/120; $T_a = 50$ °C; B2/B6                        | 125 / 176  | A                |
| $I_{RMS}$        | 2 x P1/120F; $T_a = 40$ °C; B2/B6                       | 182 / 250  | A                |
|                  | 2 x P1/120; $T_a = 45$ °C; W1C                          | 146        | A                |
| $I_{TSM}$        | $T_{vj} = 25$ °C; 10 ms                                 | 2000       | A                |
|                  | $T_{vj} = 130$ °C; 10 ms                                | 1750       | A                |
| $i^2t$           | $T_{vj} = 25$ °C; 8,3...10 ms                           | 20000      | A <sup>2</sup> s |
|                  | $T_{vj} = 130$ °C; 8,3...10 ms                          | 15300      | A <sup>2</sup> s |
| $V_T$            | $T_{vj} = 25$ °C, $I_T = 300$ A                         | max. 1,75  | V                |
| $V_{T(TO)}$      | $T_{vj} = 130$ °C                                       | max. 1     | V                |
| $r_T$            | $T_{vj} = 130$ °C                                       | max. 2,4   | mΩ               |
| $I_{DD}; I_{RD}$ | $T_{vj} = 130$ °C; $V_{RD} = V_{RRM}; V_{DD} = V_{DRM}$ | max. 30    | 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. 50    | A/μs             |
| $(dv/dt)_{cr}$   | $T_{vj} = 130$ °C; D (E)                                | 500 (1000) | V/μs             |
| $t_q$            | $T_{vj} = 130$ °C                                       | 100        | μs               |
| $I_H$            | $T_{vj} = 25$ °C; typ. / max                            | 150 / 250  | mA               |
| $I_L$            | $T_{vj} = 25$ °C; 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. 150   | 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.                                                   | 0,25       | K/W              |
| $R_{th(j-c)}$    | sin. 180                                                | 0,28       | K/W              |
| $R_{th(j-c)}$    | rec. 120                                                | 0,31       | K/W              |
| $R_{th(c-s)}$    |                                                         | 0,08       | K/W              |
| $T_{vj}$         |                                                         | -40...+130 | °C               |
| $T_{stg}$        |                                                         | -55...+150 | °C               |
| $V_{isol}$       |                                                         | -          | V~               |
| $M_S$            | M12 or ½" - 20 UNF                                      | 10         | Nm               |
|                  | M12 or ½" - 20 UNF (lubricated) <sup>1)</sup>           | 7,5        | Nm               |
| $a$              |                                                         | 5 * 9,81   | m/s <sup>2</sup> |
| $m$              | approx.                                                 | 100        | g                |
| Case             |                                                         | B5         |                  |

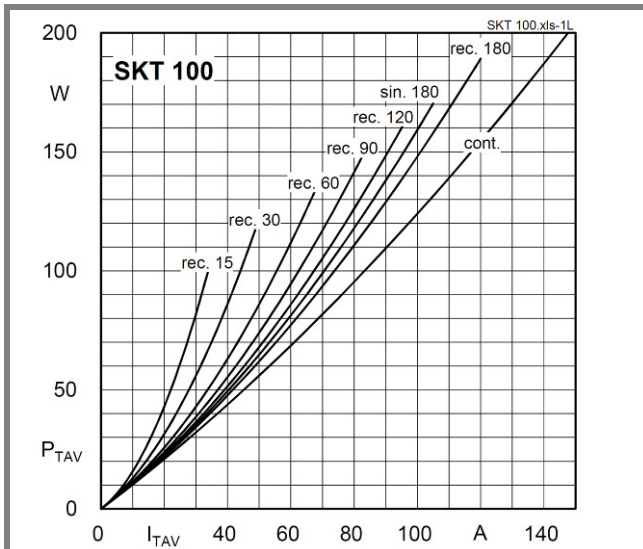


Fig. 1L Power dissipation vs. on-state current

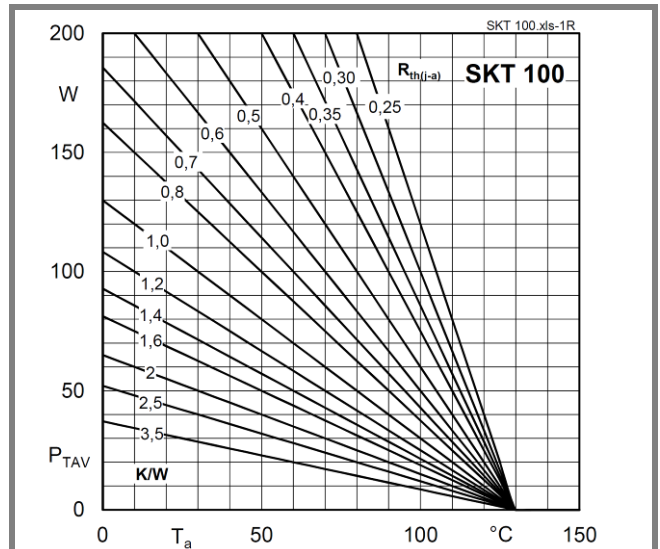


Fig. 1R Power dissipation vs. ambient temperature

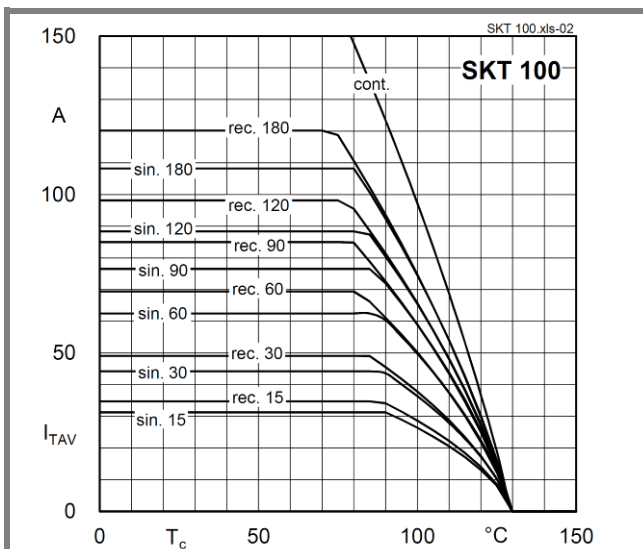


Fig. 2 Rated on-state current vs. case temperature

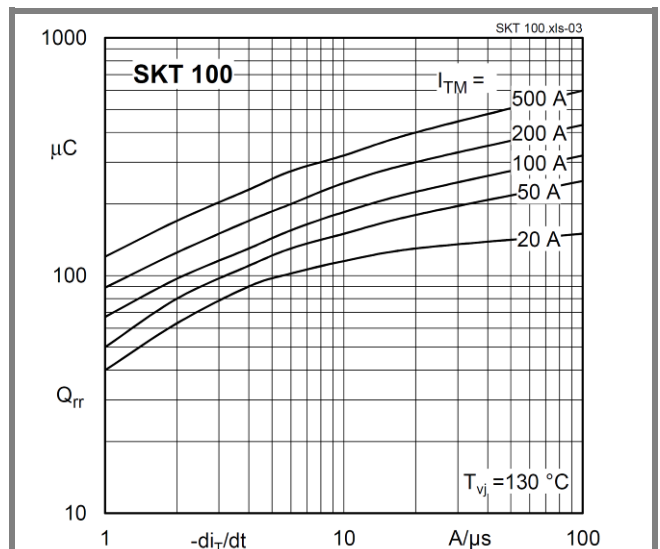


Fig. 3 Recovered charge vs. current decrease

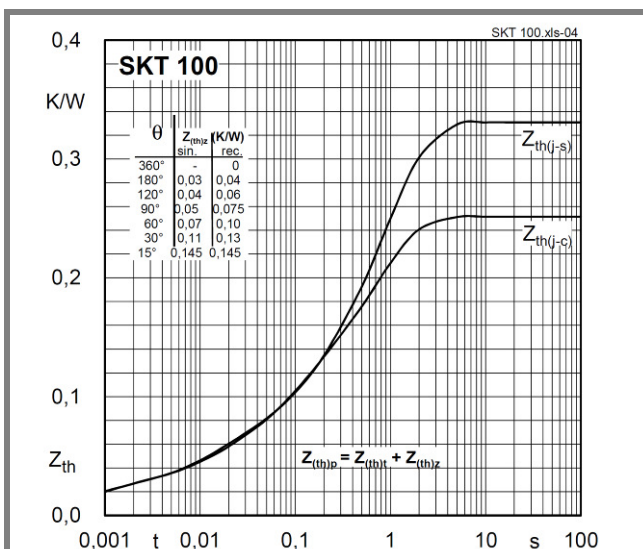


Fig. 4 Transient thermal impedance vs. time

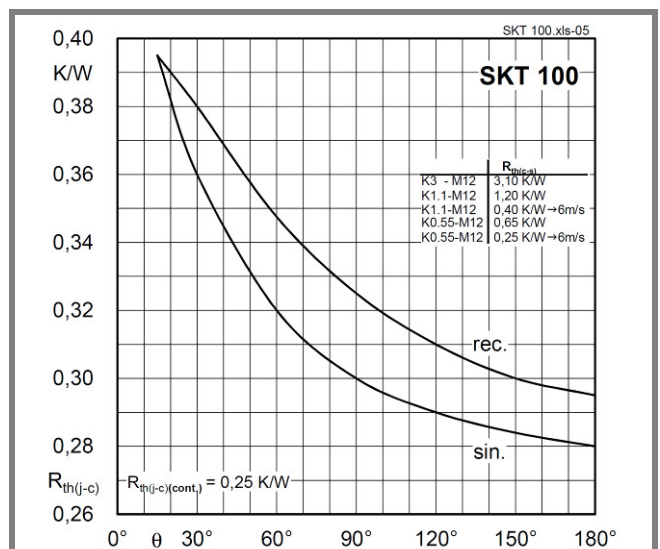
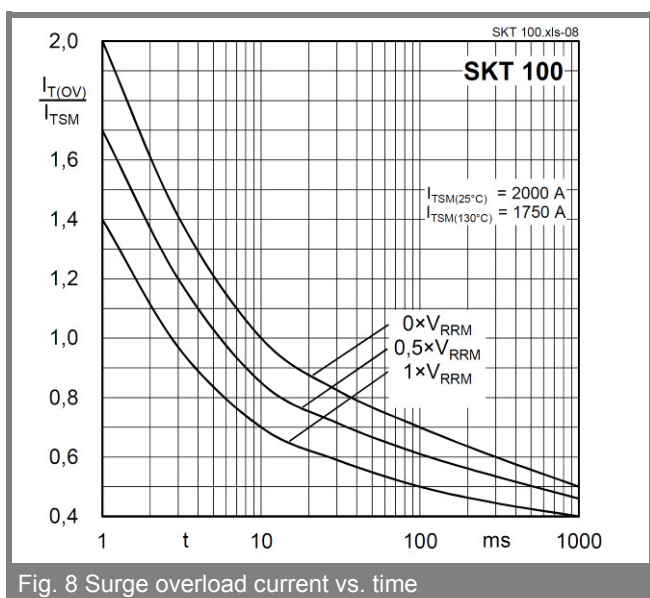
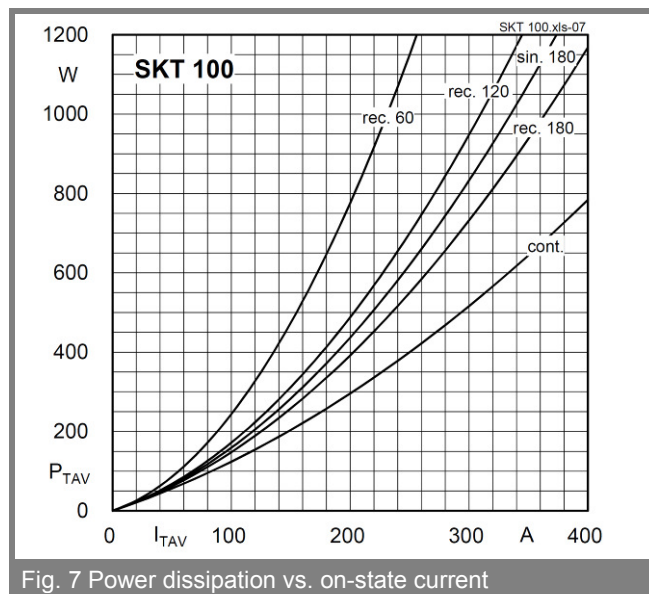
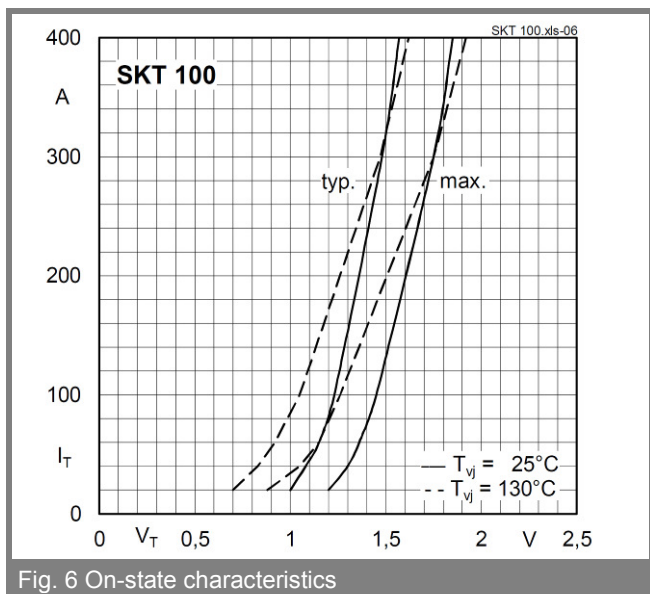


Fig. 5 Thermal resistance vs. conduction angle

# SKT 100



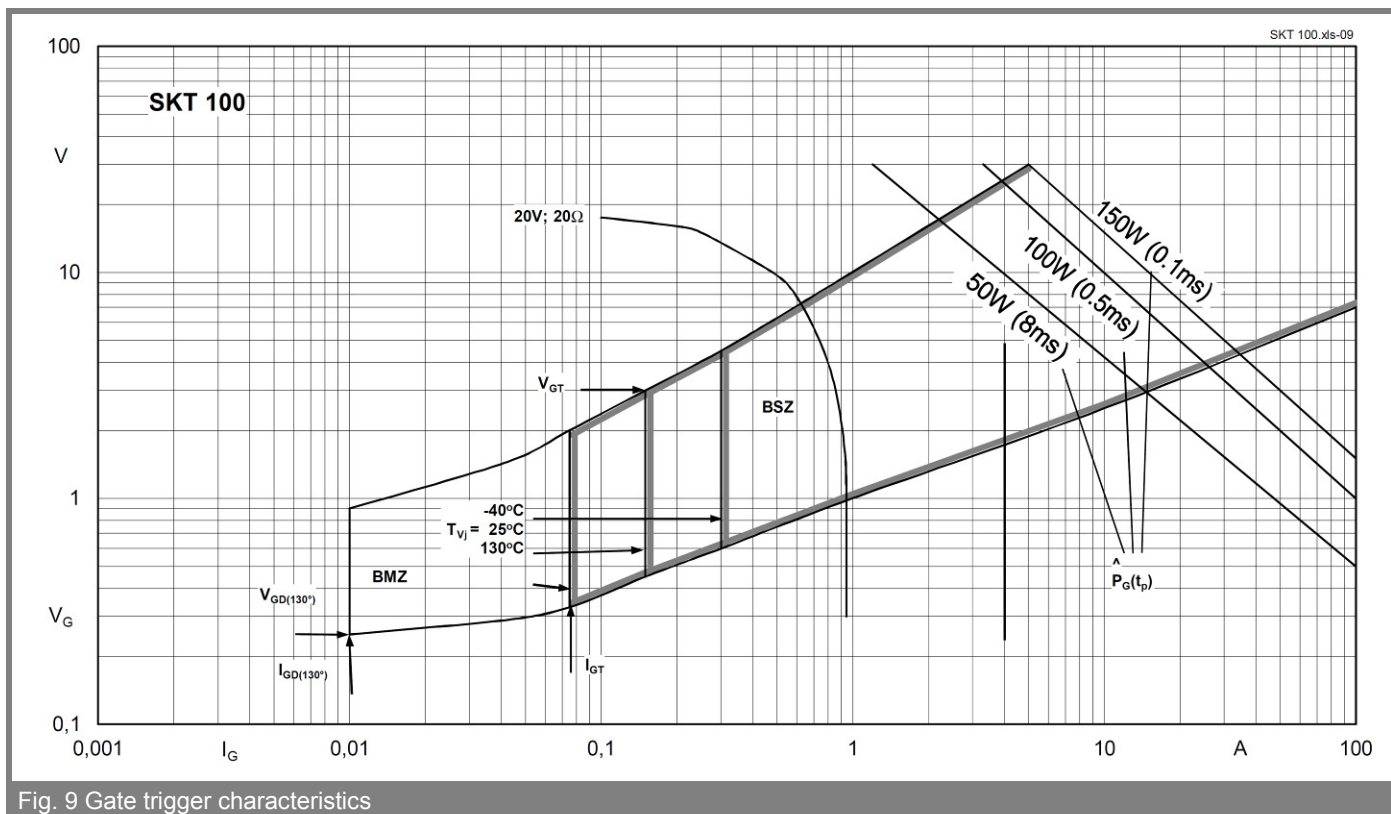
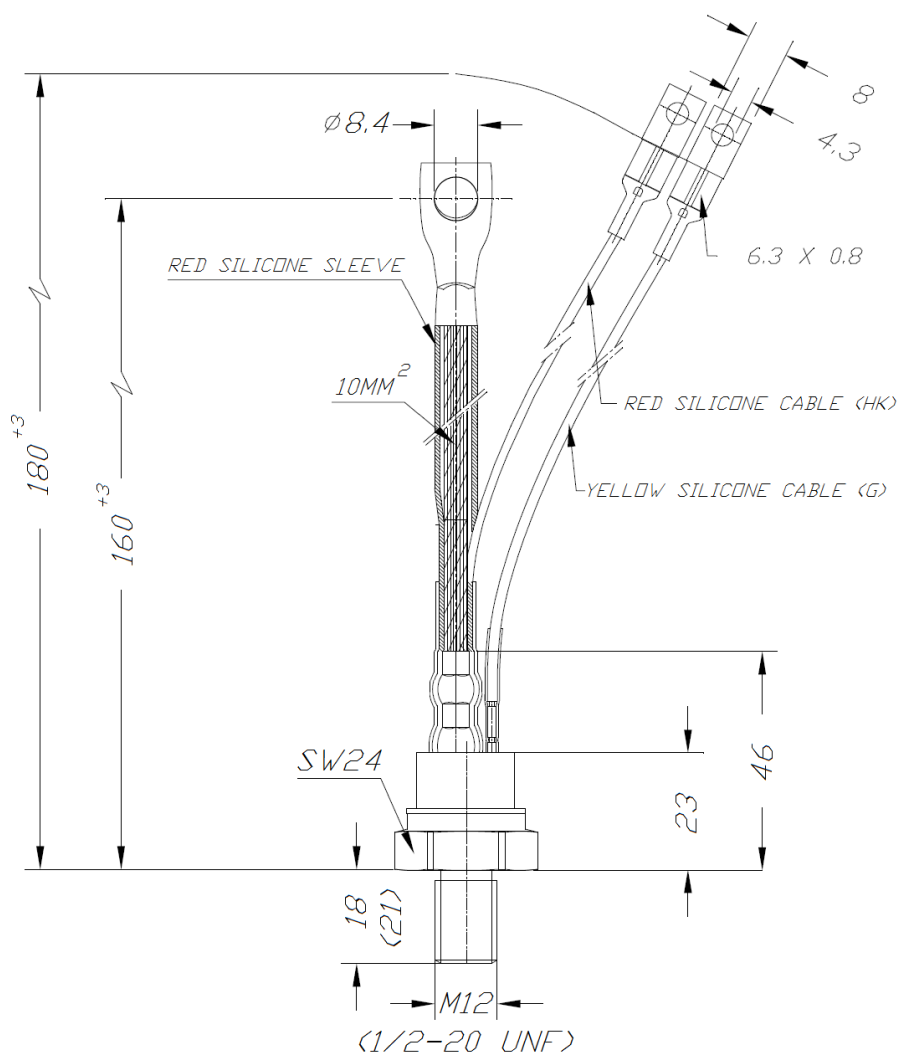


Fig. 9 Gate trigger characteristics



Case B5 (IEC 60191-2: A12MA, A12U; JEDEC: TO-209 (TO94))

## \*IMPORTANT INFORMATION AND WARNINGS

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