



SEMIPONT[®] 2

Controllable Bridge Rectifiers

SKBT 40

Features

- Fully controlled single phase bridge rectifier
- Robust plastic case with screw terminals
- Large, isolated base plate
- Blocking voltage to 1400V
- High surge currents
- Easy chassis mounting
- UL recognized, file no. E 63 532

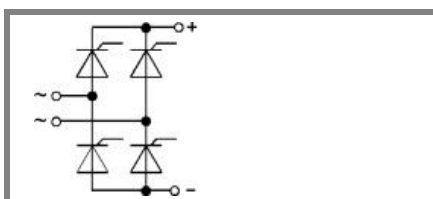
Typical Applications*

- For reversing DC drives
- Controlled field rectifiers for DC motors
- Controlled battery charger rectifiers

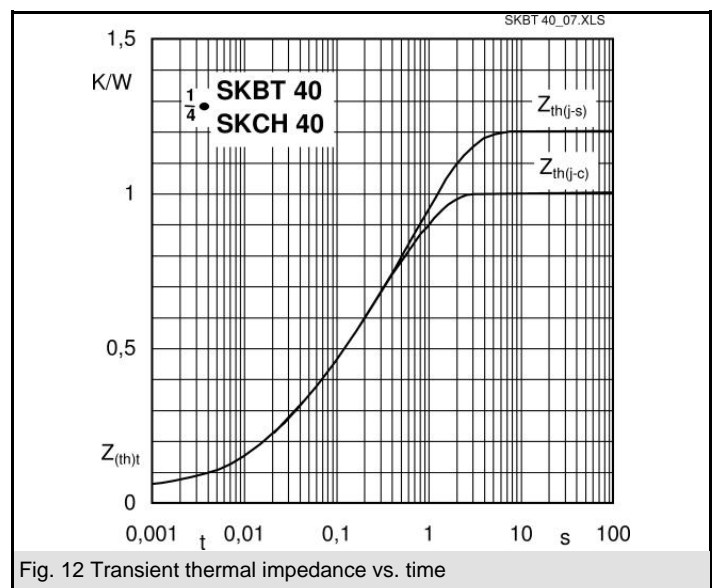
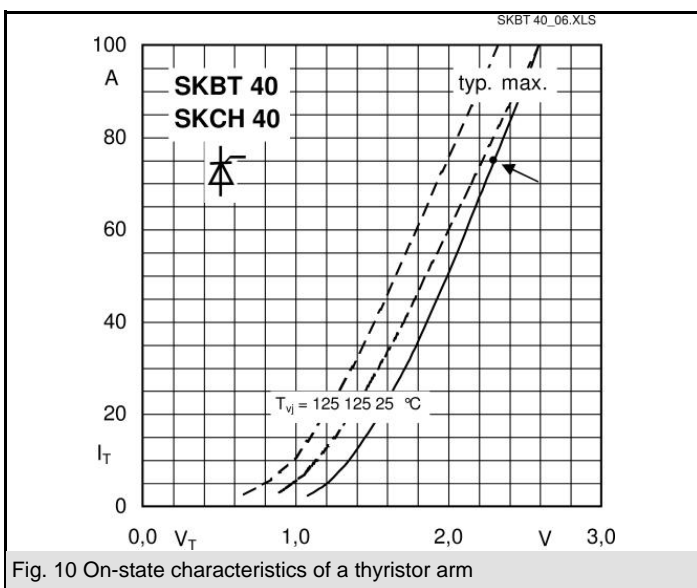
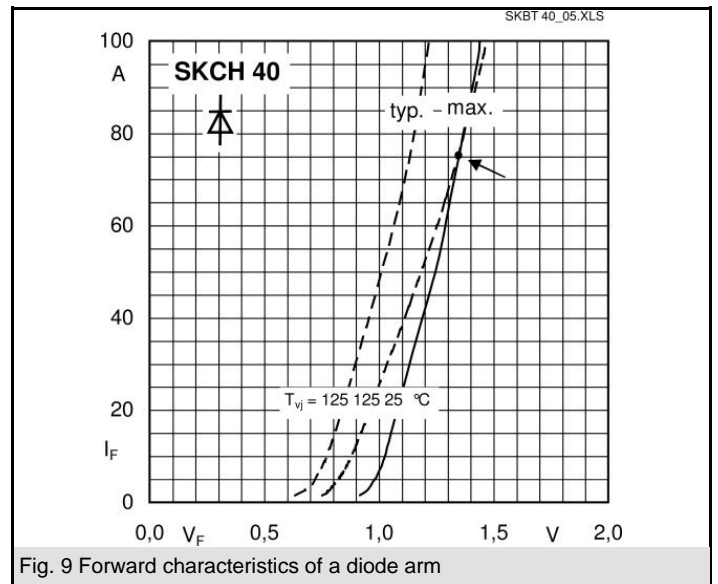
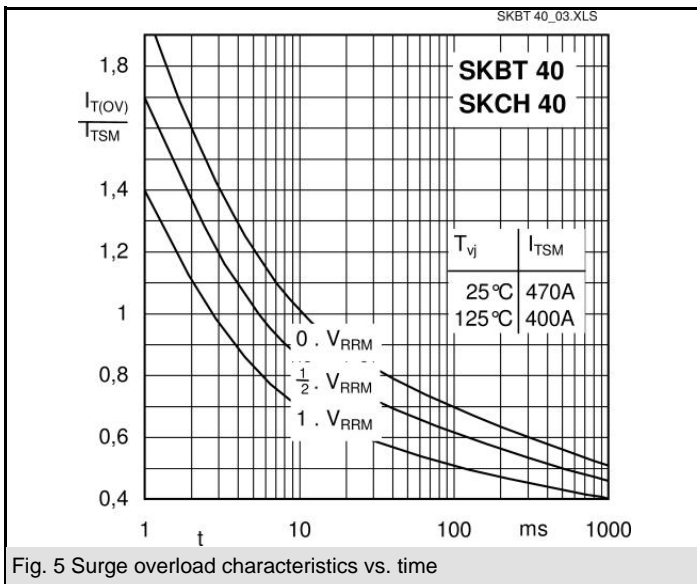
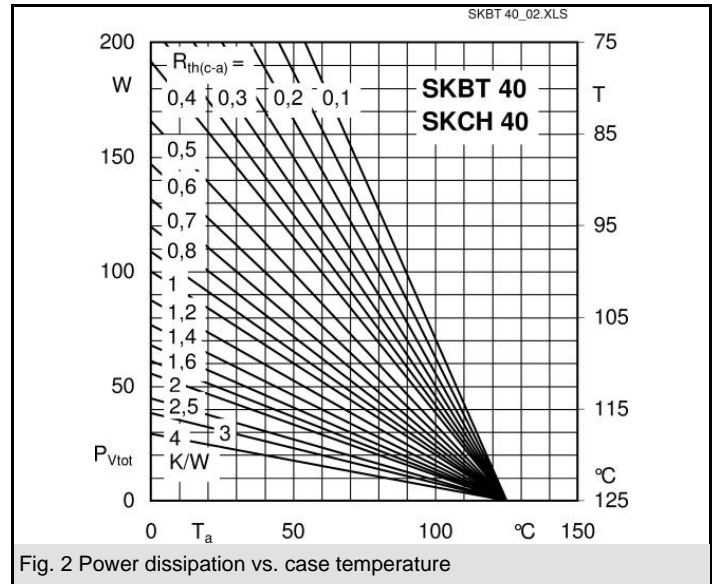
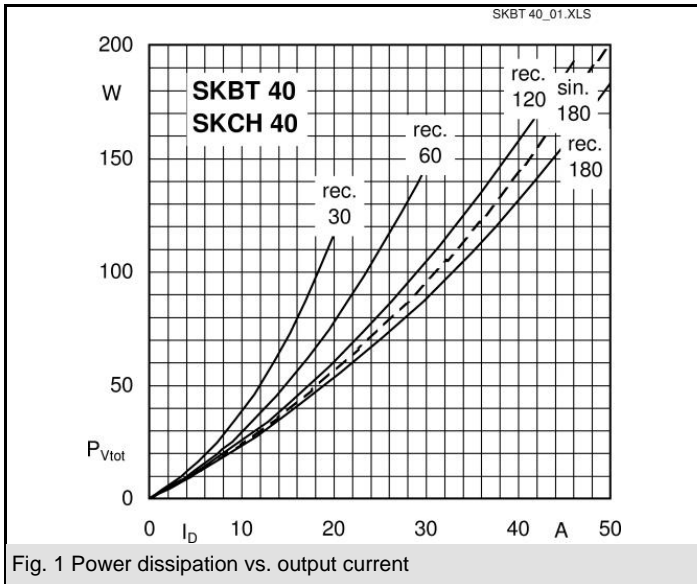
1) Painted metal shield of minimum 250 x 250 x 1 mm: $R_{th(c-a)} = 1,8 \text{ K/W}$

| V_{RSM} V | V_{RRM}, V_{DRM} V | $I_D = 40 \text{ A (full conduction)}$ ($T_c = 92 \text{ °C}$) |
|----------------|-------------------------|---|
| 800 | 800 | SKBT 40/08 |
| 1200 | 1200 | SKBT 40/12 |
| 1400 | 1400 | SKBT 40/14 |

| Symbol | Conditions | Values | Units |
|--------------------|--|----------------|------------------|
| I_D | $T_c = 85 \text{ °C}$ | 46 | A |
| | $T_a = 45 \text{ °C; chassis } ^1)$ | 15 | A |
| | $T_a = 45 \text{ °C; R4A/120}$ | 18 | A |
| | $T_a = 45 \text{ °C; P13A/125}$ | 18 | A |
| | $T_a = 45 \text{ °C; P1A/120}$ | 28 | A |
| I_{TSM}, I_{FSM} | $T_{vj} = 25 \text{ °C; } 10 \text{ ms}$ | 470 | A |
| | $T_{vj} = 125 \text{ °C; } 10 \text{ ms}$ | 400 | A |
| i^2t | $T_{vj} = 25 \text{ °C; } 8,3 \dots 10 \text{ ms}$ | 1100 | A ² s |
| | $T_{vj} = 125 \text{ °C; } 8,3 \dots 10 \text{ ms}$ | 800 | A ² s |
| V_T | $T_{vj} = 25 \text{ °C; } I_T = 75 \text{ A}$ | max. 2,3 | V |
| $V_{T(TO)}$ | $T_{vj} = 125 \text{ °C;}$ | max. 1 | V |
| r_T | $T_{vj} = 125 \text{ °C}$ | max. 16 | mΩ |
| I_{DD}, I_{RD} | $T_{vj} = 125 \text{ °C; } V_{DD} = V_{DRM}; V_{RD} = V_{RRM}$ | max. 10 | mA |
| t_{gd} | $T_{vj} = 25 \text{ °C; } I_G = 1 \text{ A; } di_G/dt = 1 \text{ A/}\mu\text{s}$ | 1 | μs |
| t_{gr} | $V_D = 0,67 \cdot V_{DRM}$ | 1 | μs |
| $(dv/dt)_{cr}$ | $T_{vj} = 125 \text{ °C}$ | max. 500 | V/μs |
| $(di/dt)_{cr}$ | $T_{vj} = 125 \text{ °C; } f = 50 \text{ Hz}$ | max. 50 | A/μs |
| t_q | $T_{vj} = 125 \text{ °C; typ.}$ | 80 | μs |
| I_H | $T_{vj} = 25 \text{ °C; typ. / max.}$ | 100 / 200 | mA |
| I_L | $T_{vj} = 25 \text{ °C; } R_G = 33 \text{ }\Omega$ | 250 / 400 | mA |
| V_{GT} | $T_{vj} = 25 \text{ °C; d.c.}$ | min. 3 | V |
| I_{GT} | $T_{vj} = 25 \text{ °C; d.c.}$ | min. 150 | mA |
| V_{GD} | $T_{vj} = 125 \text{ °C; d.c.}$ | max. 0,25 | V |
| I_{GD} | $T_{vj} = 125 \text{ °C; d.c.}$ | max. 5 | mA |
| $R_{th(j-c)}$ | per thyristor / diode | 1 | K/W |
| | total | 0,25 | K/W |
| $R_{th(c-s)}$ | total | 0,05 | K/W |
| | | | |
| T_{vj} | | - 40 ... + 125 | °C |
| T_{stg} | | - 40 ... + 125 | °C |
| V_{isol} | a. c. 50 Hz; r.m.s.; 1 s / 1 min. | 3600 (3000) | V |
| M_s | to heatsink | 5 | Nm |
| M_t | to terminals | 3 | Nm |
| m | | 165 | g |
| Case | SKBT | G 20 | |



SKBT



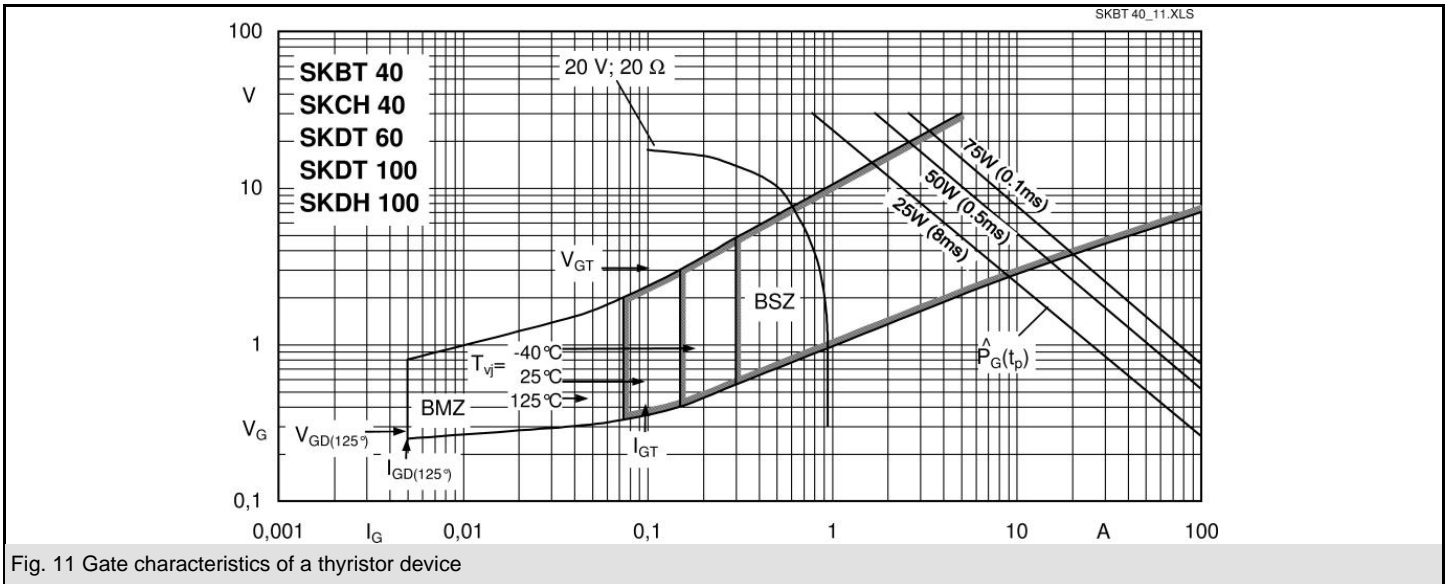
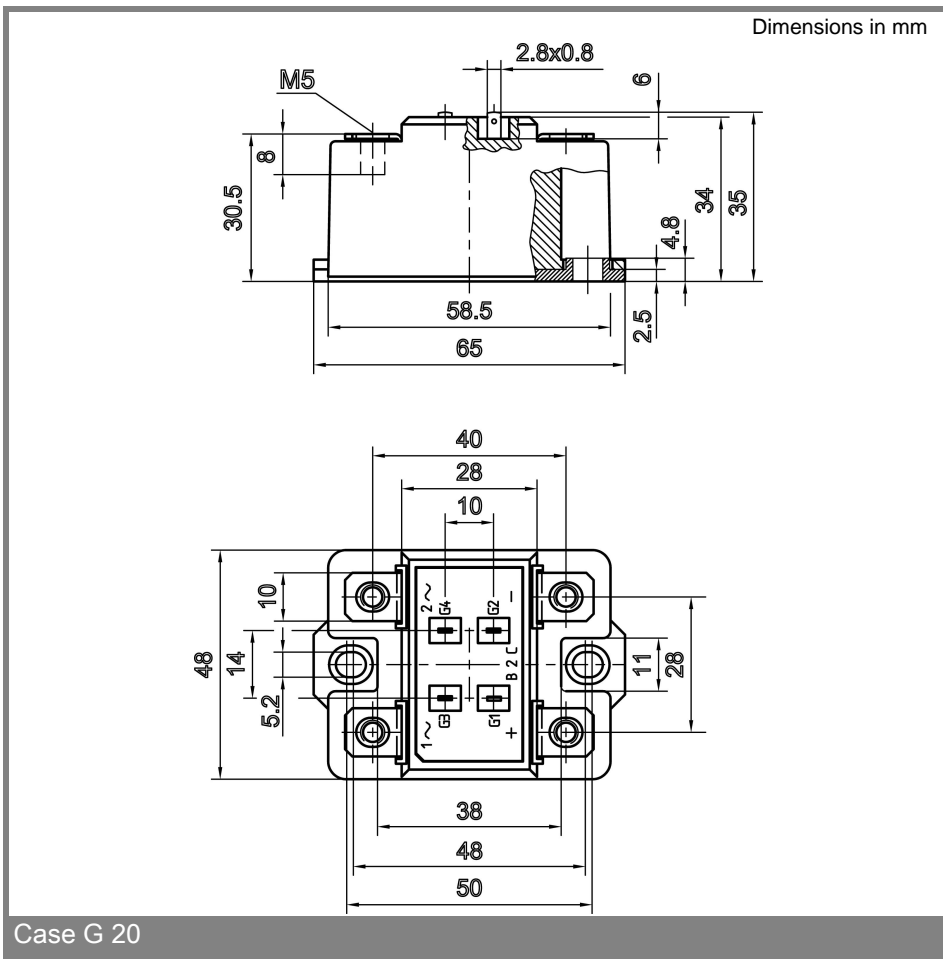


Fig. 11 Gate characteristics of a thyristor device



* 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.