



**Capsule Thyristor**

## Line Thyristor

### SKT 760

#### Features

- Hermetic metal case with ceramic insulator
- Capsule package for double sided cooling
- Shallow design with single sided cooling
- International standard case
- Off-state and reverse voltages up to 1800 V
- Amplifying gate

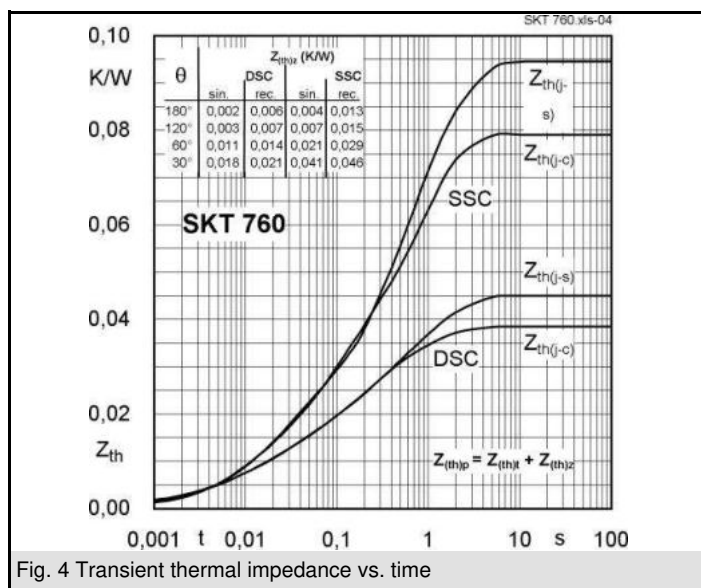
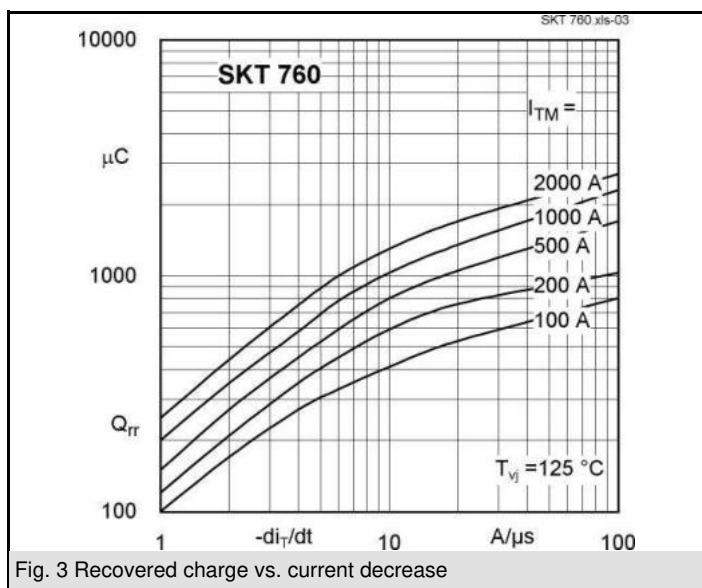
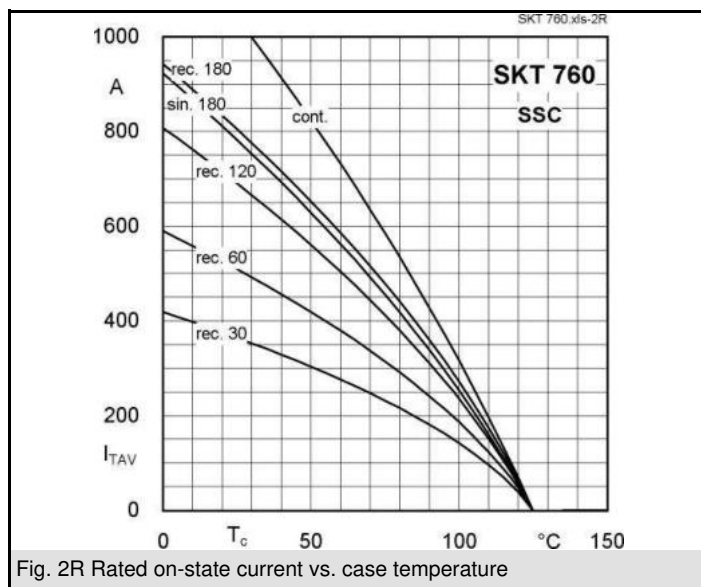
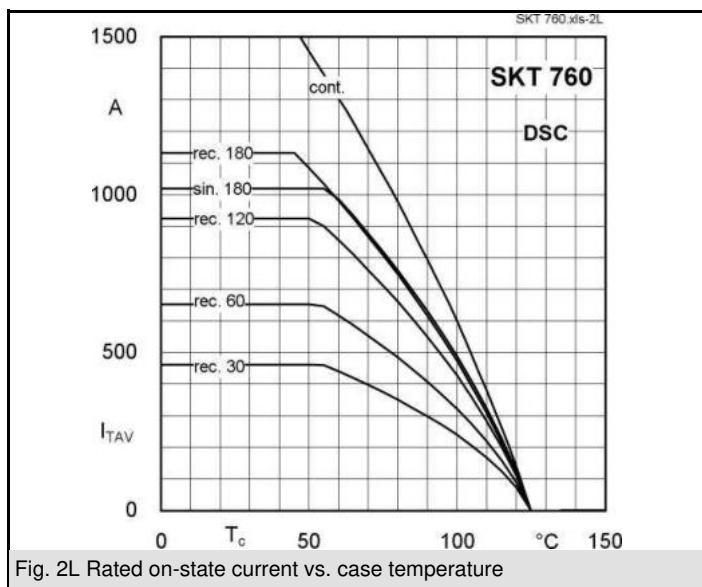
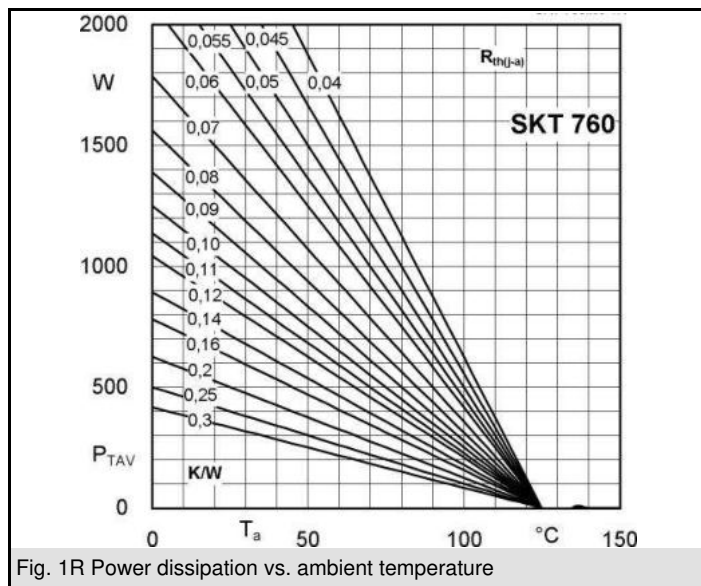
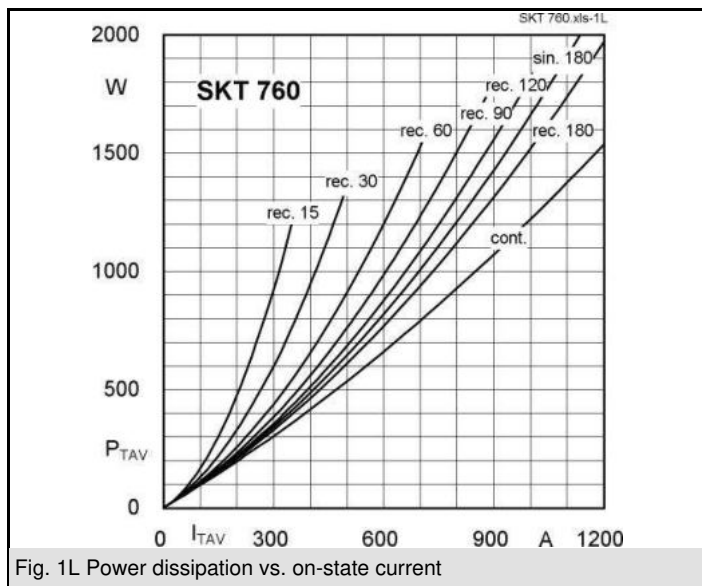
#### Typical Applications\*

- 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,  $C = 1 \mu F$

| $V_{RSM}$<br>V | $V_{RRM}, V_{DRM}$<br>V | $I_{TRMS} = 1600$ A (maximum value for continuous operation)<br>$I_{TAV} = 760$ A (sin. 180; DSC; $T_c = 80$ °C) |  |  |
|----------------|-------------------------|------------------------------------------------------------------------------------------------------------------|--|--|
| 1300           | 1200                    | SKT 760/12E                                                                                                      |  |  |
| 1700           | 1600                    | SKT 760/16E                                                                                                      |  |  |
| 1900           | 1800                    | SKT 760/18E                                                                                                      |  |  |

| Symbol           | Conditions                                              | Values          | Units            |
|------------------|---------------------------------------------------------|-----------------|------------------|
| $I_{TAV}$        | sin. 180; $T_c = 100$ (85) °C;                          | 488 (696 )      | A                |
| $I_D$            | 2 x P8/180; $T_a = 45$ °C; B2 / B6                      | 440 / 620       | A                |
|                  | 2 x P8/180 F; $T_a = 35$ °C; B2 / B6                    | 1200 / 1700     | A                |
| $I_{RMS}$        | 2 x P8/180; $T_a = 45$ °C; W1C                          | 480             | A                |
| $I_{TSM}$        | $T_{vj} = 25$ °C; 10 ms                                 | 15000           | A                |
|                  | $T_{vj} = 125$ °C; 10 ms                                | 13000           | A                |
| $i^2t$           | $T_{vj} = 25$ °C; 8,3 ... 10 ms                         | 1125000         | A <sup>2</sup> s |
|                  | $T_{vj} = 125$ °C; 8,3 ... 10 ms                        | 845000          | A <sup>2</sup> s |
| $V_T$            | $T_{vj} = 25$ °C; $I_T = 2400$ A                        | max. 1,65       | V                |
| $V_{T(TO)}$      | $T_{vj} = 125$ °C                                       | max. 0,92       | V                |
| $r_T$            | $T_{vj} = 125$ °C                                       | max. 0,3        | mΩ               |
| $I_{DD}, I_{RD}$ | $T_{vj} = 125$ °C; $V_{RD} = V_{RRM}; V_{DD} = V_{DRM}$ | max. 90         | 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               |
| $(di/dt)_{cr}$   | $T_{vj} = 125$ °C                                       | max. 125        | A/μs             |
| $(dv/dt)_{cr}$   | $T_{vj} = 125$ °C; SKT ...D / SKT ...E                  | max. 500 / 1000 | V/μs             |
| $t_q$            | $T_{vj} = 125$ °C                                       | 100 ... 200     | μs               |
| $I_H$            | $T_{vj} = 25$ °C; typ. / max.                           | 150 / 500       | mA               |
| $I_L$            | $T_{vj} = 25$ °C; typ. / max.                           | 500 / 2000      | mA               |
| $V_{GT}$         | $T_{vj} = 25$ °C; d.c.                                  | min. 3          | V                |
| $I_{GT}$         | $T_{vj} = 25$ °C; d.c.                                  | min. 200        | mA               |
| $V_{GD}$         | $T_{vj} = 125$ °C; d.c.                                 | max. 0,25       | V                |
| $I_{GD}$         | $T_{vj} = 125$ °C; d.c.                                 | max. 10         | mA               |
| $R_{th(j-c)}$    | cont.; DSC                                              | 0,038           | K/W              |
| $R_{th(j-c)}$    | sin. 180; DSC / SSC                                     | 0,04 / 0,082    | K/W              |
| $R_{th(j-c)}$    | rec. 120; DSC / SSC                                     | 0,045 / 0,093   | K/W              |
| $R_{th(c-s)}$    | DSC / SSC                                               | 0,007 / 0,014   | K/W              |
| $T_{vj}$         |                                                         | - 40 ... + 125  | °C               |
| $T_{stg}$        |                                                         | - 40 ... + 130  | °C               |
| $V_{isol}$       |                                                         | -               | V~               |
| $F_a$            | mounting force                                          | 10 ... 13       | kN               |
| $m$              | approx.                                                 | 240             | m/s <sup>2</sup> |
| Case             |                                                         | B 10            | g                |





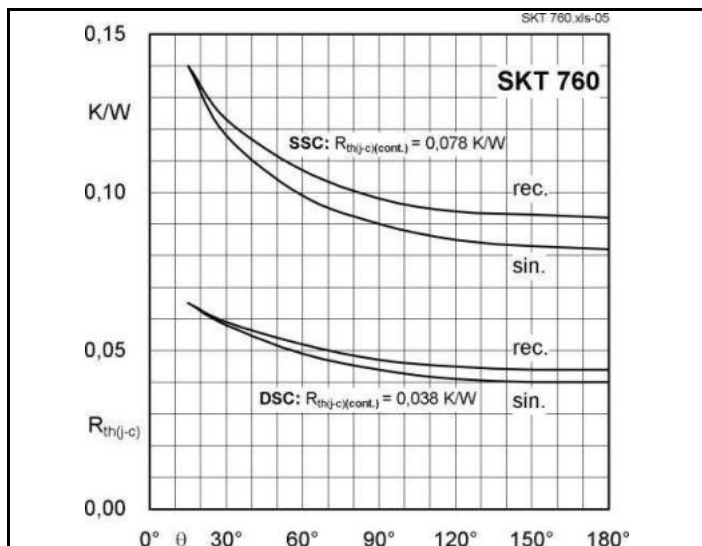


Fig. 5 Thermal resistance vs. conduction angle

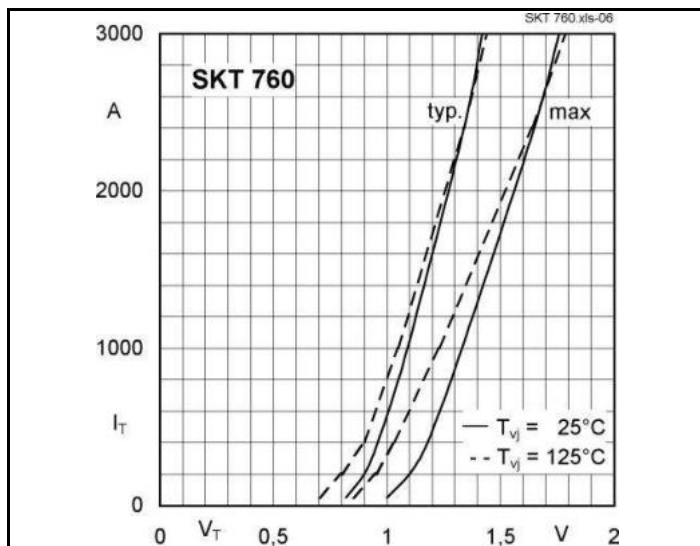


Fig. 6 On-state characteristics

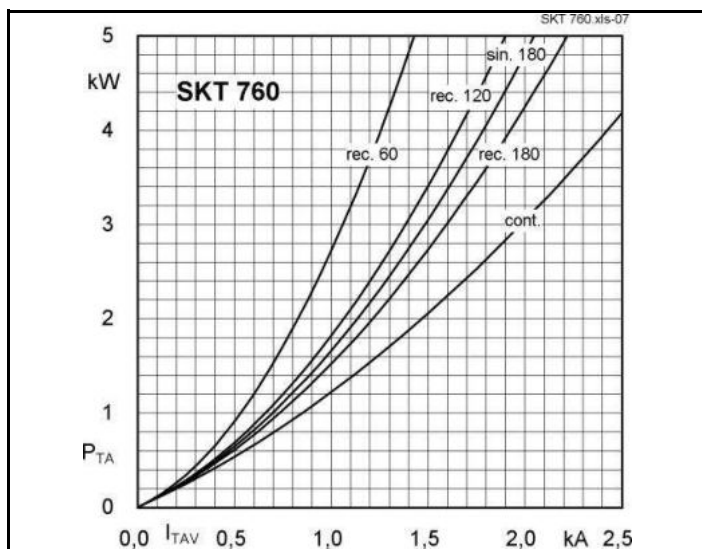


Fig. 7 Power dissipation vs. on-state current

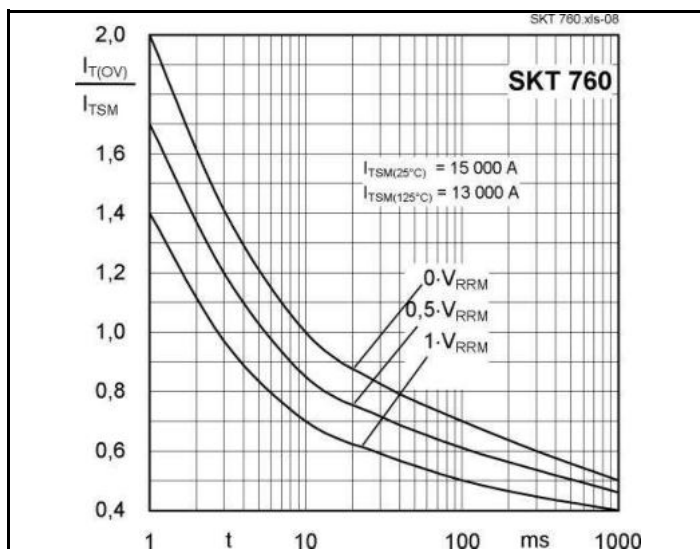
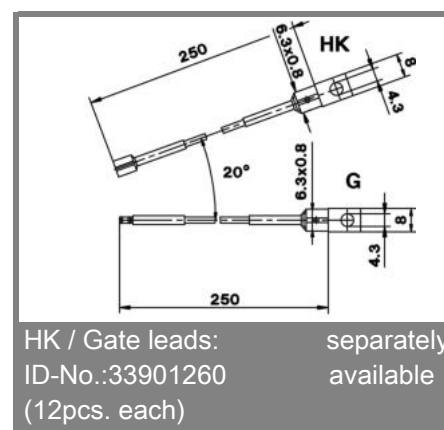
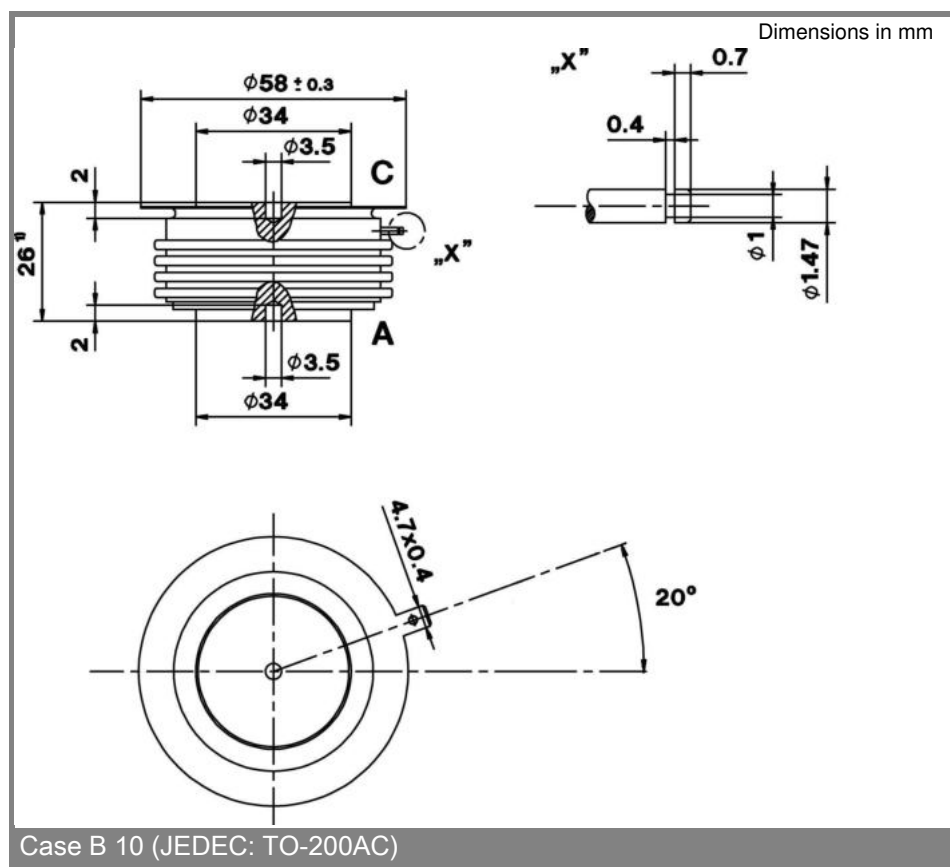
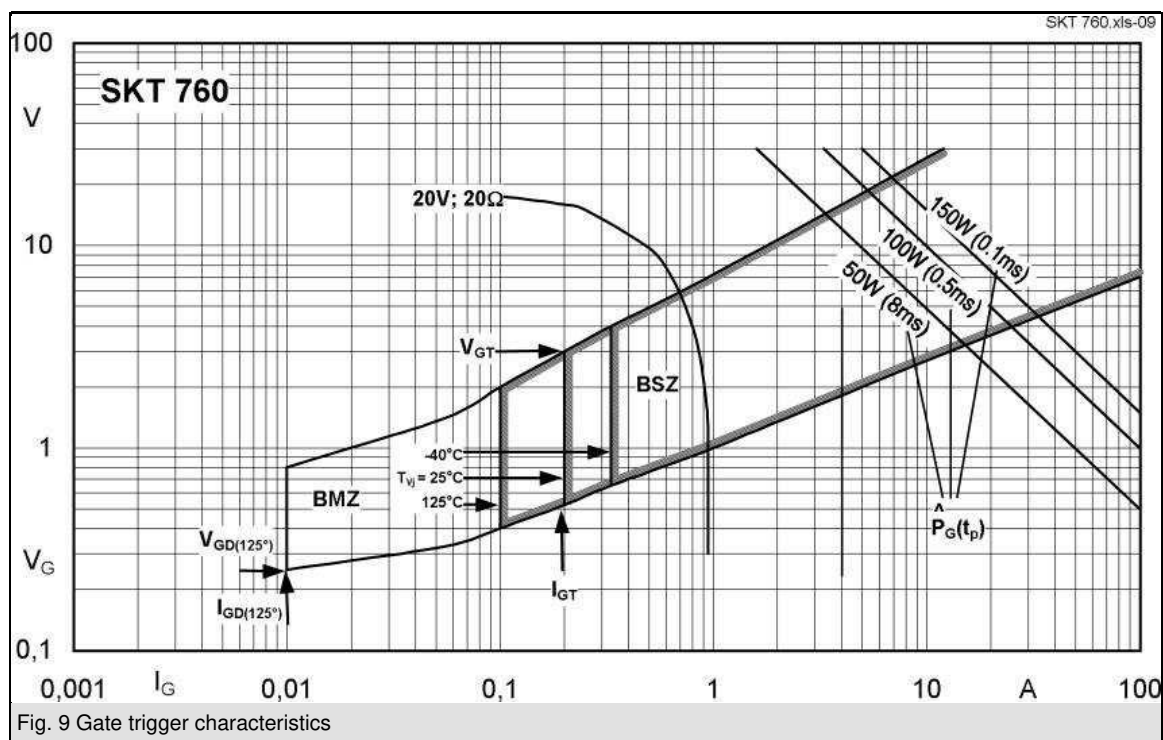


Fig. 8 Surge overload current vs. time



\* 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 staff.