

SEMIPONT™ 5

Half Controlled 3-phase Bridge Rectifier

SKDH 115

Target Data

Features

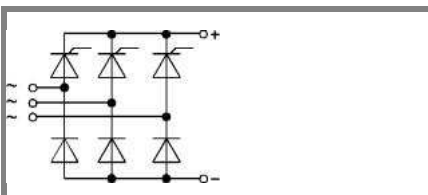
- Compact design
- Two screws mounting
- Heat transfer and isolation through direct copper board (low R_{th})
- Low resistance in steady-state and high reliability
- High surge currents
- UL -recognized, file no. E 63 532

Typical Applications*

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

| V_{RSM} V | V_{RRM}, V_{DRM} V | $I_D = 110$ A (full conduction) ($T_s = 80$ °C) |
|----------------|-------------------------|---|
| 1200 | 1200 | SKDH 115/12 |
| 1600 | 1600 | SKDH 115/16 |

| Symbol | Conditions | Values | Units |
|-------------------------|---|----------------|--------------------------------------|
| I_D | $T_s = 80$ °C | 110 | A |
| I_{TSM}, I_{FSM} | $T_{vj} = 25$ °C; 10 ms $T_{vj} = 125$ °C; 10 ms | 1050 950 | A A |
| i^2t | $T_{vj} = 25$ °C; 8,3 ... 10 ms $T_{vj} = 125$ °C; 8,3 ... 10 ms | 5500 4500 | A ² s A ² s |
| V_T, V_F | $T_{vj} = 25$ °C; $I_T, I_F = 120$ A | max. 1,8 | V |
| $V_{T(TO)} / V_{F(TO)}$ | $T_{vj} = 125$ °C; | max. 1,1 | V |
| r_T | $T_{vj} = 125$ °C | max. 6 | mΩ |
| I_{DD}, I_{RD} | $T_{vj} = 125$ °C; $V_{DD} = V_{DRM}; V_{RD} = V_{RRM}$ | max. 20 | mA |
| t_{gd} | $T_{vj} = 25$ °C; $I_G = 1$ A; $di_G/dt = 1$ A/μs | | μs |
| t_{gr} | $V_D = \cdot V_{DRM}$ | | μs |
| $(dv/dt)_{cr}$ | $T_{vj} = 125$ °C | max. 1000 | V/μs |
| $(di/dt)_{cr}$ | $T_{vj} = 125$ °C; $f = 50...60$ Hz | max. 50 | A/μs |
| t_q | $T_{vj} = 125$ °C; typ. | 150 | μs |
| I_H | $T_{vj} = 25$ °C; typ. / max. | - / 200 | mA |
| I_L | $T_{vj} = 25$ °C; $R_G = 33$ Ω | - / 400 | 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} | $T_{vj} = 125$ °C; d.c. | max. 0,25 | V |
| I_{GD} | $T_{vj} = 125$ °C; d.c. | max. 5 | mA |
| $R_{th(j-s)}$ | per thyristor / diode | 0,84 | K/W K/W K/W |
| T_{vj} | | - 40 ... + 125 | °C |
| T_{stg} | | - 40 ... + 125 | °C |
| T_{solder} | terminals | 260 | °C |
| V_{isol} | a. c. 50 Hz; r.m.s.; 1 s / 1 min. to heatsink | 3600 (3000) | V |
| M_s | | 2,5 | Nm |
| M_t | | | Nm |
| m | approx. | 75 | g |
| Case | SEMIPONT 5 | G 61 | |



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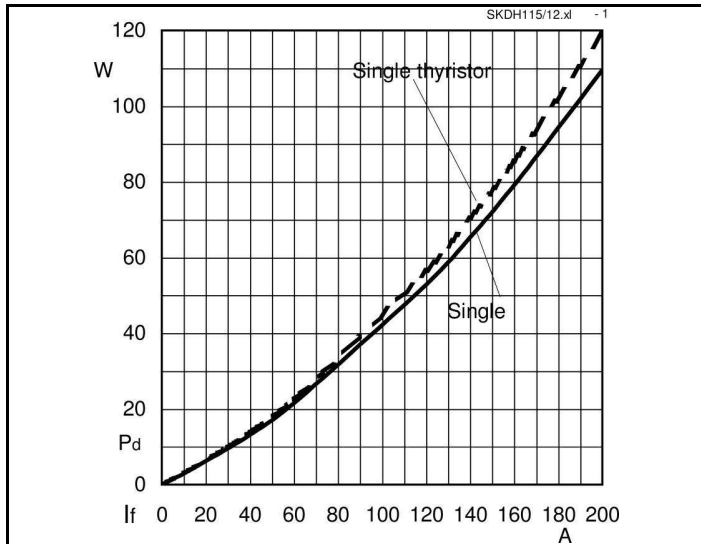


Fig. 1 Power dissipation vs. output current

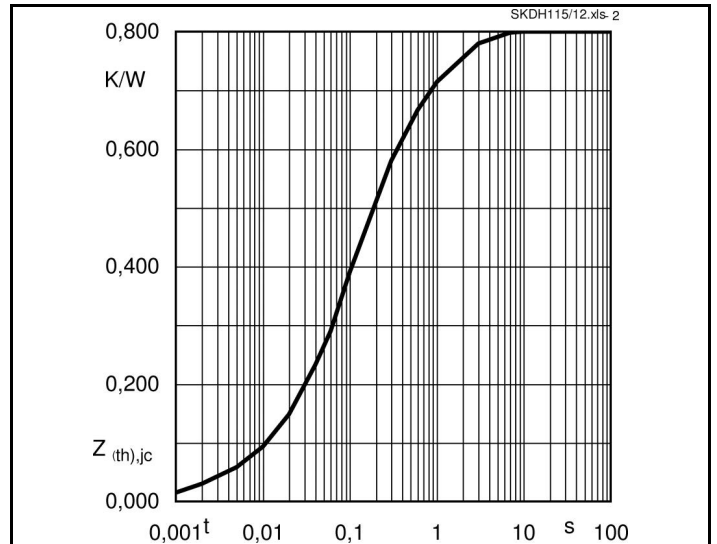


Fig. 2 Transient thermal impedance vs. time

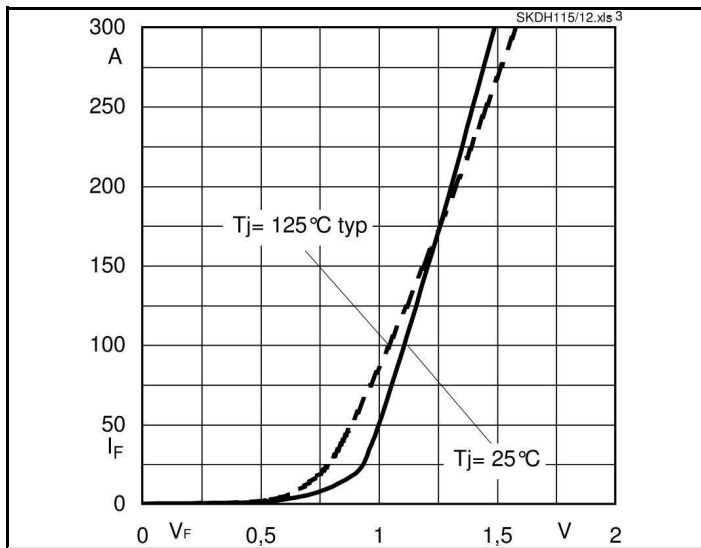


Fig. 3 Single diode on-state characteristic

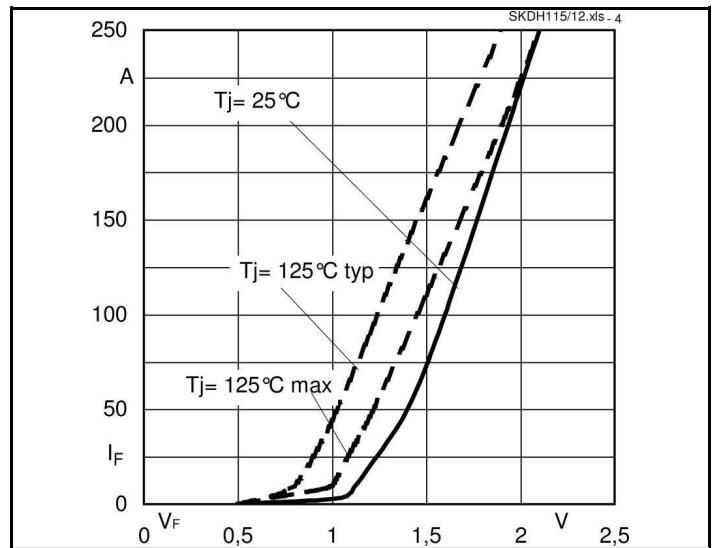


Fig. 4 Single thyristor on-state characteristic

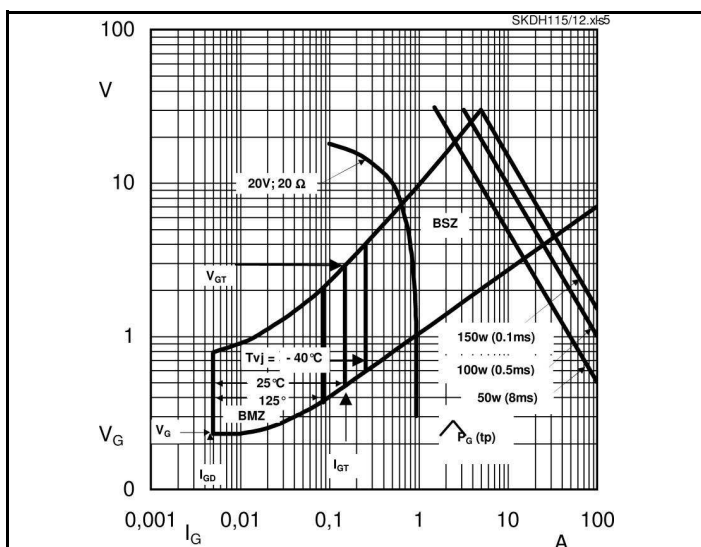
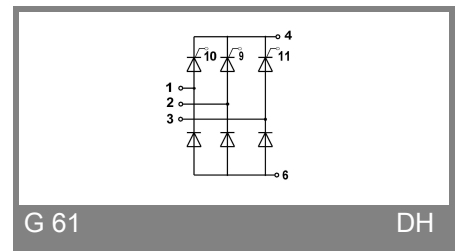
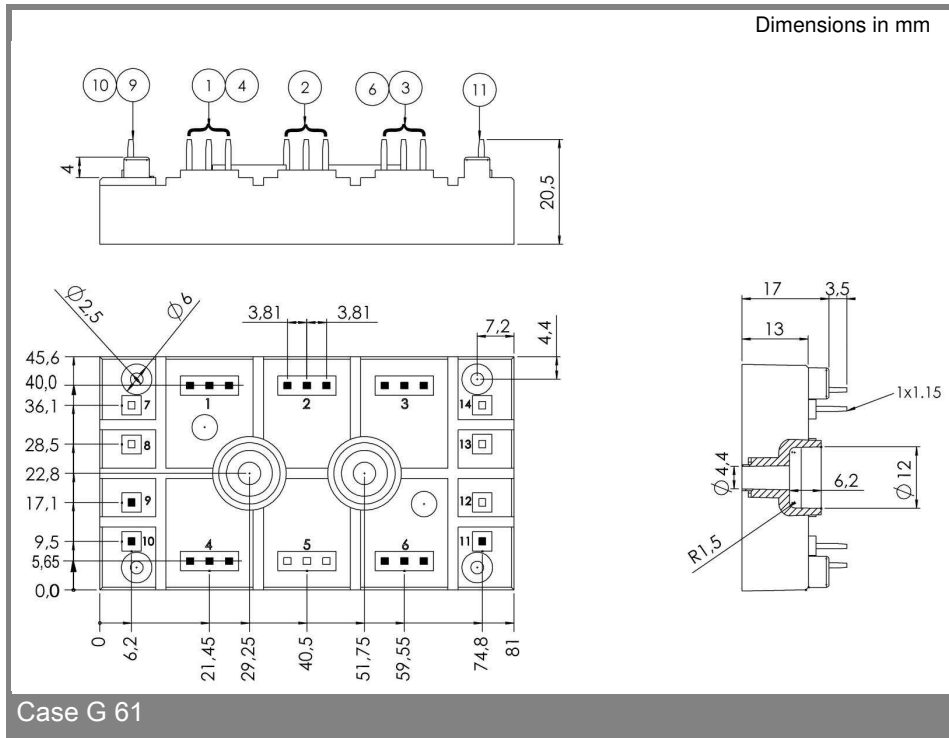


Fig. 5 Gate trigger characteristic

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