SEMiX191KD16s

SEMiX® 1s

Rectifier Diode Module
SEMiX191KD16s

Features

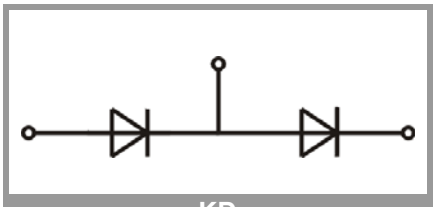
Terminal height 17 mm
Chips soldered directly to isolated substrate

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_c = 100 °C	145	A
I_{FSM}	10 ms	T_j = 25 °C	6000	A
		T_j = 130 °C	5000	A
i^2t	10 ms	T_j = 25 °C	180000	A^2s
		T_j = 130 °C	125000	A^2s
V_{RSM}			1700	V
V_{RRM}			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				1.5	V
$V_{(TO)}$	T_j = 130 °C				0.85	V
r_T	T_j = 130 °C				0.95	mΩ
I_{RD}	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 chip					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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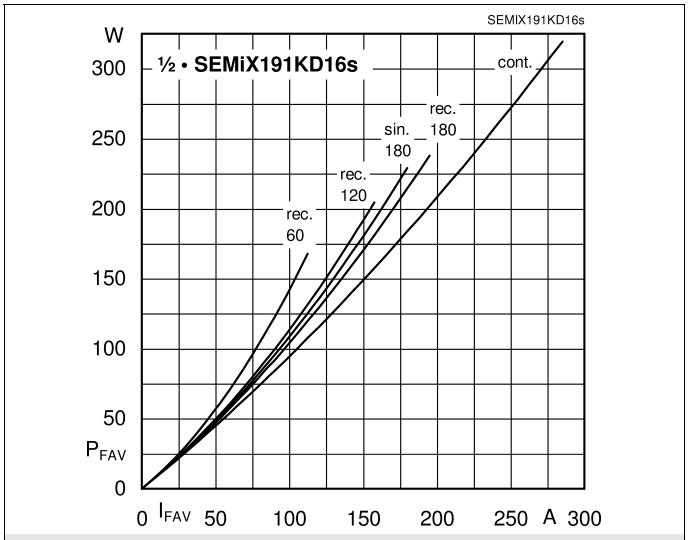


Fig. 1L: Power dissipation per thyristor/diode vs. on-state current

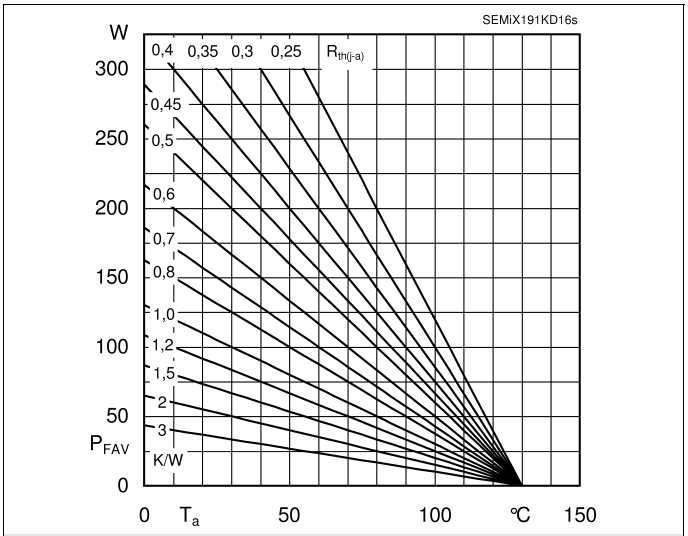


Fig. 1R: Power dissipation per thyristor/diode vs. ambient temperature

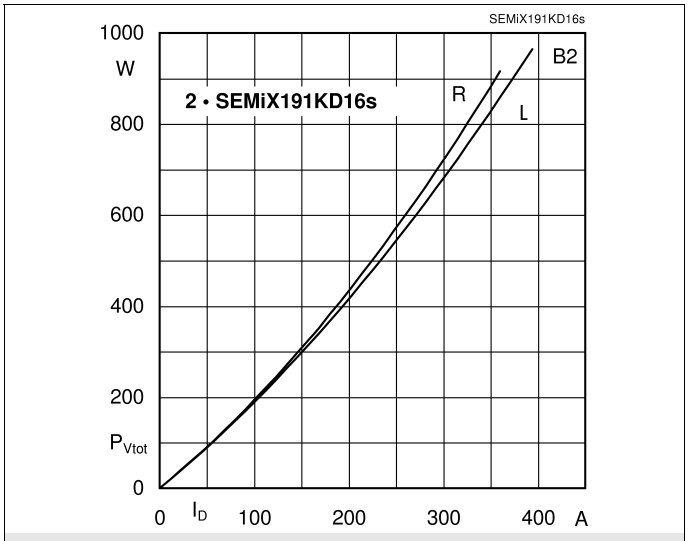


Fig. 3L: Power dissipation of two modules vs. direct current

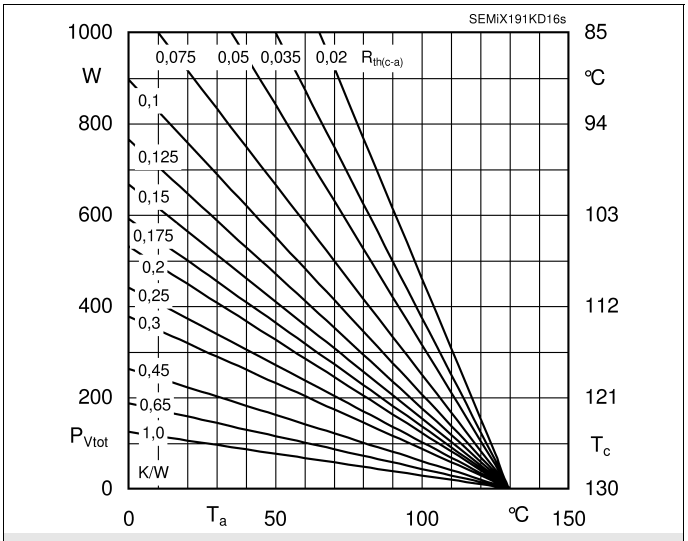


Fig. 3R: Power dissipation of two modules vs. case temperature

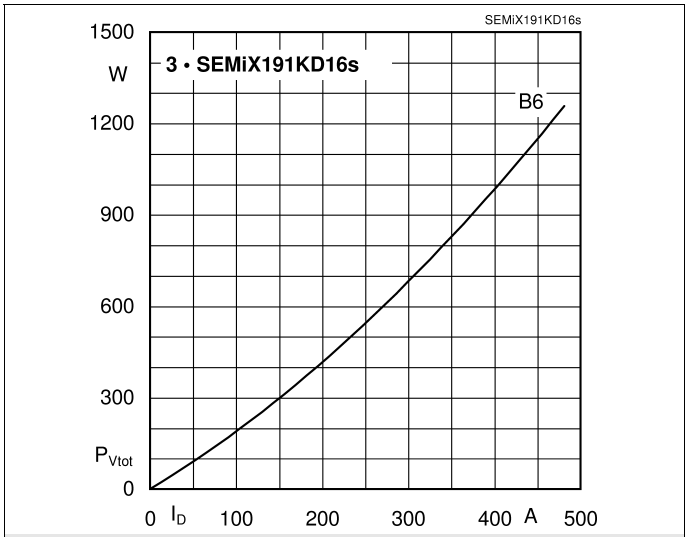


Fig. 4L: Power dissipation of three modules vs. direct current

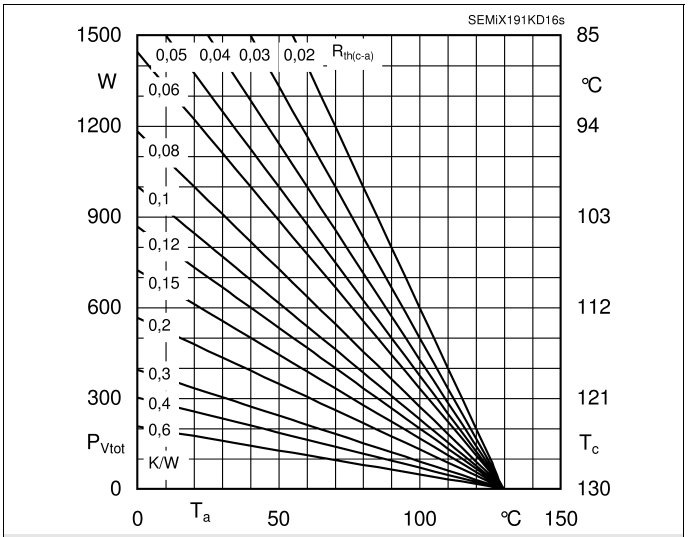


Fig. 4R: Power dissipation of three modules vs. case temperature

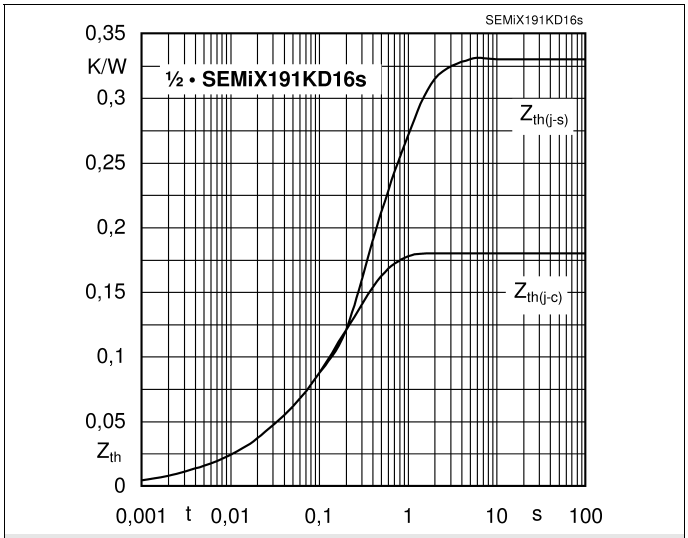


Fig. 6: Transient thermal impedance vs. time

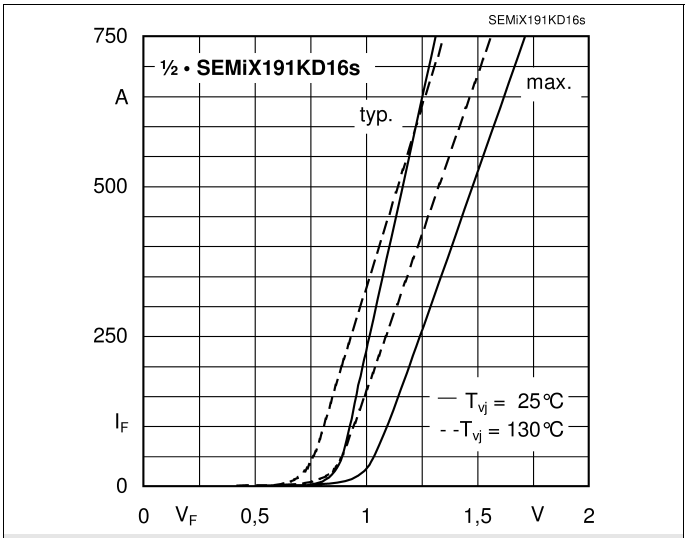


Fig. 7: On-state characteristics

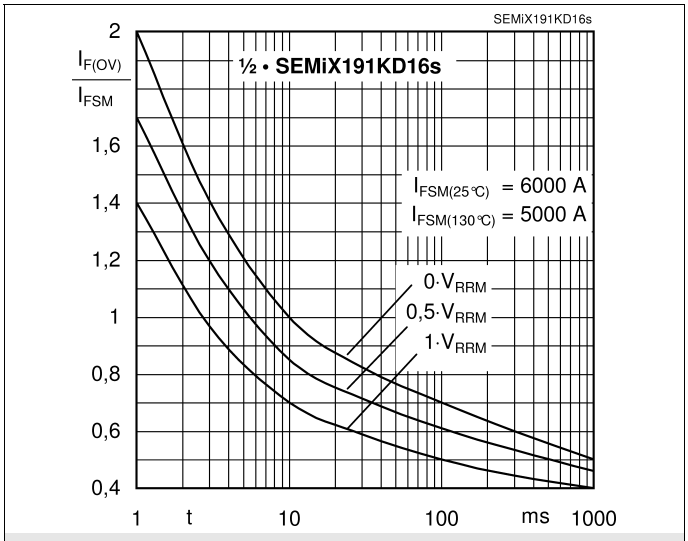
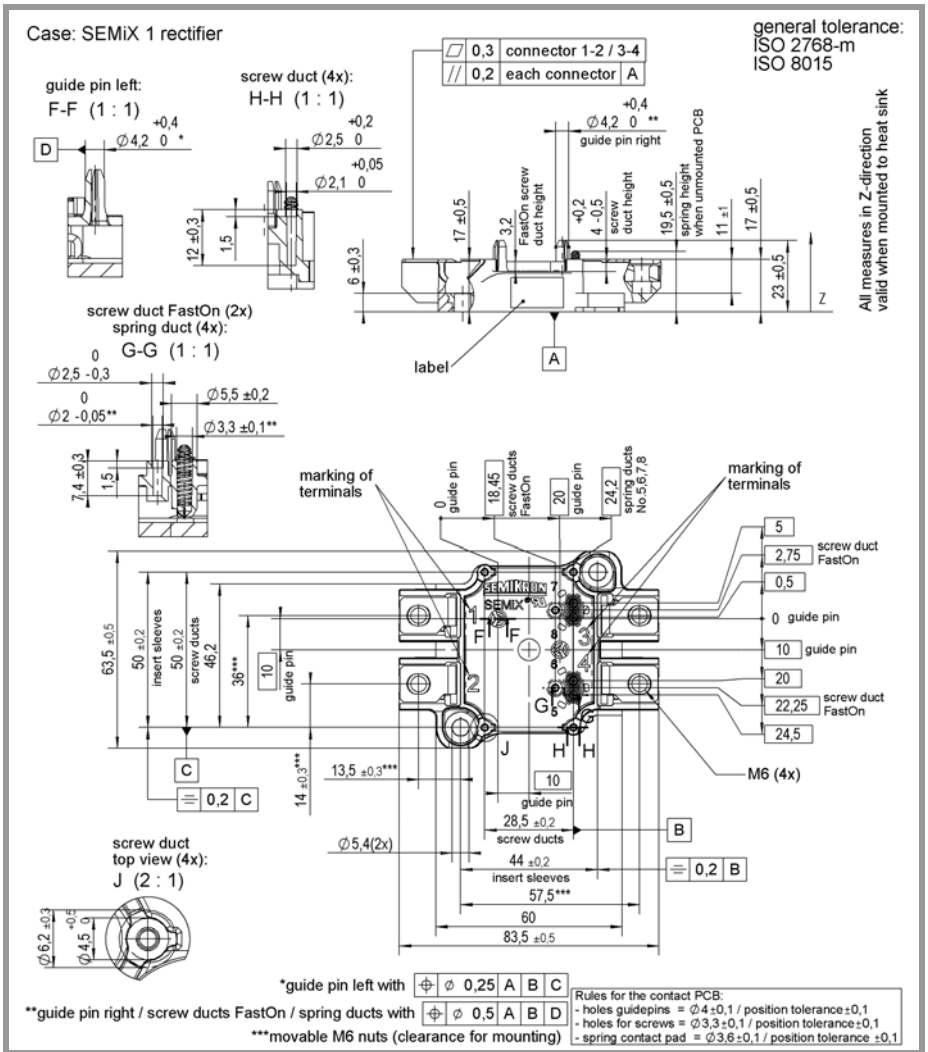


Fig. 8: Surge overload current vs. time



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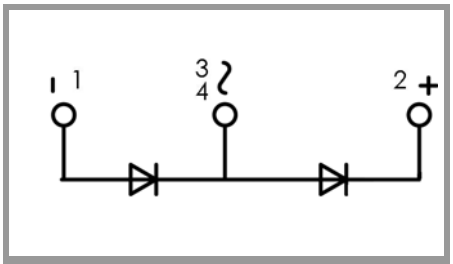

spring configuration

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.