

SKCH 40



SEMIPONT[®] 2

Controllable Bridge Rectifiers

SKCH 40

Features

- Fully controlled single phase bridge rectifier
- Robust plastic case with screw terminals
- Large, isolated base plate
- Blocking voltage to 1600V
- High surge currents
- Easy chassis mounting
- UL recognized, file no. E 63 532

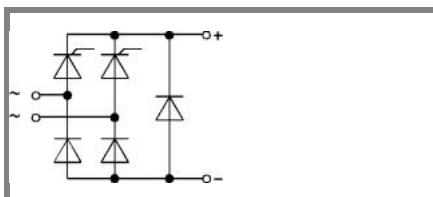
Typical Applications

- For DC drives with a fixed direction of rotation
- Controlled field rectifiers for DC motors
- Controlled battery charger rectifiers

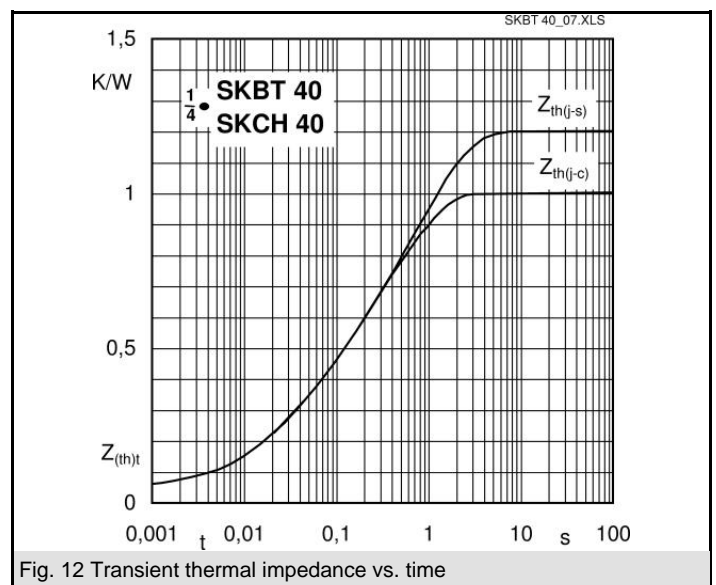
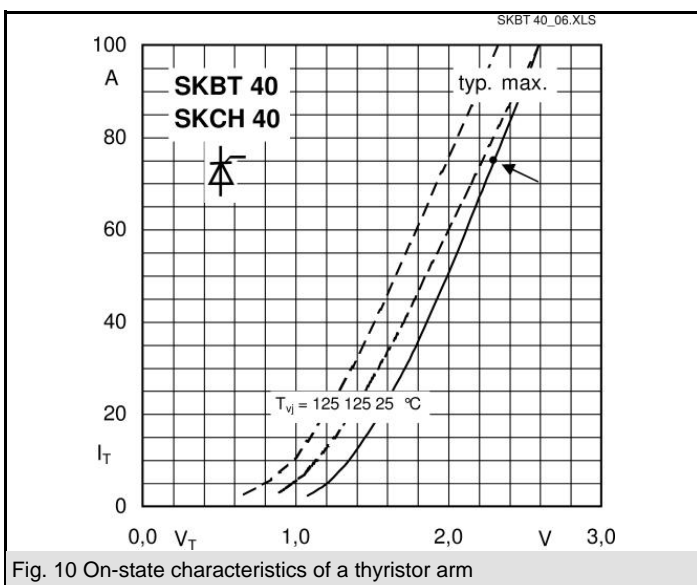
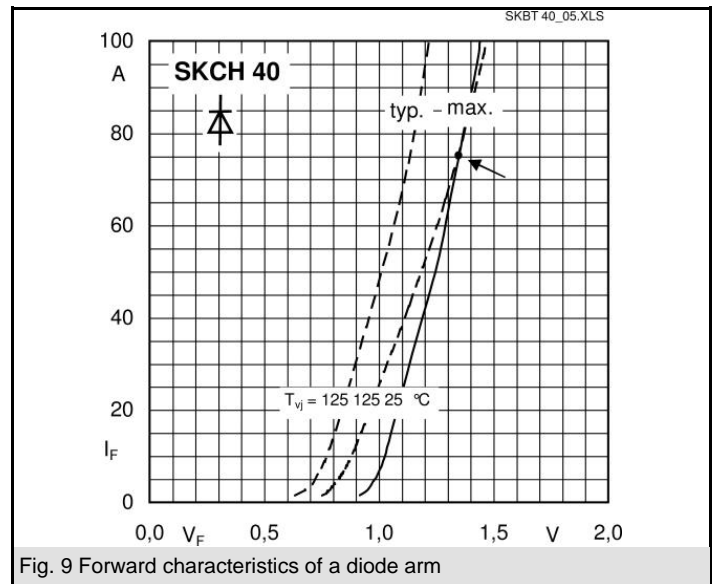
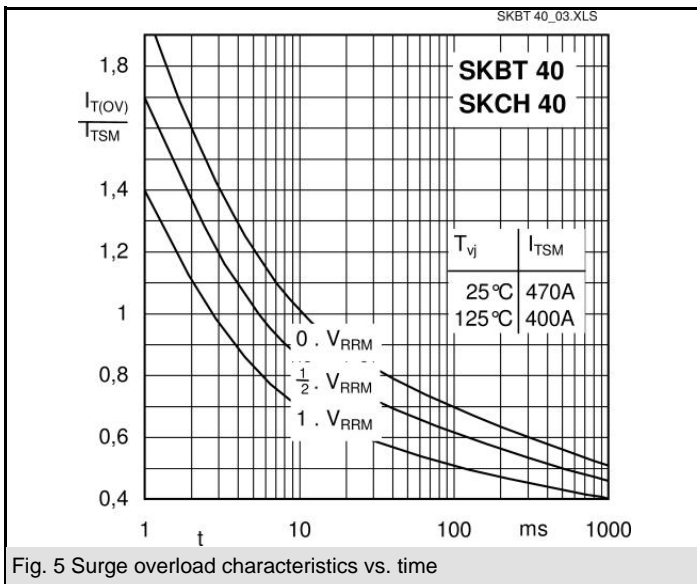
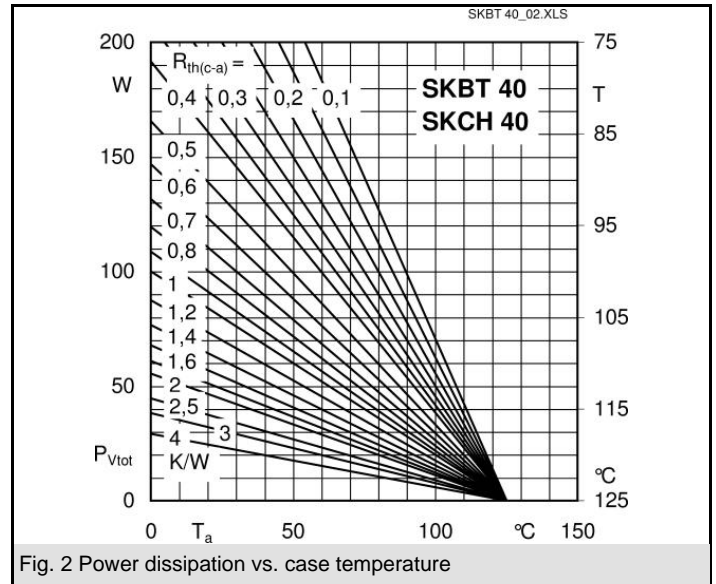
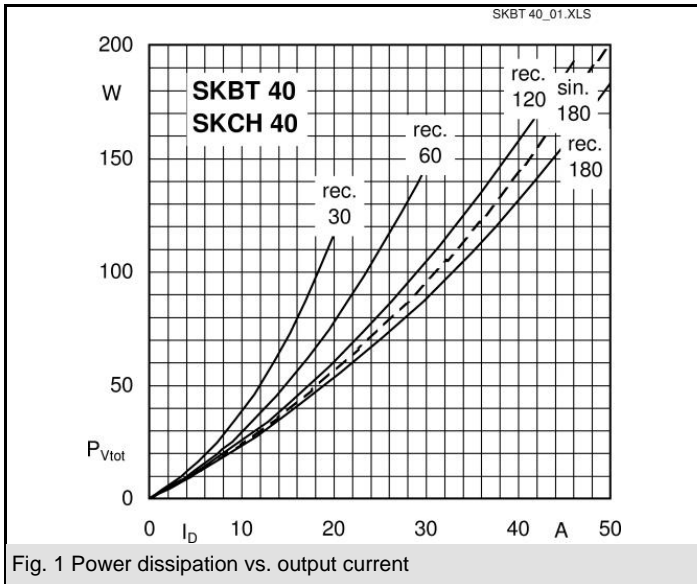
1) Painted metal shield of minimum 250 x 250 x 1 mm: $R_{th(c-a)} = 1,8 \text{ K/W}$

| V_{RSM} V | V_{RRM}, V_{DRM} V | $I_D = 40 \text{ A}$ (full conduction) ($T_c = 92 \text{ °C}$) |
|----------------|-------------------------|---|
| 400 | 400 | SKCH 40/04 |
| 800 | 800 | SKCH 40/08 |
| 1200 | 1200 | SKCH 40/12 |
| 1400 | 1400 | SKCH 40/14 |
| 1600 | 1600 | SKCH 40/16 |

| 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 ms | 470 | A |
| | $T_{vj} = 125 \text{ °C}$; 10 ms | 400 | A |
| i^2t | $T_{vj} = 25 \text{ °C}$; 8,3 ... 10 ms | 1100 | A ² s |
| | $T_{vj} = 125 \text{ °C}$; 8,3 ... 10 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 | $T_{vj} = 25 \text{ °C}$; $R_G = 33 \text{ Ω}$ | 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 | SKCH | G 19 | |



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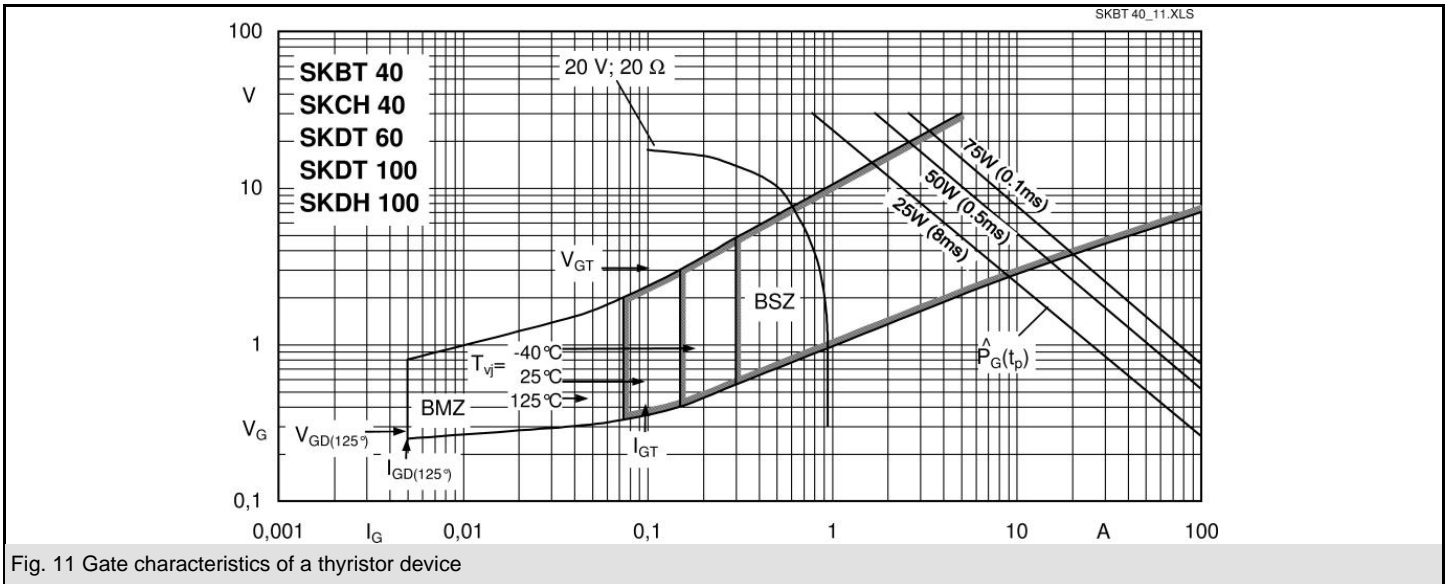
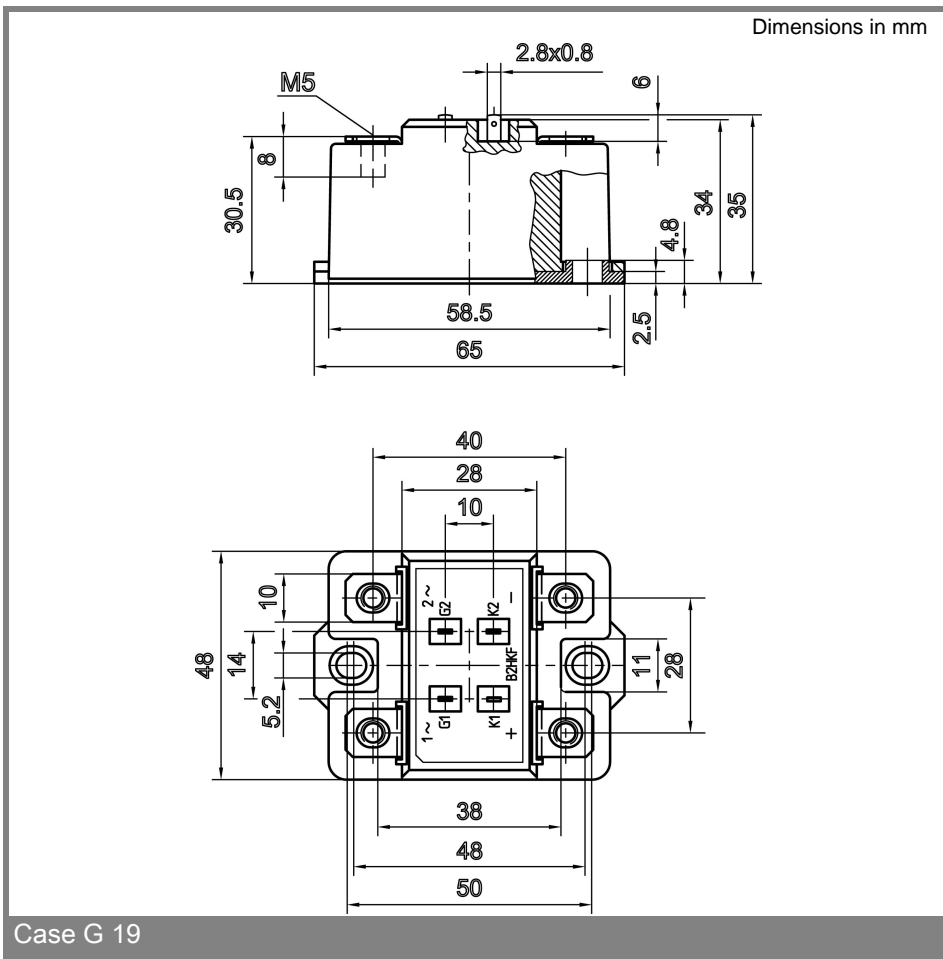


Fig. 11 Gate characteristics of a thyristor device



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