

SEMiX® 13s

Bridge Rectifier Module (halfcontrolled)

SEMiX 241DH

Preliminary Data

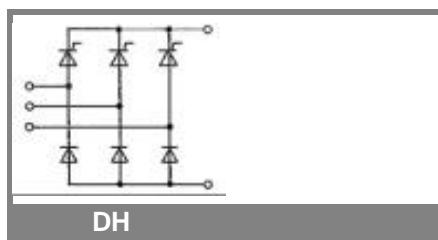
Features

- Terminal height 17 mm
- Chips soldered directly to isolated substrate

Typical Applications

- Input Bridge Rectifier for
- AC/DC motor control
- power supply

| | | | |
|----------------------------------|---|---|--|
| V_{RSM} V 1700 | V_{RRM}, V_{DRM} V 1600 | $I_D = 240 \text{ A (full conduction)}$ $(T_c = 85^\circ\text{C})$ SEMiX 241DH16s | |
| I_D | $T_c = 85^\circ\text{C}$ $T_c = 100^\circ\text{C}$ | 240 200 | A A |
| I_{TSM}, I_{FSM} | $T_{vj} = 25^\circ\text{C}; 10 \text{ ms}$ $T_{vj} = 130^\circ\text{C}; 10 \text{ ms}$ | 2250 1900 | A A |
| i^2t | $T_{vj} = 25^\circ\text{C}; 8,3 \dots 10 \text{ ms}$ $T_{vj} = 130^\circ\text{C}; 8,3 \dots 10 \text{ ms}$ | 25300 18000 | A^2s A^2s |
| V_T $V_{T(TO)}$ | $T_{vj} = 25^\circ\text{C}; I_T = 300$ $T_{vj} = 130^\circ\text{C};$ | max. 1,9 max. 0,85 | V V |
| r_T | $T_{vj} = 130^\circ\text{C}$ | max. 4 | $\text{m}\Omega$ |
| I_{DD}, I_{RD} | $T_{vj} = 130^\circ\text{C}; V_{DD} = V_{DRM}; V_{RD} = V_{RRM}$ | max. 24 | mA |
| t_{gd} t_{gr} | $T_{vj} = 25^\circ\text{C}; I_G = 1 \text{ A}; di_G/dt = 1 \text{ A}/\mu\text{s}$ $V_D = 0,67 \cdot V_{DRM}$ | 1 2 | μs μs |
| $(dv/dt)_{cr}$ $(di/dt)_{cr}$ | $T_{vj} = 130^\circ\text{C}$ $T_{vj} = 130^\circ\text{C}; f = 50 \text{ Hz}$ | max. 1000 max. 100 | $\text{V}/\mu\text{s}$ $\text{A}/\mu\text{s}$ |
| t_q | $T_{vj} = 130^\circ\text{C}; \text{typ.}$ | 150 | μs |
| I_H | $T_{vj} = 25^\circ\text{C}; \text{typ. / max.}$ | 150 / 250 | mA |
| I_L | $T_{vj} = 25^\circ\text{C}; R_G = 33$ | 300 / 600 | mA |
| V_{GT} | $T_{vj} = 25^\circ\text{C}; \text{d.c.}$ | min. 3 | V |
| I_{GT} | $T_{vj} = 25^\circ\text{C}; \text{d.c.}$ | min. 150 | mA |
| V_{GD} | $T_{vj} = 130^\circ\text{C}; \text{d.c.}$ | max. 0,25 | V |
| I_{GD} | $T_{vj} = 130^\circ\text{C}; \text{d.c.}$ | max. 6 | mA |
| $R_{th(j-c)}$ | per thyristor | 0,32 | K/W |
| $R_{th(c-s)}$ | per diode | 0,32 | K/W |
| $R_{th(c-s)}$ | per module | 0,04 | K/W |
| T_{vj} | | - 40 ... + 130 | °C |
| T_{stg} | | - 40 ... + 125 | °C |
| V_{isol} | a. c. 50 Hz; r.m.s.; 1 s / 1 min. | 4800 (4000) | V |
| M_s | (min./max.) | 3/5 | Nm |
| M_t | (min./max.) | 2,5/5 | Nm |
| a | | 5 * 9,81 | m/s^2 |
| m | | 300 | g |
| Case | SEMiX13s | | |



SEMiX 241DH...

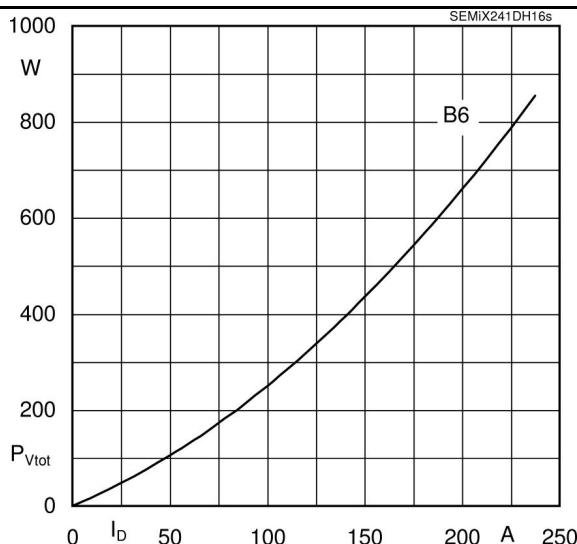


Fig. 4L Power dissipation per module vs. direct current

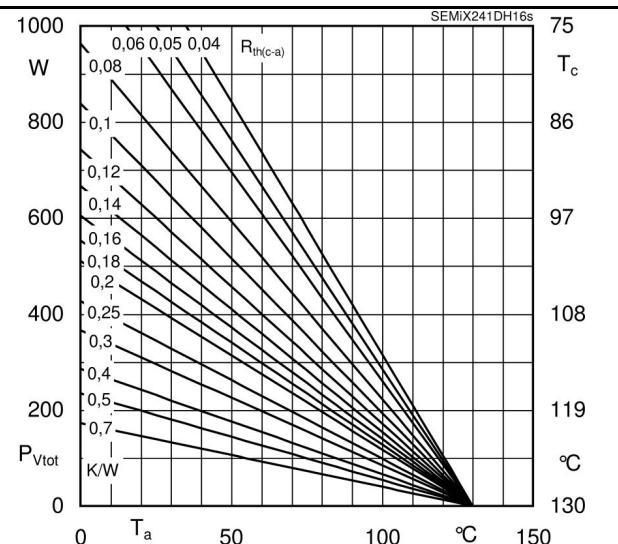


Fig. 4R Power dissipation per module vs. case temperature

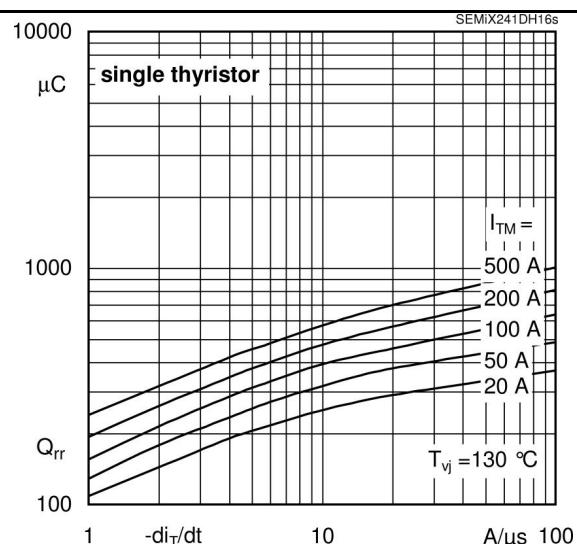


Fig. 5 Recovered charge vs current decrease

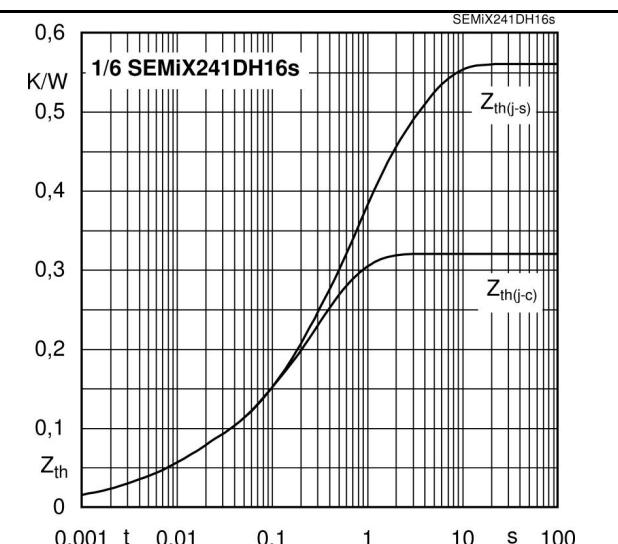


Fig. 6 Transient thermal impedance

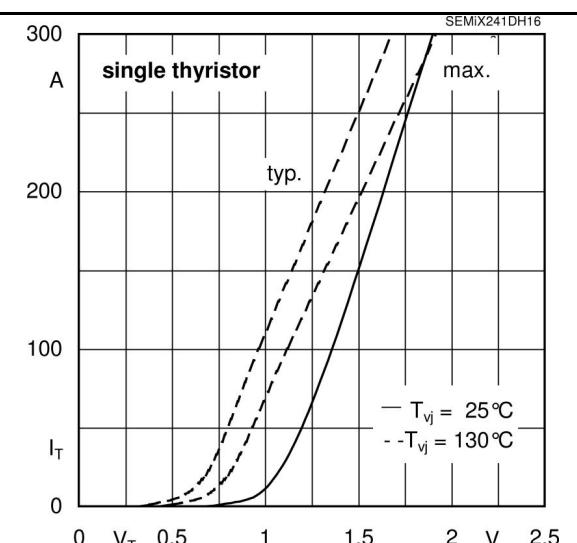


Fig. 7 On-state characteristics

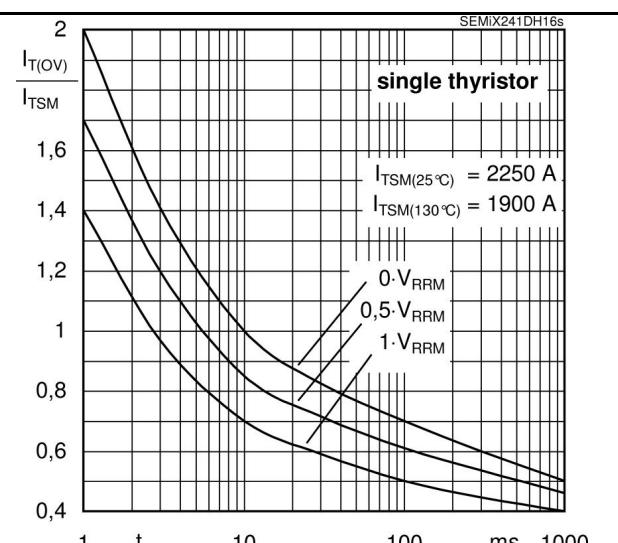


Fig. 8 Surge overload current vs. time

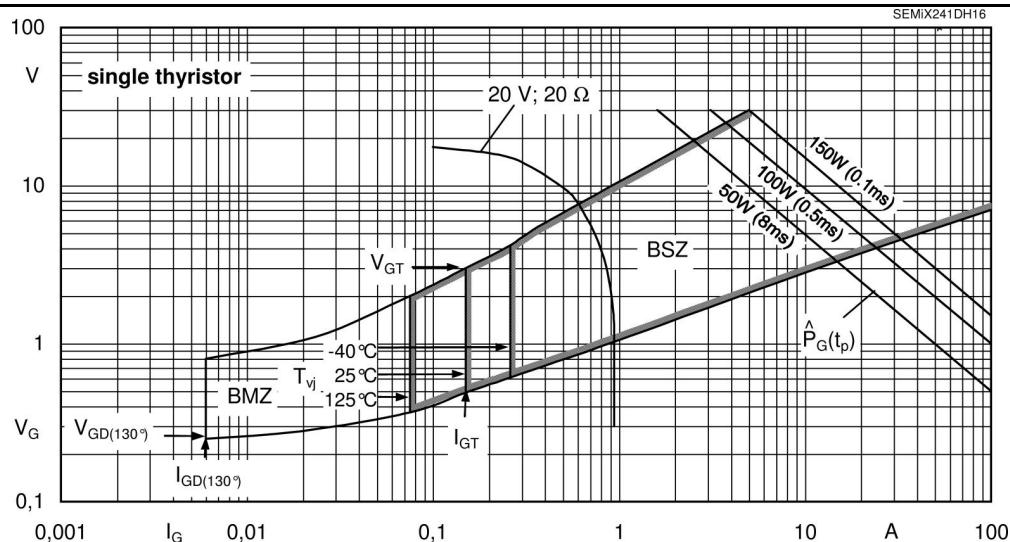
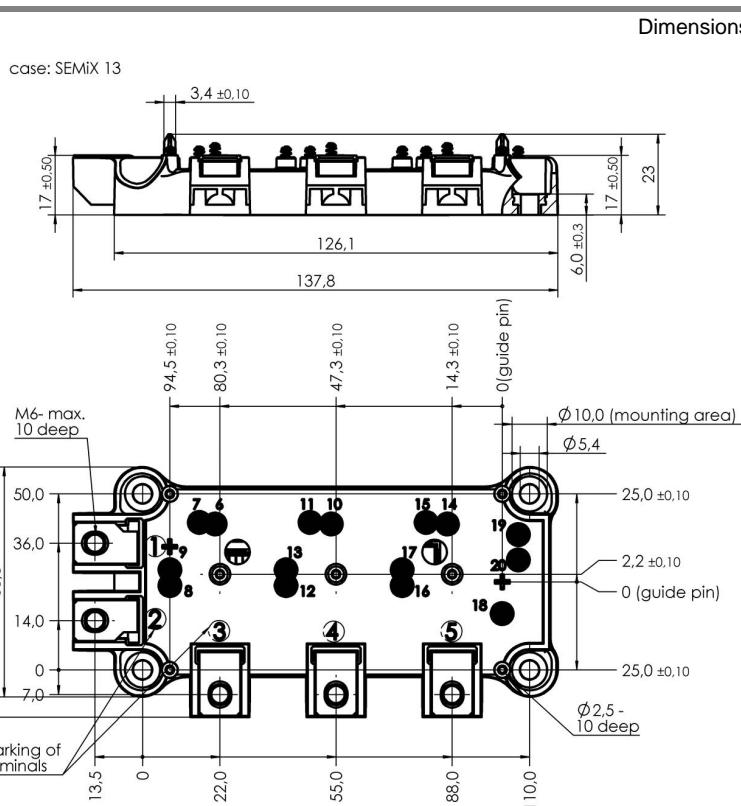


Fig.9 Gate trigger characteristics



Case SEMiX13s

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