



SEMiX® 13

SEMiX501D17Fs

Features

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

Typical Applications*

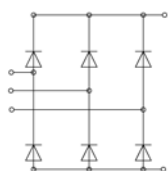
- Fast Input Bridge Rectifier for AC/DC motor control
- Power supply
- High frequency applications

Absolute Maximum Ratings

Symbol	Conditions		Values	Unit
Rect. Diode				
I _D	T _j = 150 °C	T _c = 85 °C	494	A
	sinus 180°	T _c = 100 °C	417	A
I _{FSM}	10 ms	T _j = 25 °C	2740	A
		T _j = 150 °C	2140	A
i ² t	10 ms	T _j = 25 °C	37538	A ² s
		T _j = 150 °C	22898	A ² s
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	$T_j = 25\text{ °C}$, $I_F = 300\text{ A}$, 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			0.165	K/W
					K/W
Module					
$R_{CC'+EE'}$	measured per switch	$T_c = 25\text{ °C}$ $T_c = 125\text{ °C}$	0.7 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}	$T_c = 100\text{ °C}$ ($R_{25} = 5\text{ kΩ}$)		493 ± 5%		Ω
$B_{100/125}$	$R_{(T)} = R_{100} \exp[B_{100/125}(1/T - 1/T_{100})]$; $T[K]$		3550 ±2%		K



D

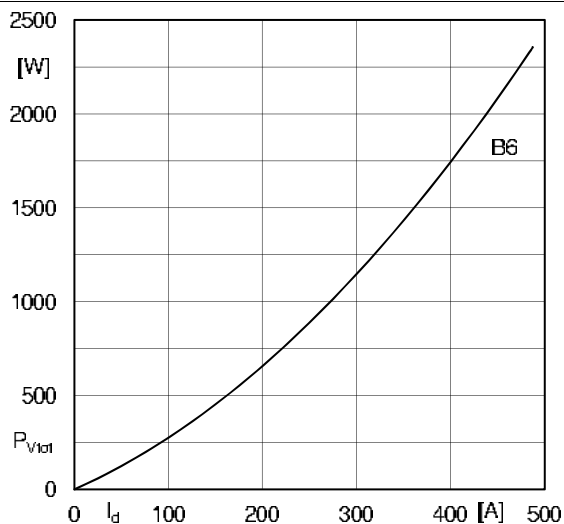


Fig. 4L: Power dissipation per module vs. direct current

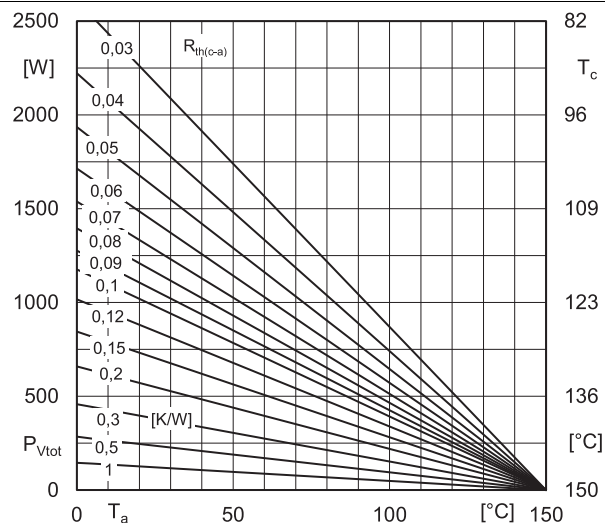


Fig. 4R: Power dissipation per module vs. case temperature

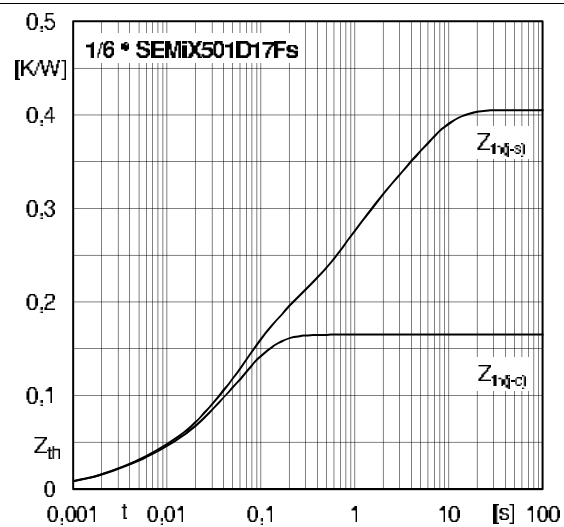


Fig. 6: Transient thermal impedance vs. time

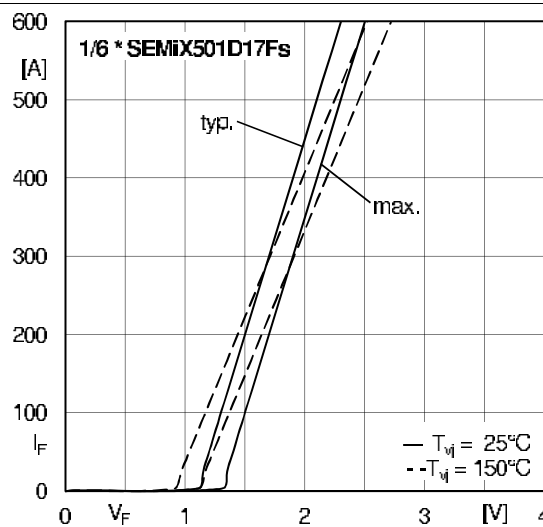


Fig. 7: On-state characteristics

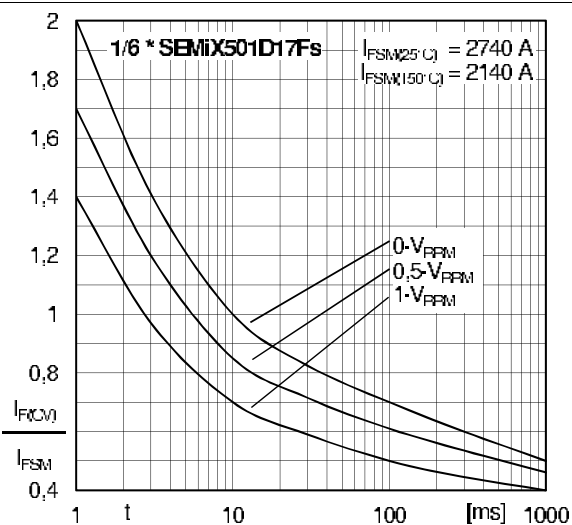


Fig. 8: Surge overload current vs. time

SEMiX501D17Fs

