# SEMiX501D17Fs

**SEMiX® 13**

**Bridge Rectifier Module (uncontrolled)**

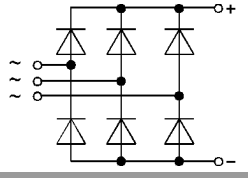
**SEMiX501D17Fs**

## Features

- Terminal height 17 mm
- Chips soldered directly to isolated substrate
- UL recognised file no. E63532

## Typical Applications*

- Fast Input Bridge Rectifier for AC/DC motor control
- Power supply
- High frequency applications



**D**

| Absolute Maximum Ratings | | | | |
|---|---|---|---|---|
| **Symbol** | **Conditions** | | **Values** | **Unit** |
| **Rect. Diode** | | | | |
| $I_D$ | $T_j$ = 150 °C sinus 180° | $T_c$ = 85 °C | 494 | A |
| | | $T_c$ = 100 °C | 417 | A |
| $I_{FSM}$ | 10 ms | $T_j$ = 25 °C | 2740 | A |
| | | $T_j$ = 150 °C | 2140 | A |
| $i^2t$ | 10 ms | $T_j$ = 25 °C | 37538 | $A^2s$ |
| | | $T_j$ = 150 °C | 22898 | $A^2s$ |
| $V_{RSM}$ | | | 1700 | V |
| $V_{RRM}$ | | | 1700 | V |
| $T_j$ | | | -40 ... 150 | °C |
| **Module** | | | | |
| $T_{stg}$ | | | -40 ... 125 | °C |
| $V_{isol}$ | AC sinus 50Hz | 1 min | 4000 | V |
| | | 1 s | 4800 | V |

| Characteristics | | | | | | |
|---|---|---|---|---|---|---|
| **Symbol** | **Conditions** | | **min.** | **typ.** | **max.** | **Unit** |
| **Rectifier Diode** | | | | | | |
| $V_F$ | $T_j$ = 25 °C, $I_F$ = 300 A, chiplevel | | | | 1.90 | V |
| $V_{(TO)}$ | $T_j$ = 125 °C, chiplevel | | | | 1.1 | V |
| $r_T$ | $T_j$ = 125 °C, chiplevel | | | | 2.7 | mΩ |
| $I_{RD}$ | $T_j$ = 125 °C, $V_{RD}$ = $V_{RRM}$ | | | | 14.4 | mA |
| $R_{th(j-c)}$ | sin. 180 | per diode | | | 0.165 | K/W |
| | | | | | | K/W |
| **Module** | | | | | | |
| $R_{CC'+EE'}$ | res., terminal-chip | $T_C$ = 25 °C | | 0.7 | | mΩ |
| | | $T_C$ = 125 °C | | 1 | | mΩ |
| $R_{th(c-s)}$ | per chip | | | | | K/W |
| | per module | | | 0.04 | | K/W |
| $M_s$ | to heat sink (M5) | | 3 | | 5 | Nm |
| $M_t$ | to terminals (M6) | | 2.5 | | 5 | Nm |
| a | | | | | 5 * 9,81 | $m/s^2$ |
| w | | | | | 350 | g |
| **Temperature Sensor** | | | | | | |
| $R_{100}$ | $T_c$=100°C ($R_{25}$=5 kΩ) | | | 493 ± 5% | | Ω |
| $B_{100/125}$ | $R_{(T)}=R_{100}\exp[B_{100/125}(1/T-1/T_{100})]$; T[K]; | | | 3550 ±2% | | K |

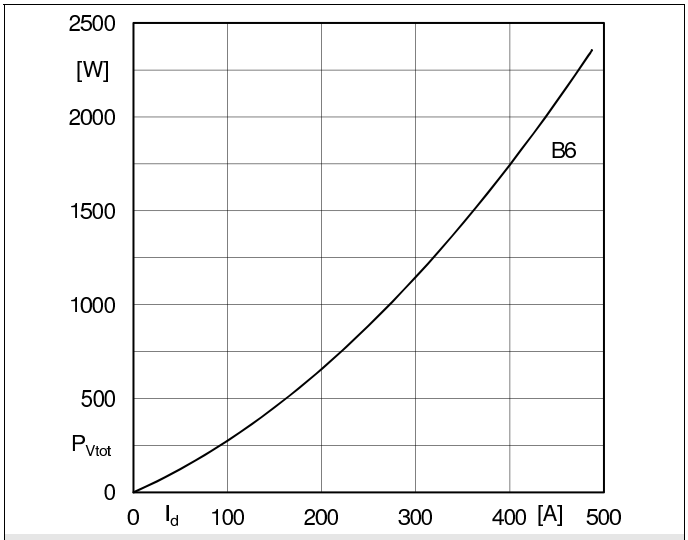



Fig. 4L: Power dissipation per module vs. direct current

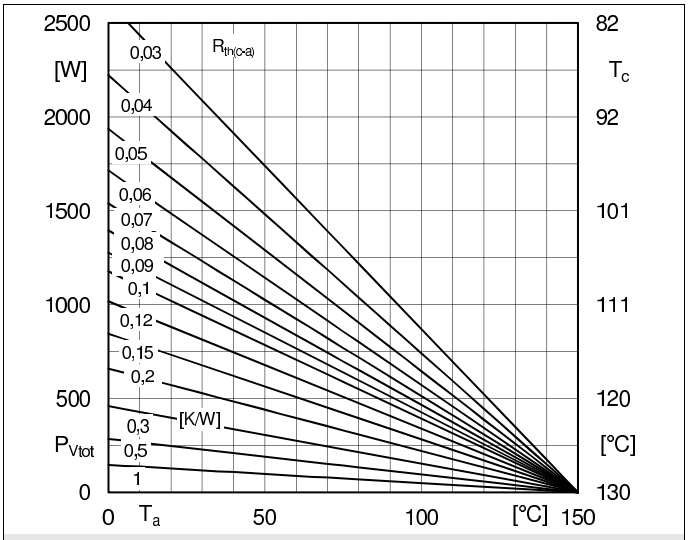



Fig. 4R: Power dissipation per module vs. case temperature

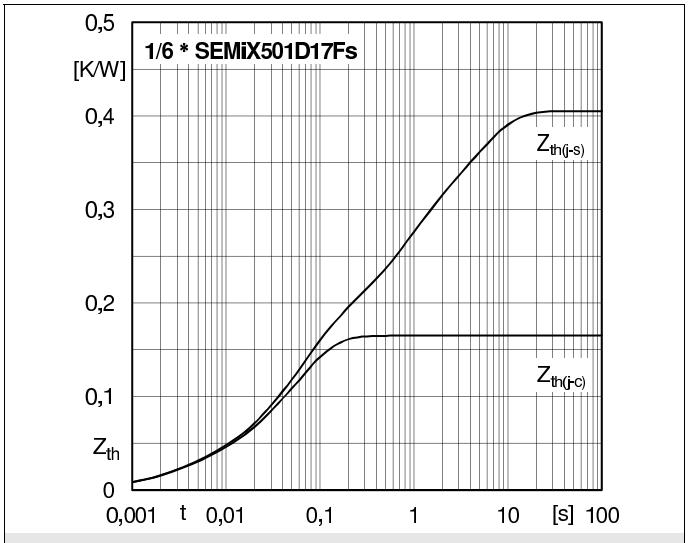



Fig. 6: Transient thermal impedance vs. time

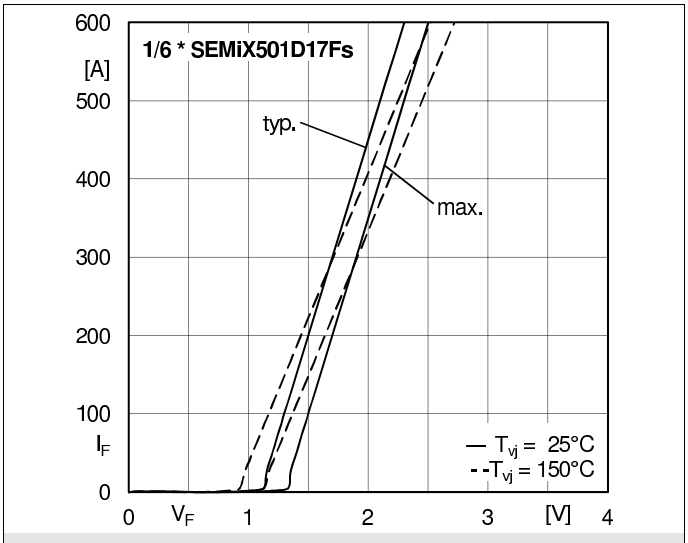



Fig. 7: On-state characteristics

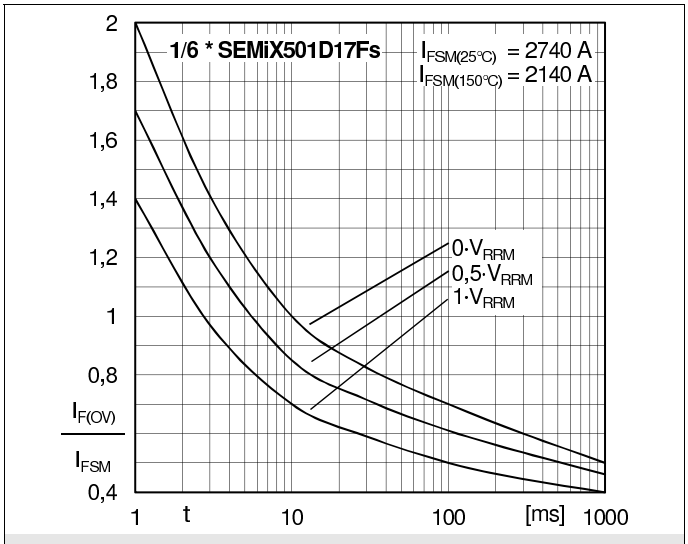
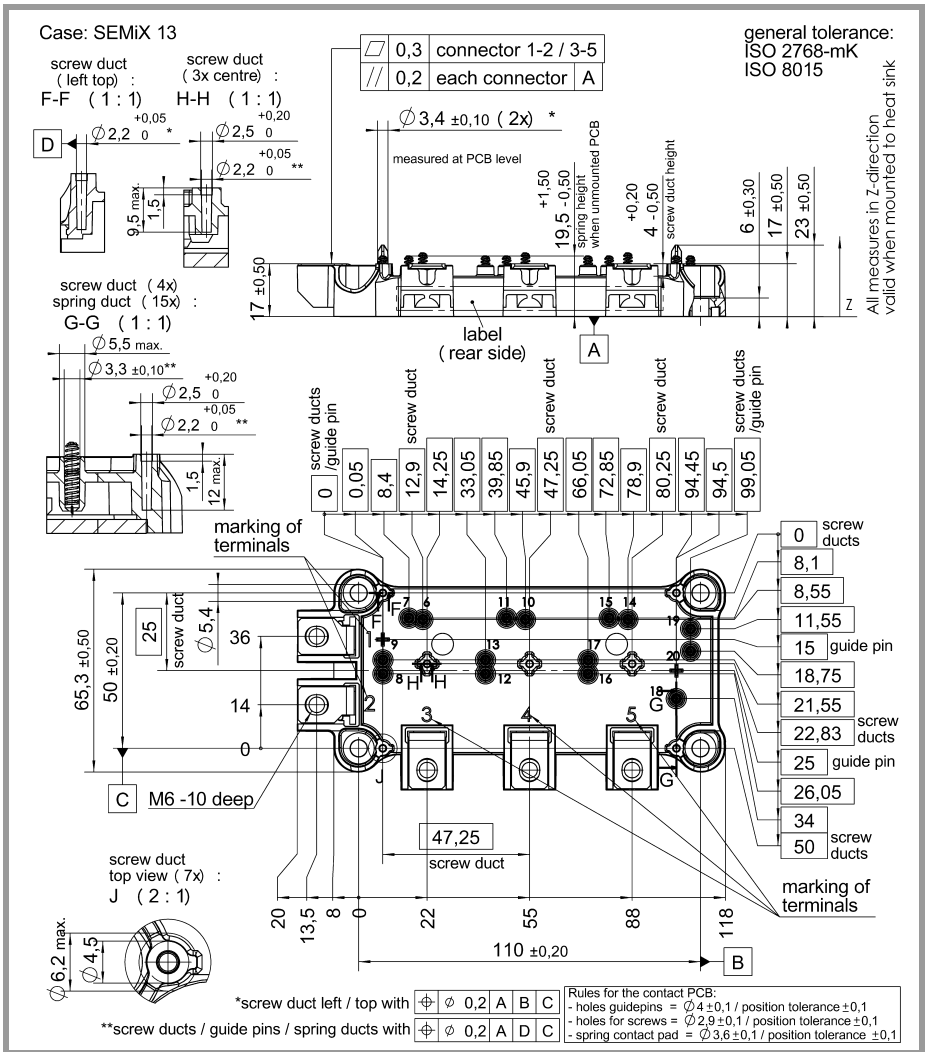



Fig. 8: Surge overload current vs. time

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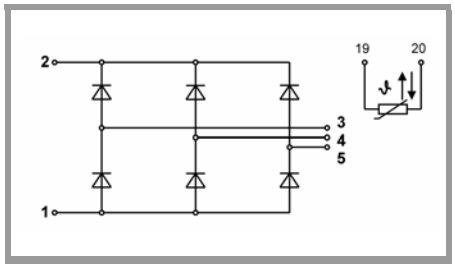


spring configuration

This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX

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