

# SEMiX501D17Fs



SEMiX® 13

## SEMiX501D17Fs

### Features

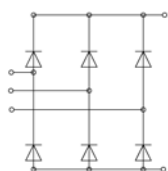
- Terminal height 17 mm
- Chips soldered directly to isolated substrate
- UL recognised file no. E63532

### Typical Applications\*

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

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

Characteristics						
Symbol	Conditions		min.	typ.	max.	Unit
<b>Rectifier Diode</b>						
$V_F$	$T_j = 25\text{ °C}$ , $I_F = 300\text{ A}$ , chiplevel				1.90	V
$V_{(TO)}$	$T_j = 125\text{ °C}$ , chiplevel				1.10	V
$r_T$	$T_j = 125\text{ °C}$ , chiplevel				2.7	mΩ
$I_{RD}$	$T_j = 125\text{ °C}$ , $V_{RD} = V_{RRM}$				14.4	mA
$R_{th(j-c)}$	sin. 180	per diode			0.165	K/W
						K/W
<b>Module</b>						
$R_{CC+EE'}$	measured per switch	$T_c = 25\text{ °C}$		0.7		mΩ
		$T_c = 125\text{ °C}$		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 <sup>2</sup>
$w$					350	g
<b>Temperature Sensor</b>						
$R_{100}$	$T_c = 100\text{ °C}$ ( $R_{25} = 5\text{ k}\Omega$ )			493 ± 5%		Ω
$B_{100/125}$	$R_{(T)} = R_{100} \exp[B_{100/125}(1/T - 1/T_{100})]$ ; T[K];			3550 ± 2%		K



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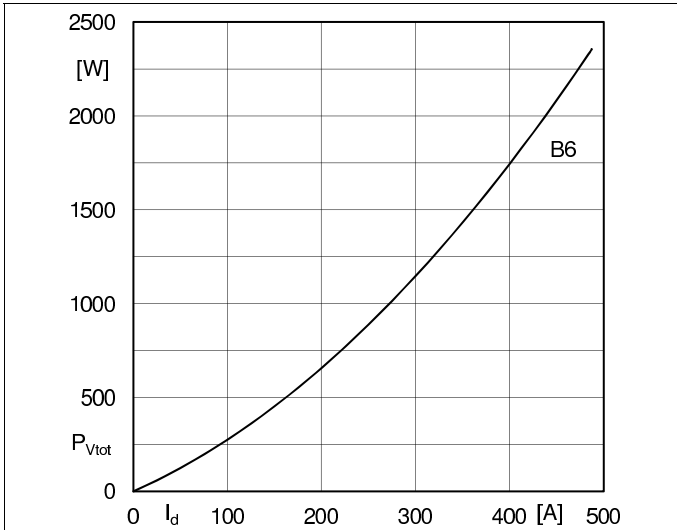


Fig. 4L: Power dissipation per module vs. direct current

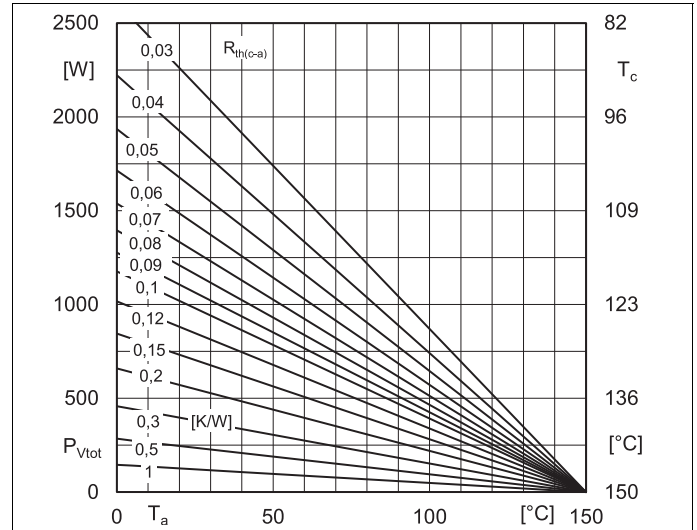


Fig. 4R: Power dissipation per module vs. case temperature

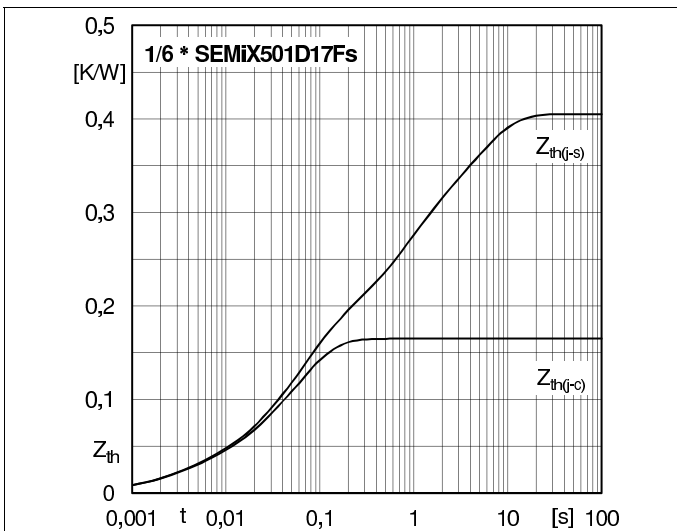


Fig. 6: Transient thermal impedance vs. time

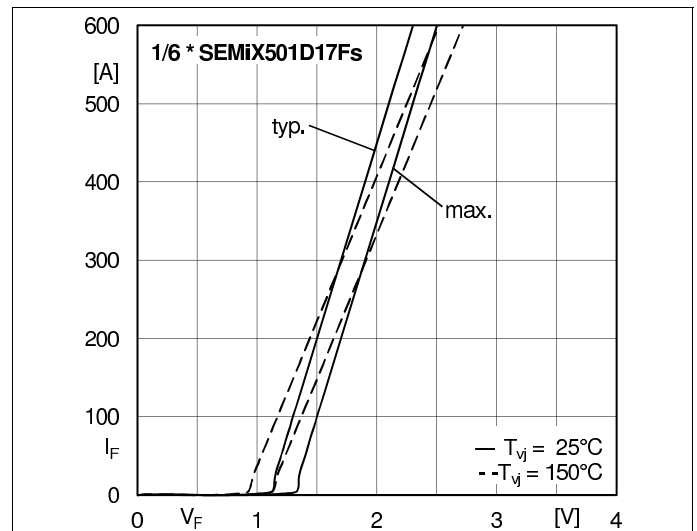


Fig. 7: On-state characteristics

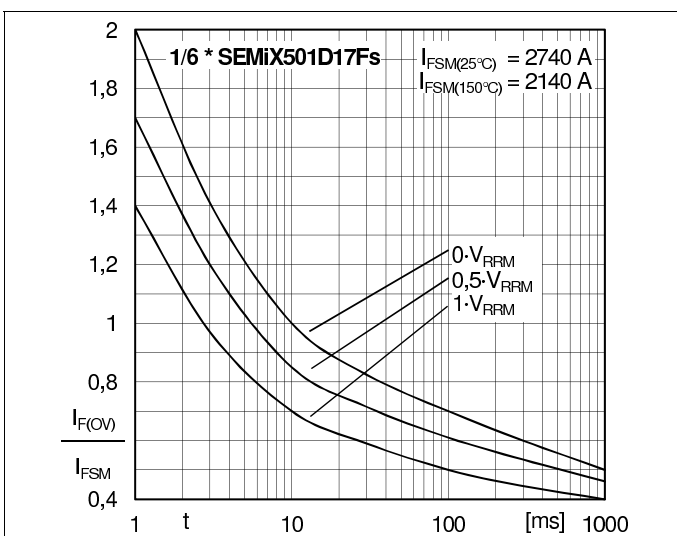
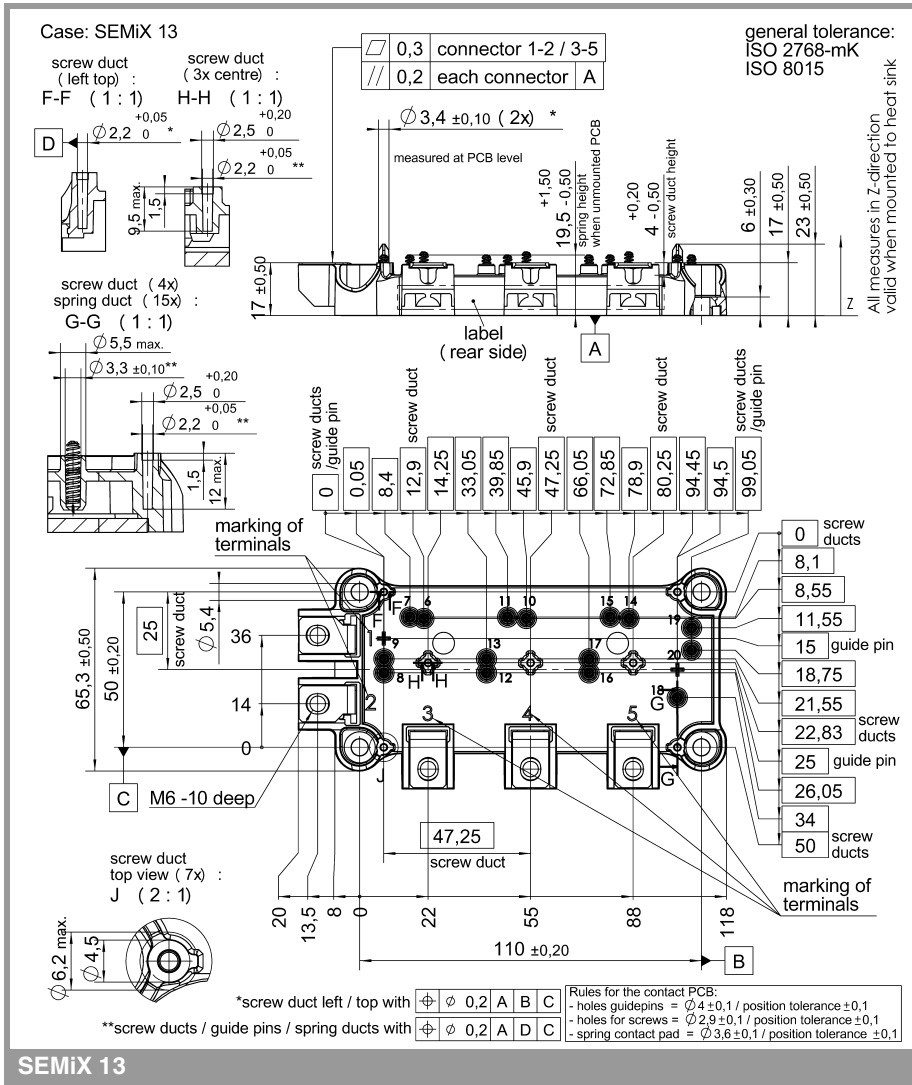
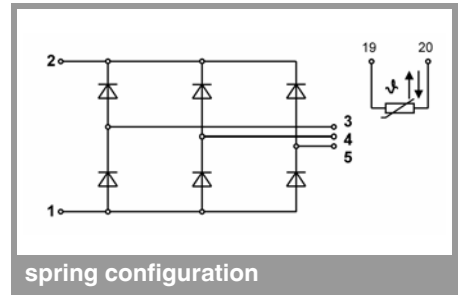


Fig. 8: Surge overload current vs. time

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

## \*IMPORTANT INFORMATION AND WARNINGS

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