

SEMiX302KD16s



SEMiX® 2s

Rectifier Diode Modules

SEMiX302KD16s

Features*

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

Typical Applications

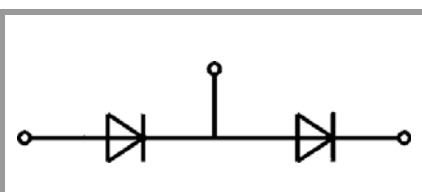
- Input Bridge Rectifier for AC/DC motor control
- Power supply

Absolute Maximum Ratings

Symbol	Conditions		Values	Unit
Recitifier Diode				
I _{FAV}	sin. 180°	T _c = 85 °C	300	A
	T _j = 130 °C	T _c = 100 °C	240	A
I _{FSM}	t _p = 10 ms	T _j = 25 °C	8500	A
		T _j = 130 °C	7500	A
i ² t	t _p = 10 ms	T _j = 25 °C	361000	A ² s
		T _j = 130 °C	281000	A ² s
V _{RSM}	T _j = 25 °C		1700	V
V _{RRM}	T _j = 25 °C		1600	V
T _j			-40 ... 130	°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
Diode						
V _F	T _J = 25 °C, I _F = 900 A				1.60	V
V _{F0}	T _J = 130 °C				0.85	V
r _F	T _J = 130 °C				1.1	mΩ
I _R	T _J = 130 °C, V _{RD} = V _{RRM}				15	mA
R _{th(j-c)}		per diode				K/W
						K/W
R _{th(j-c)}	sin. 180	per diode	0.091			K/W
						K/W
Module						
R _{th(c-s)}	per diode		0.045			K/W
	per module					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			250			g



KD

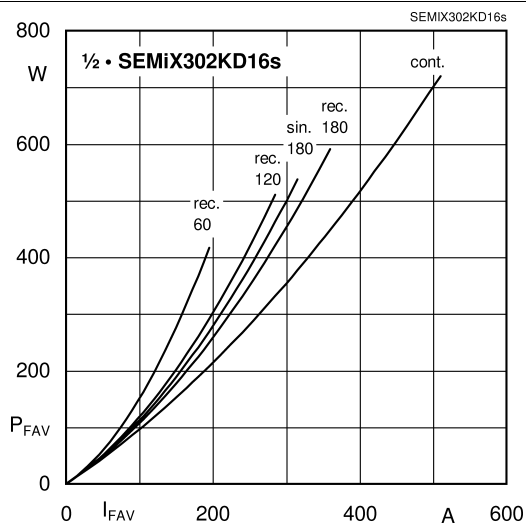


Fig. 1L: Power dissipation per thyristor/diode vs. on-state current

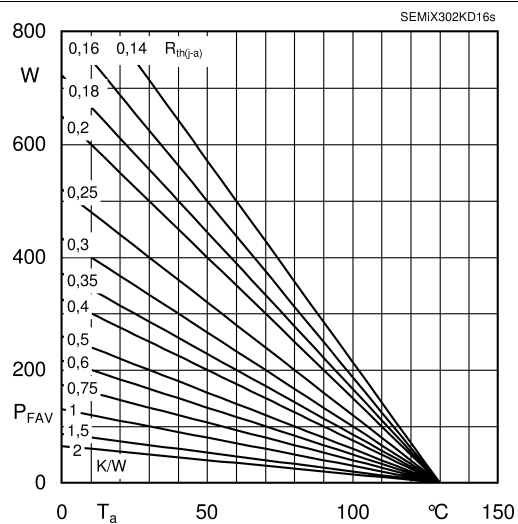


Fig. 1R: Power dissipation per thyristor/diode vs. ambient temperature

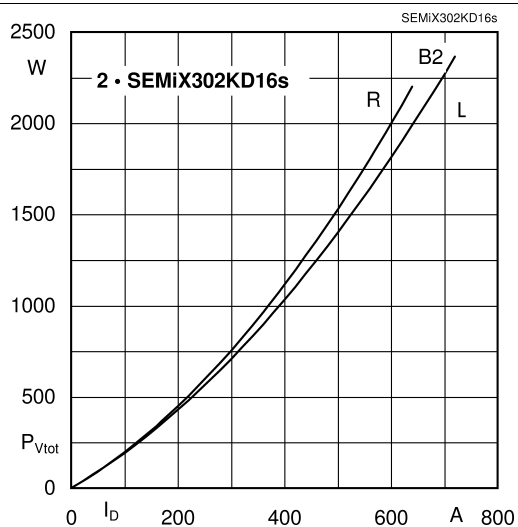


Fig. 3L: Power dissipation of two modules vs. direct current

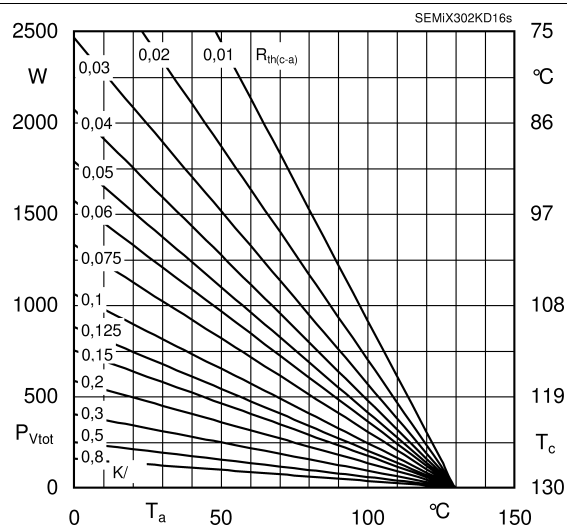


Fig. 3R: Power dissipation of two modules vs. case temperature

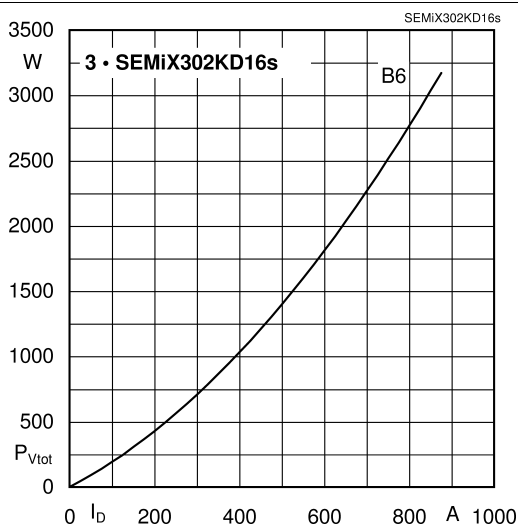


Fig. 4L: Power dissipation of three modules vs. direct current

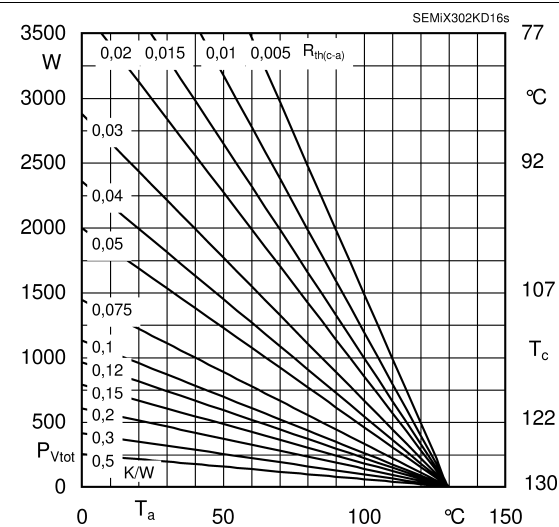


Fig. 4R: Power dissipation of three modules vs. case temperature

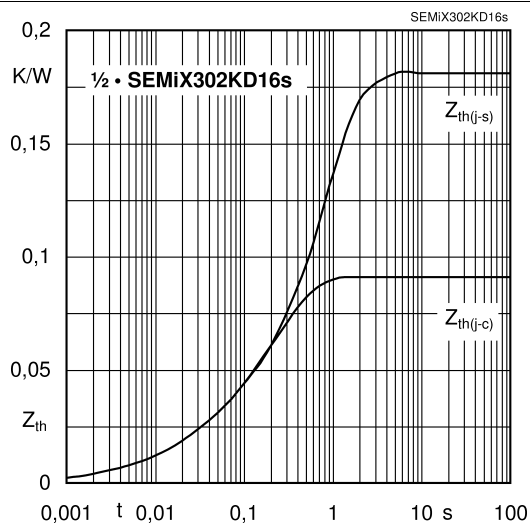


Fig. 6: Transient thermal impedance vs. time

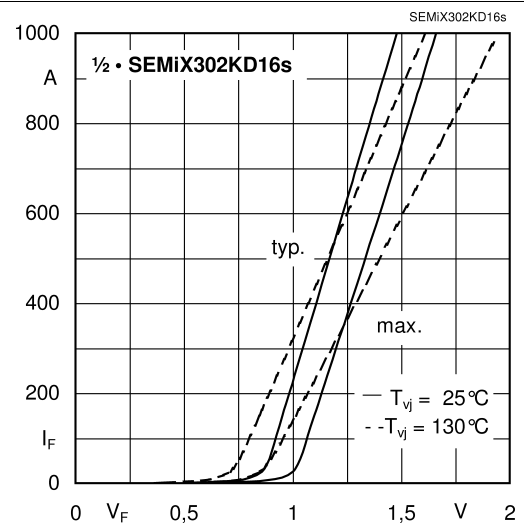


Fig. 7: On-state characteristics (chiplevel)

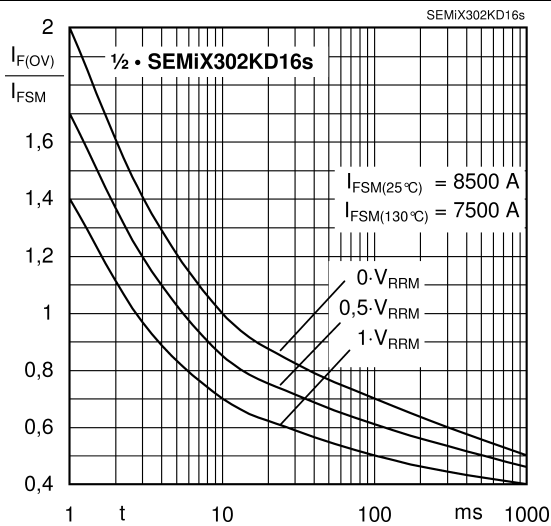
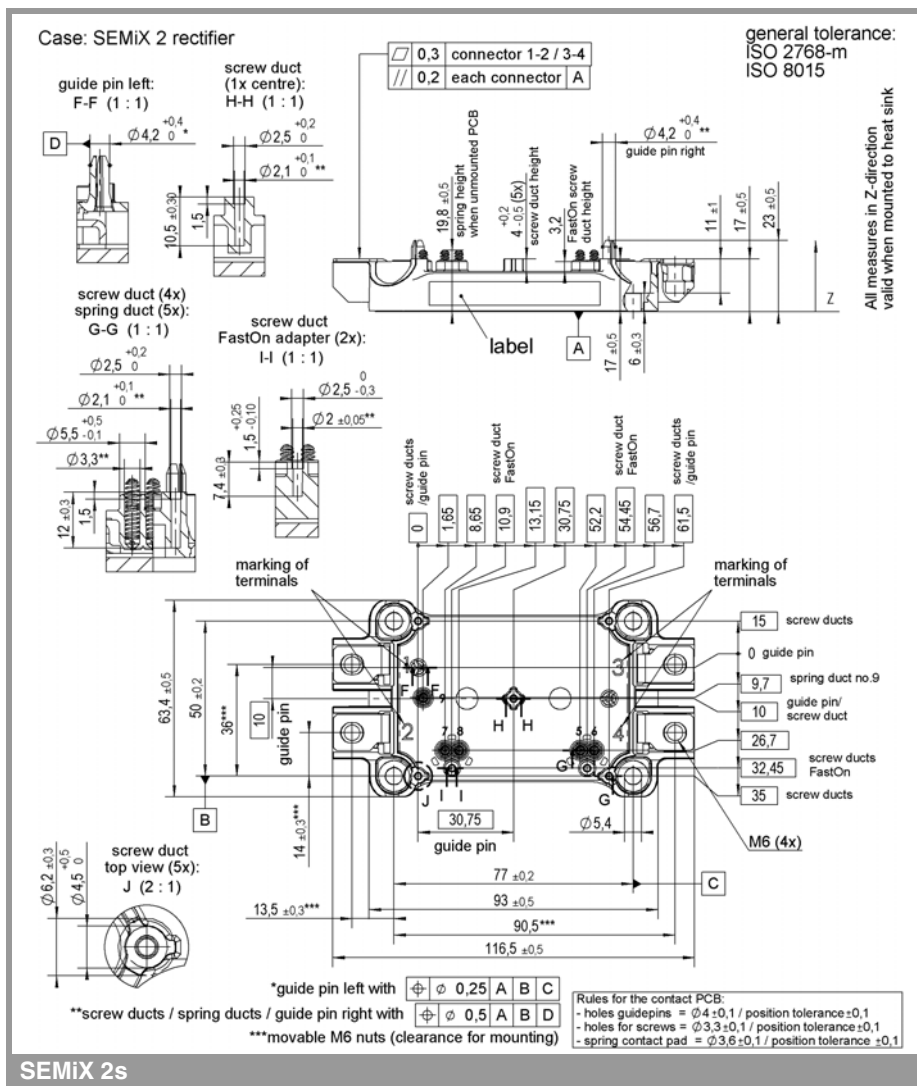
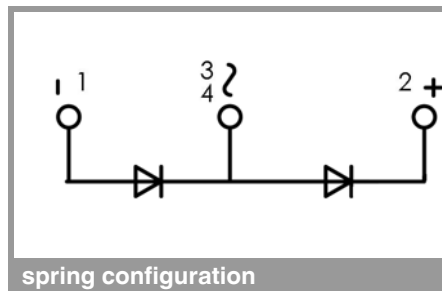


Fig. 8: Surge overload current vs. time

All measures in Z-direction
valid when mounted to heat sink



IMPORTANT INFORMATION AND WARNINGS

This is an electrostatic discharge sensitive device (ESDS) according to international standard IEC 61340.

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