SEMiX191KD16s



SEMiX® 1s

Rectifier Diode Modules

SEMiX191KD16s

Features*

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

Typical Applications

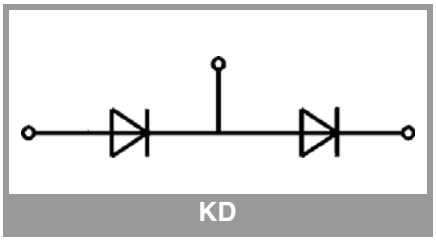
- Input Bridge Rectifier for AC/DC motor control
- Power supply

Absolute Maximum Ratings

Symbol	Conditions		Values	Unit
Recitifier Diode				
I_{FAV}	sin. 180°	T_c = 85 °C	190	A
	T_j = 130 °C	T_c = 100 °C	145	A
I_{FSM}	t_p = 10 ms	T_j = 25 °C	6000	A
		T_j = 130 °C	5000	A
i^2t	t_p = 10 ms	T_j = 25 °C	180000	A^2s
		T_j = 130 °C	125000	A^2s
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 = 500 A				1.50	V
V_{F0}	T_j = 130 °C				0.85	V
r_F	T_j = 130 °C				0.95	mΩ
I_R	T_j = 130 °C, V_{RD} = V_{RRM}				12	mA
$R_{th(j-c)}$		per diode				K/W
						K/W
$R_{th(j-c)}$	sin. 180	per diode			0.18	K/W
						K/W
Module						
$R_{th(c-s)}$	per diode					K/W
	per module			0.075		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				145		g



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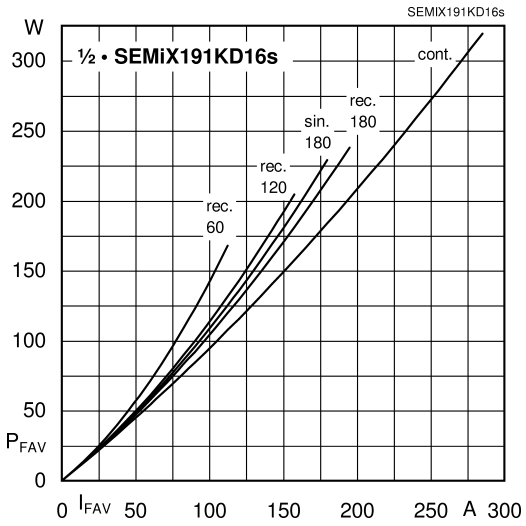

Fig. 1L: Power dissipation per thyristor/diode vs. on-state current

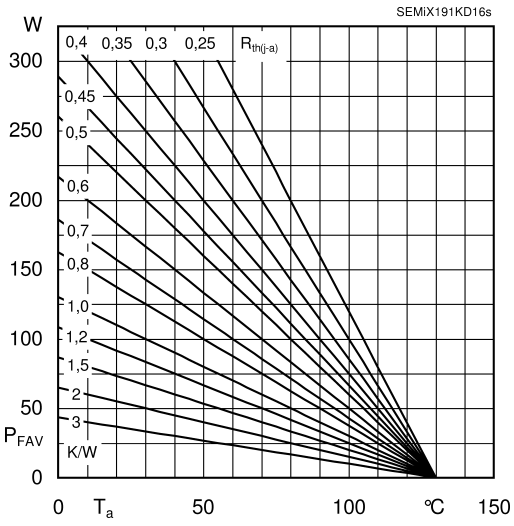

Fig. 1R: Power dissipation per thyristor/diode vs. ambient temperature

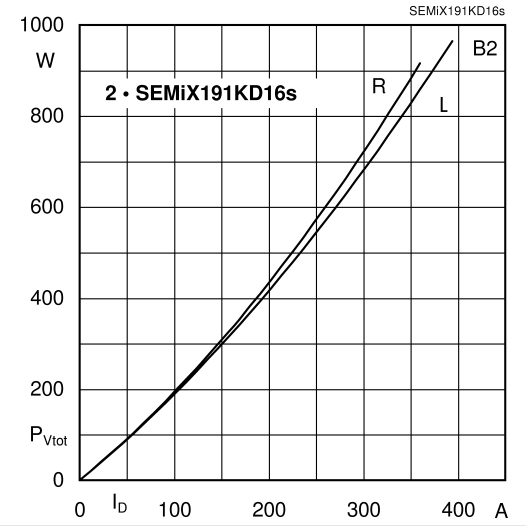

Fig. 3L: Power dissipation of two modules vs. direct current

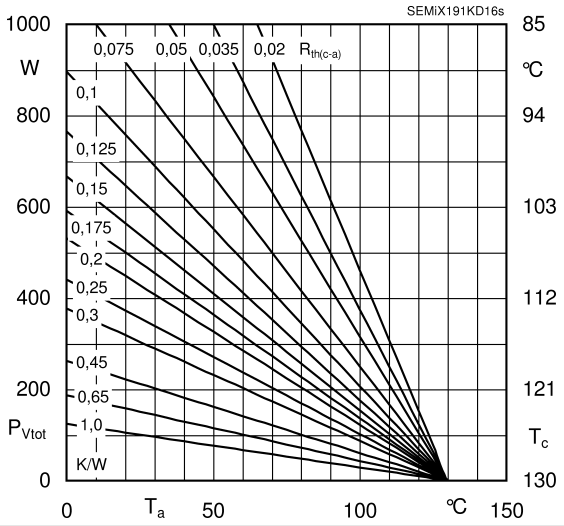

Fig. 3R: Power dissipation of two modules vs. case temperature

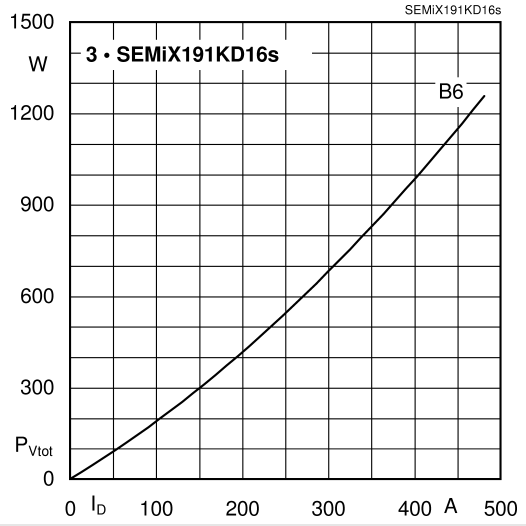

Fig. 4L: Power dissipation of three modules vs. direct current

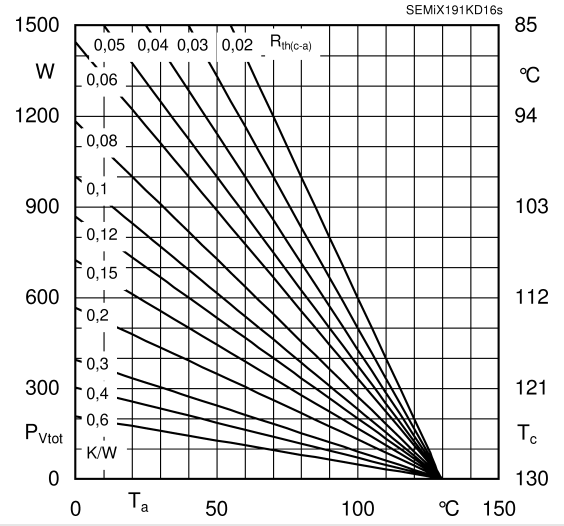

Fig. 4R: Power dissipation of three modules vs. case temperature

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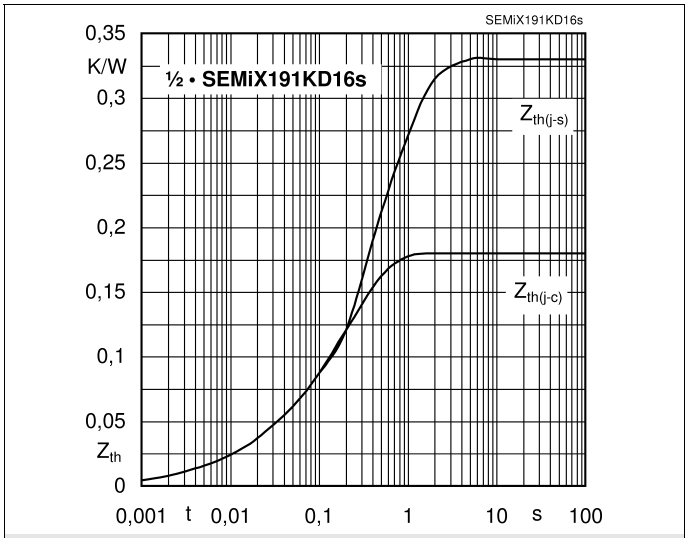


Fig. 6: Transient thermal impedance vs. time

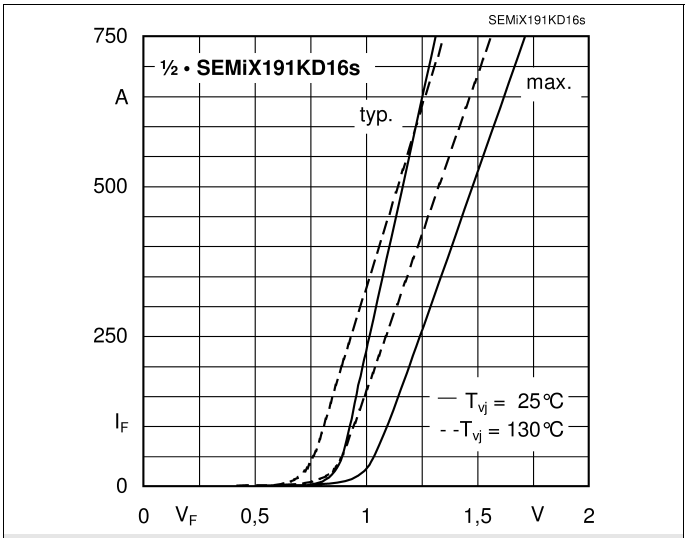


Fig. 7: On-state characteristics (chiplevel)

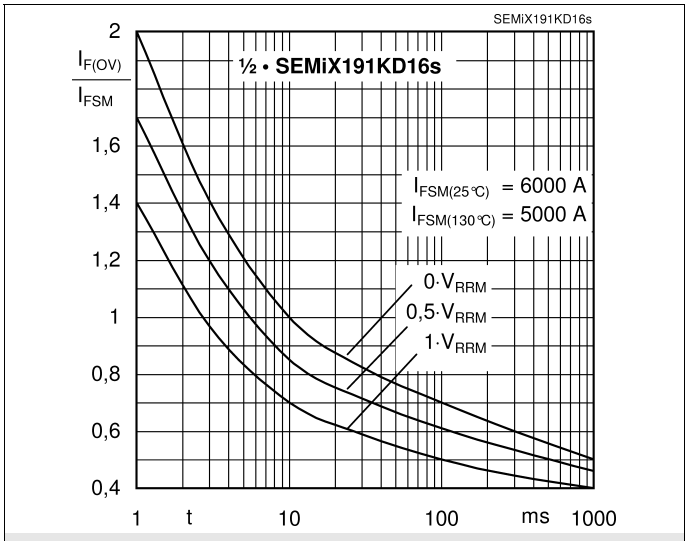
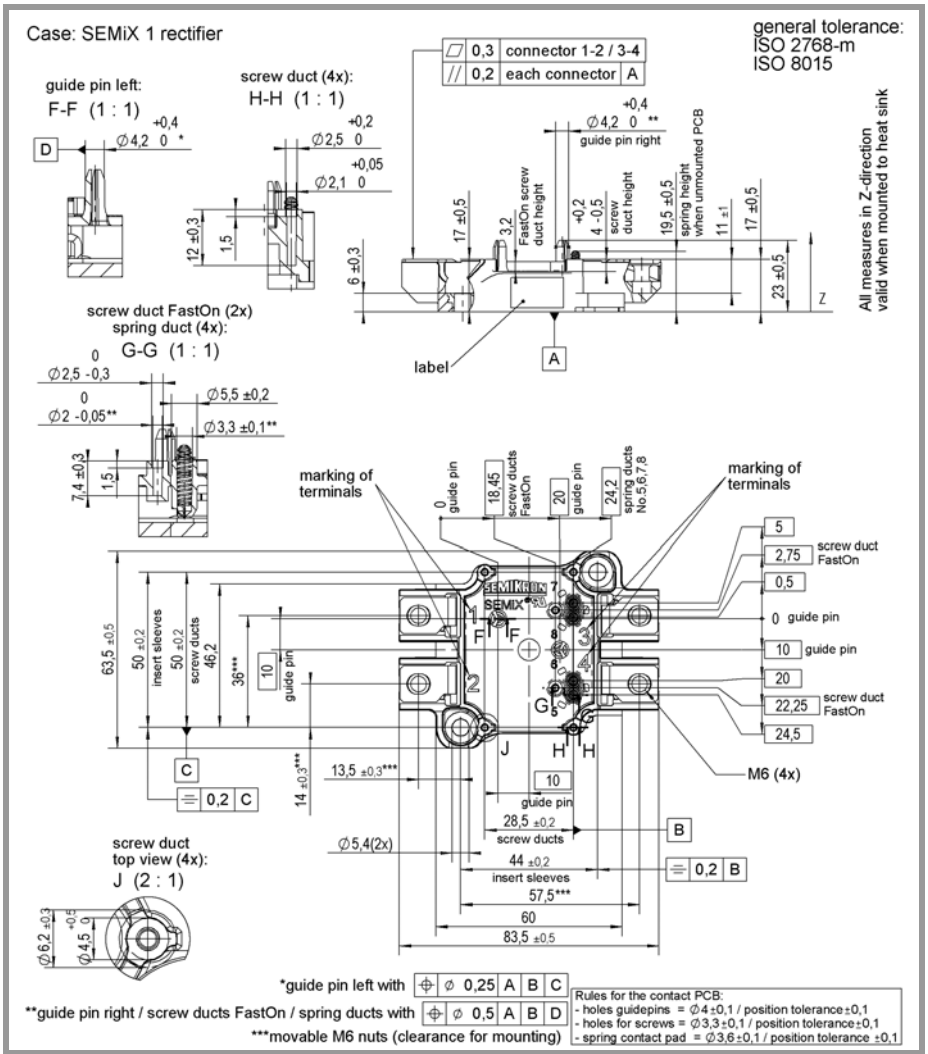


Fig. 8: Surge overload current vs. time



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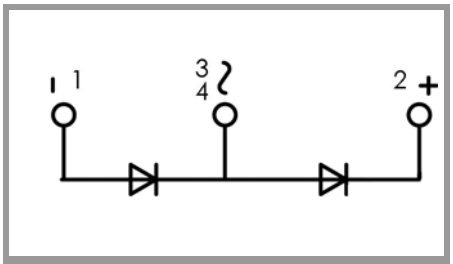

spring configuration

IMPORTANT INFORMATION AND WARNINGS

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

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