SEMiX501D17Fs

SEMiX® 13

Bridge Rectifier Module (uncontrolled)

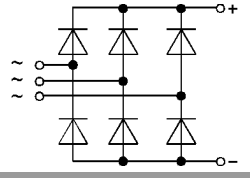
SEMiX501D17Fs

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

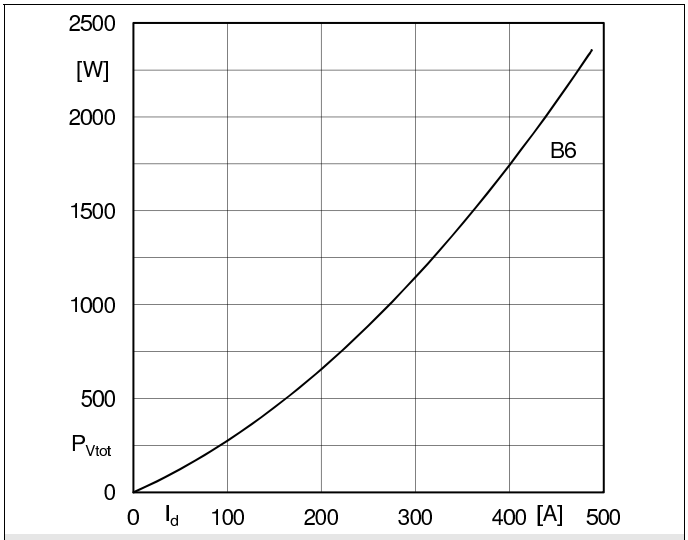


Fig. 4L: Power dissipation per module vs. direct current

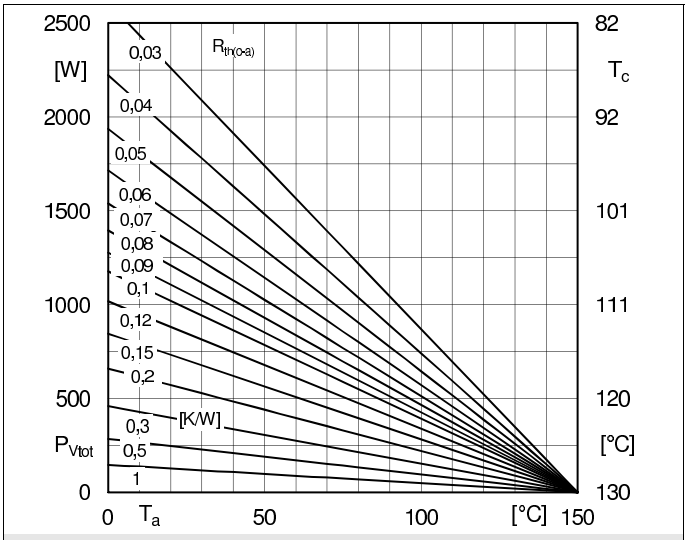


Fig. 4R: Power dissipation per module vs. case temperature

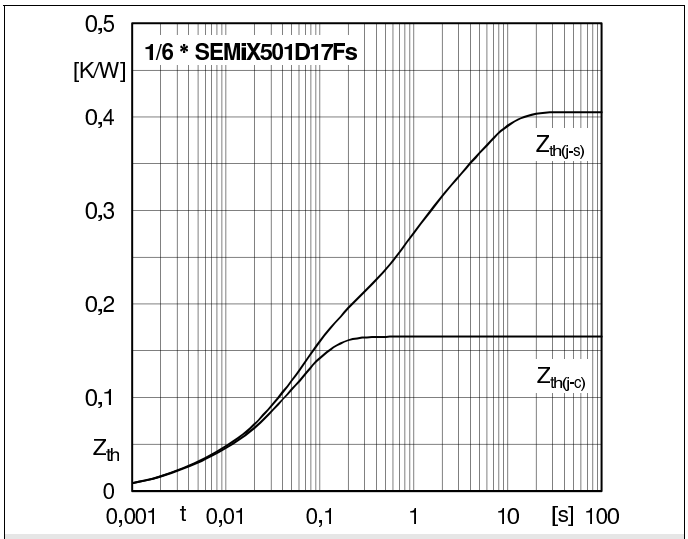


Fig. 6: Transient thermal impedance vs. time

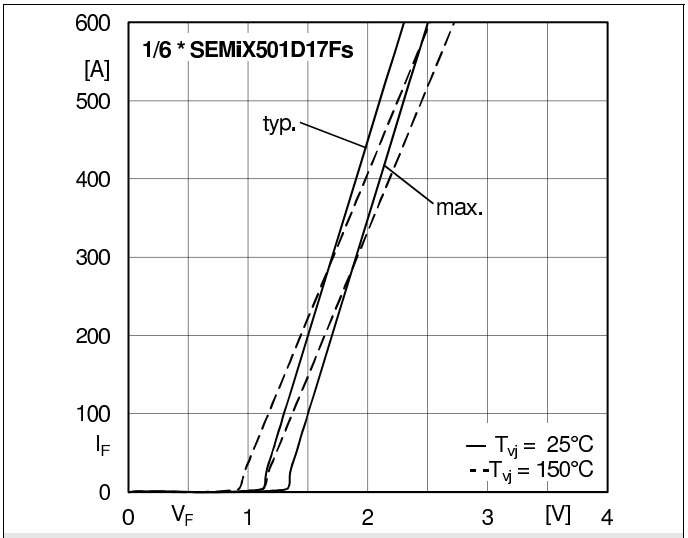


Fig. 7: On-state characteristics

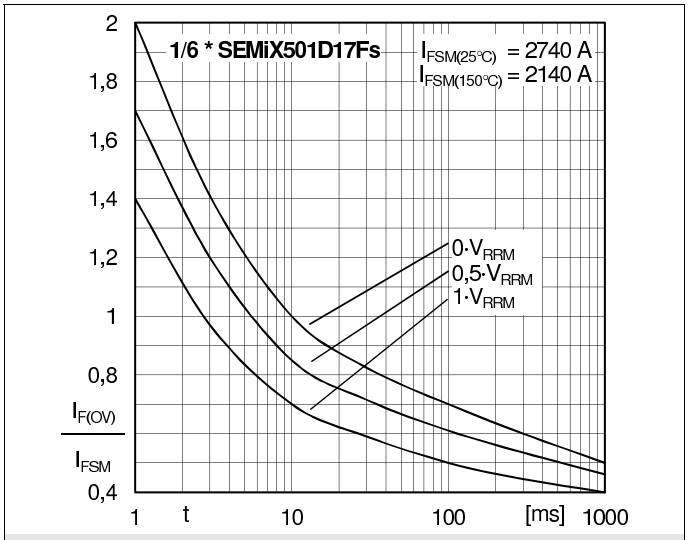
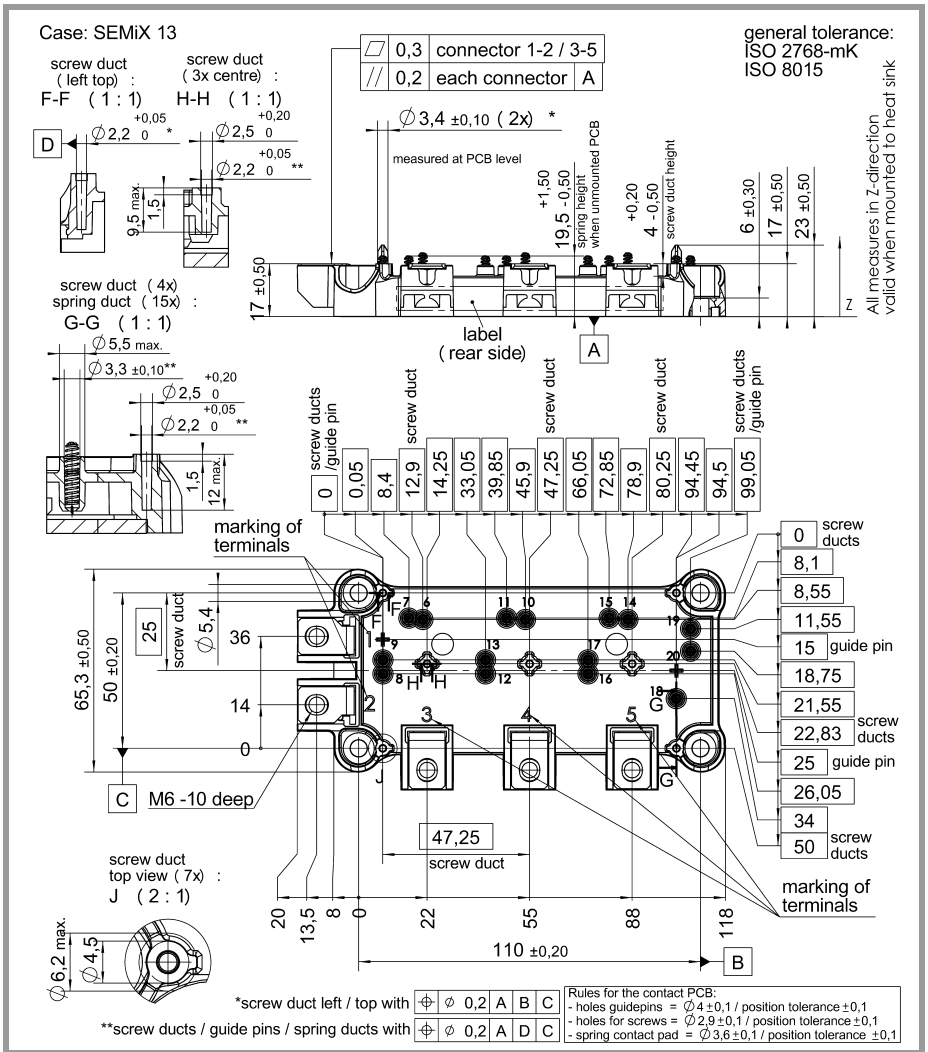
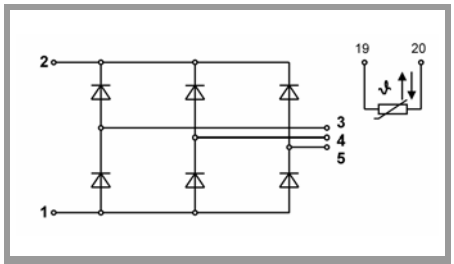


Fig. 8: Surge overload current vs. time



SEMiX 13



spring configuration

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

* 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 staff.