SEMiX 302KH ...

SEMiX® 2s

Rectifier (Thryr./Diode) Module

SEMiX 302KT

SEMiX 302KH

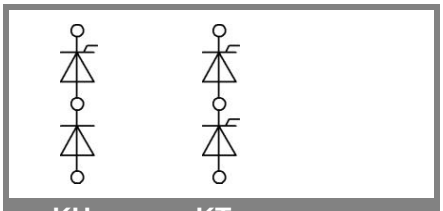
Preliminary Data

Features

- Terminal height 17 mm
- Chips soldered directly to isolated substrate

Typical Applications

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



KH KT

V_{RSM} V	V_{RRM}, V_{DRM} V	I_{TRMS} = 510 A (maximum value for continuous operation) I_{TAV} = 300 A (sin. 180; T_c = 85 °C)		
1700	1600	SEMiX 302KH16s	SEMiX 302KT16s	

Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; T_c = 85 (100) °C;	300 (230)	A
I_{TSM}	T_{vj} = 25 °C; 10 ms	9300	A
	T_{vj} = 130 °C; 10 ms	8000	A
i²t	T_{vj} = 25 °C; 8,3 ... 10 ms	432000	A²s
	T_{vj} = 130 °C; 8,3 ... 10 ms	320000	A²s
V_T	T_{vj} = 25 °C; I_T = 900 A	max. 1,7	V
$V_{T(TO)}$	T_{vj} = 130 °C	max. 0,85	V
r_T	T_{vj} = 130 °C	max. 1,1	mΩ
I_{DD}; I_{RD}	T_{vj} = 130 °C; V_{RD} = V_{RRM}; V_{DD} = V_{DRM}	max. 75	mA
t_{gd}	T_{vj} = 25 °C; I_G = 1 A; di_G/dt = 1 A/µs	1	µs
t_{gr}	V_D = 0,67 * V_{DRM}	2	µs
$(di/dt)_{cr}$	T_{vj} = 130 °C	max. 130	A/µs
$(dv/dt)_{cr}$	T_{vj} = 130 °C	max. 1000	V/µs
t_q	T_{vj} = 130 °C ,	150	µs
I_H	T_{vj} = 25 °C; typ. / max.	150 / 500	mA
I_L	T_{vj} = 25 °C; R_G = 33Ω; typ. / max.	300 / 1000	mA
V_{GT}	T_{vj} = 25 °C; d.c.	min. 3	V
I_{GT}	T_{vj} = 25 °C; d.c.	min. 200	mA
V_{GD}	T_{vj} = 130 °C; d.c.	max. 0,25	V
I_{GD}	T_{vj} = 130 °C; d.c.	max. 10	mA
$R_{th(j-c)}$	per diode	0,091	K/W
$R_{th(j-c)}$	per thyristor	0,091	K/W
$R_{th(j-c)}$			K/W
$R_{th(c-s)}$	per module	0,045	K/W
T_{vj}		- 40 ... + 130	°C
T_{stg}		- 40 ... + 125	°C
V_{isol}	AC, 50Hz; rms; 1s/1min	4800 / 4000	V~
M_s	(min./max.)	3/5	Nm
M_t	(min./max.)	2,5/5	Nm
a		5 * 9,81	m/s²
m	approx.	220	g
Case	SEMiX 2s		

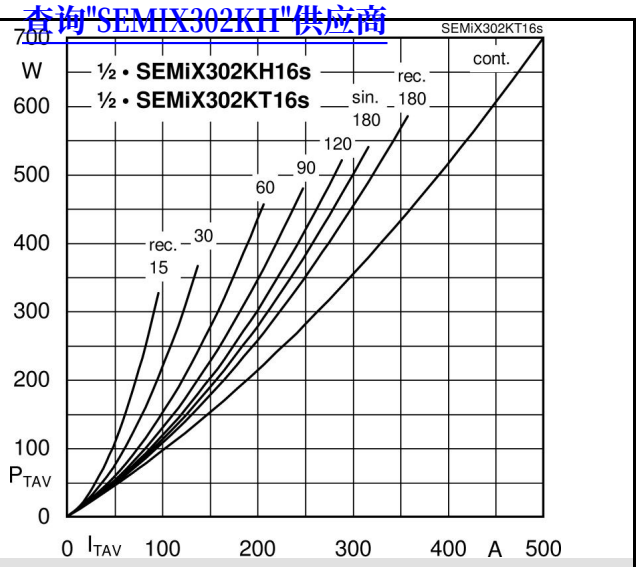


Fig. 1L Power dissipation per thyristor/diode vs. on-state current

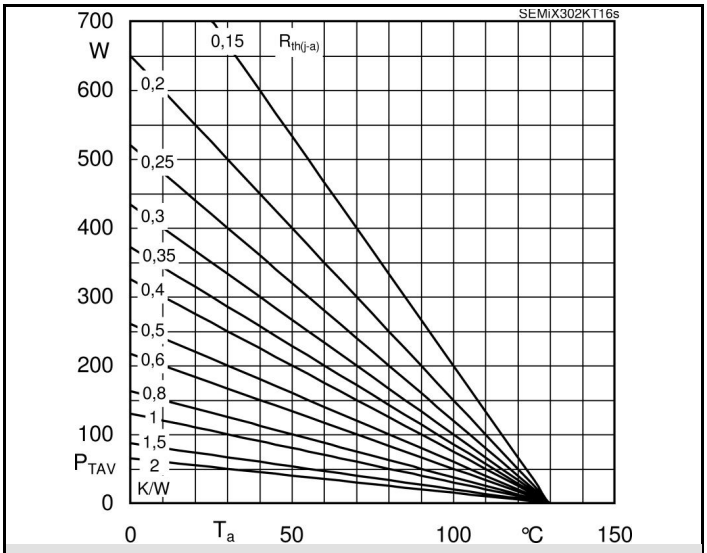


Fig. 1R Power dissipation per thyristor/diode vs. ambient temperature

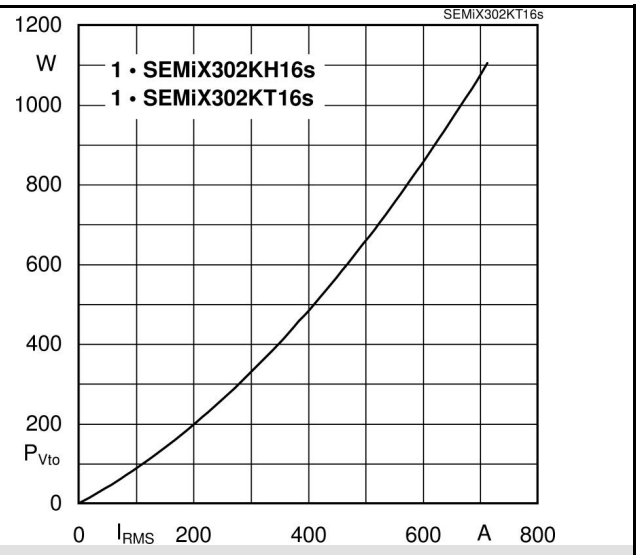


Fig. 2L Power dissipation of one module vs. rms current

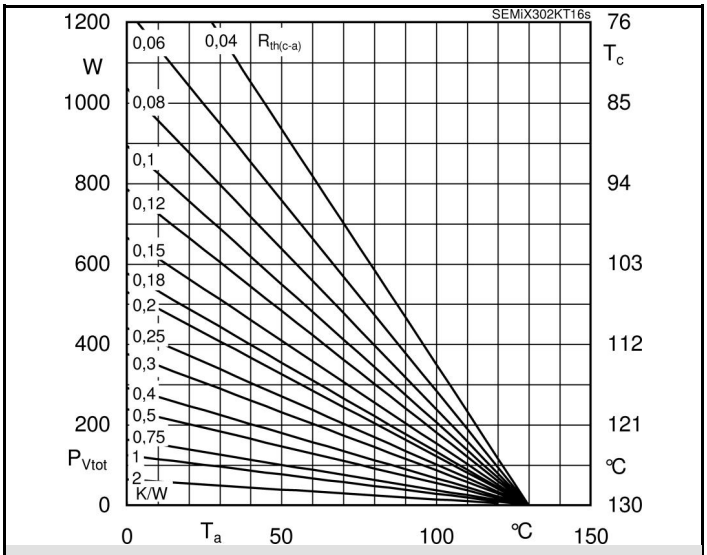


Fig. 2R Power dissipation of one module vs. case temperature

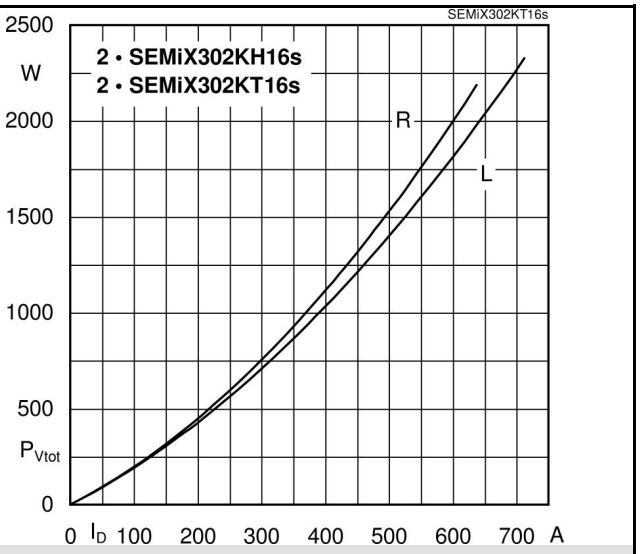


Fig. 3L Power dissipation of two modules vs. direct current

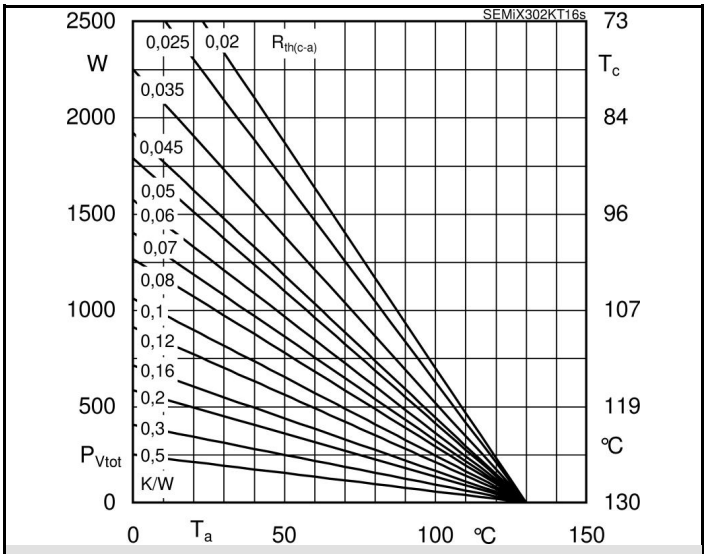


Fig. 3R Power dissipation of two modules vs. case temperature

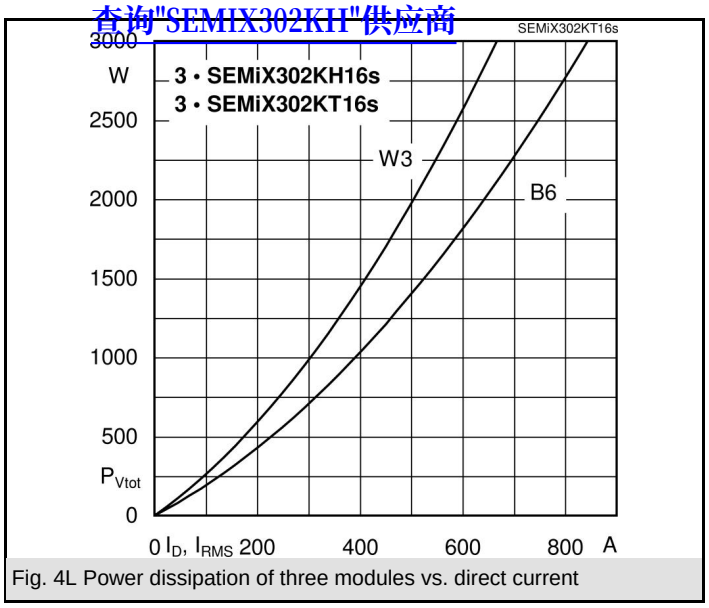


Fig. 4L Power dissipation of three modules vs. direct current

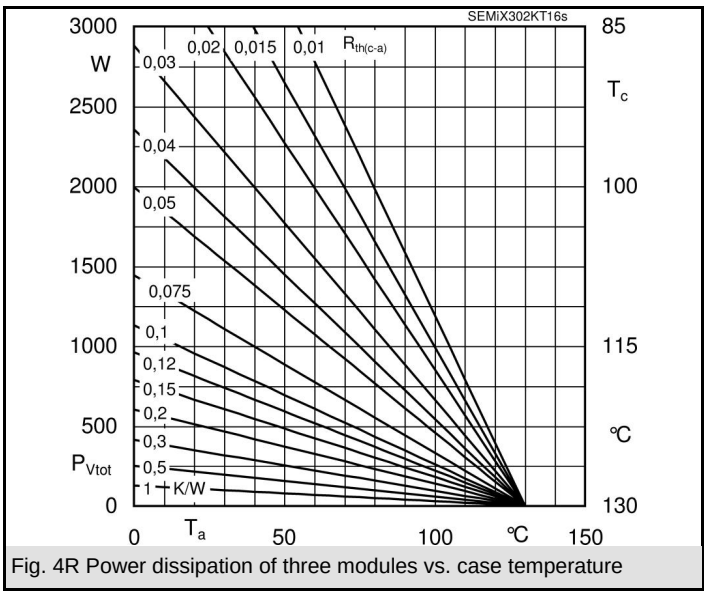


Fig. 4R Power dissipation of three modules vs. case temperature

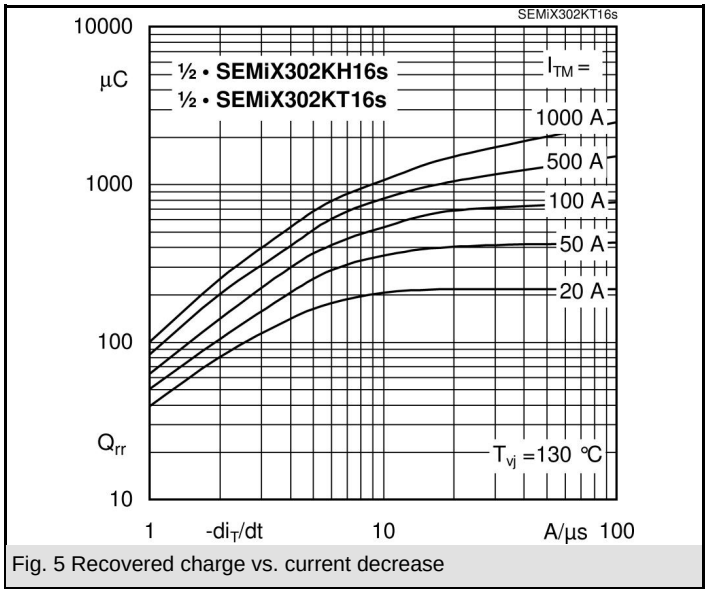


Fig. 5 Recovered charge vs. current decrease

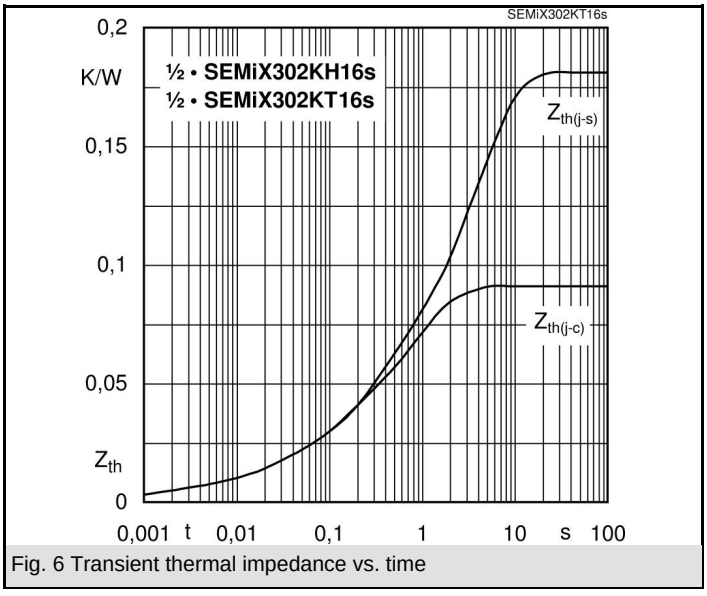


Fig. 6 Transient thermal impedance vs. time

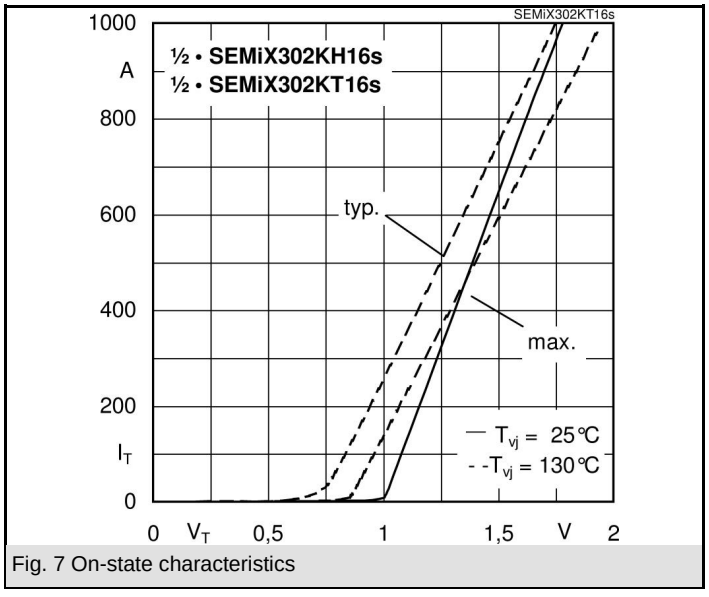


Fig. 7 On-state characteristics

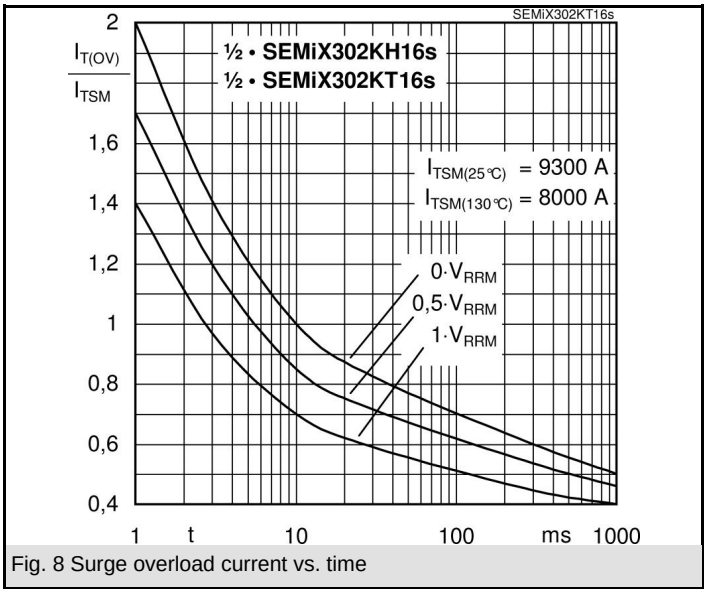


Fig. 8 Surge overload current vs. time

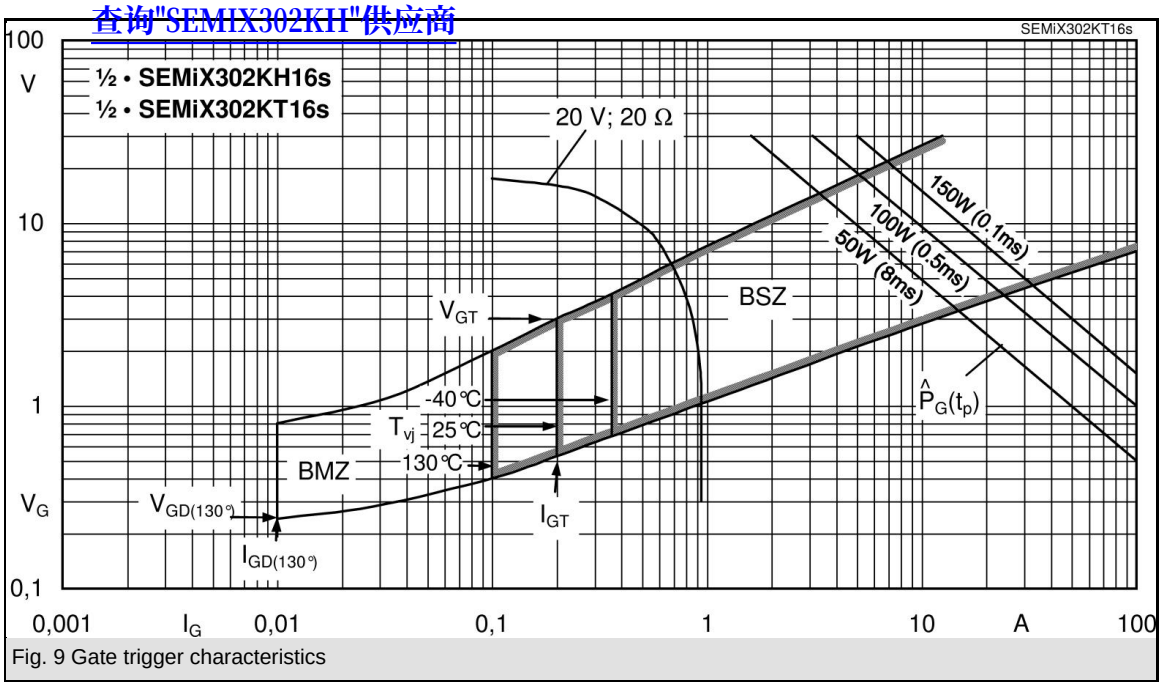
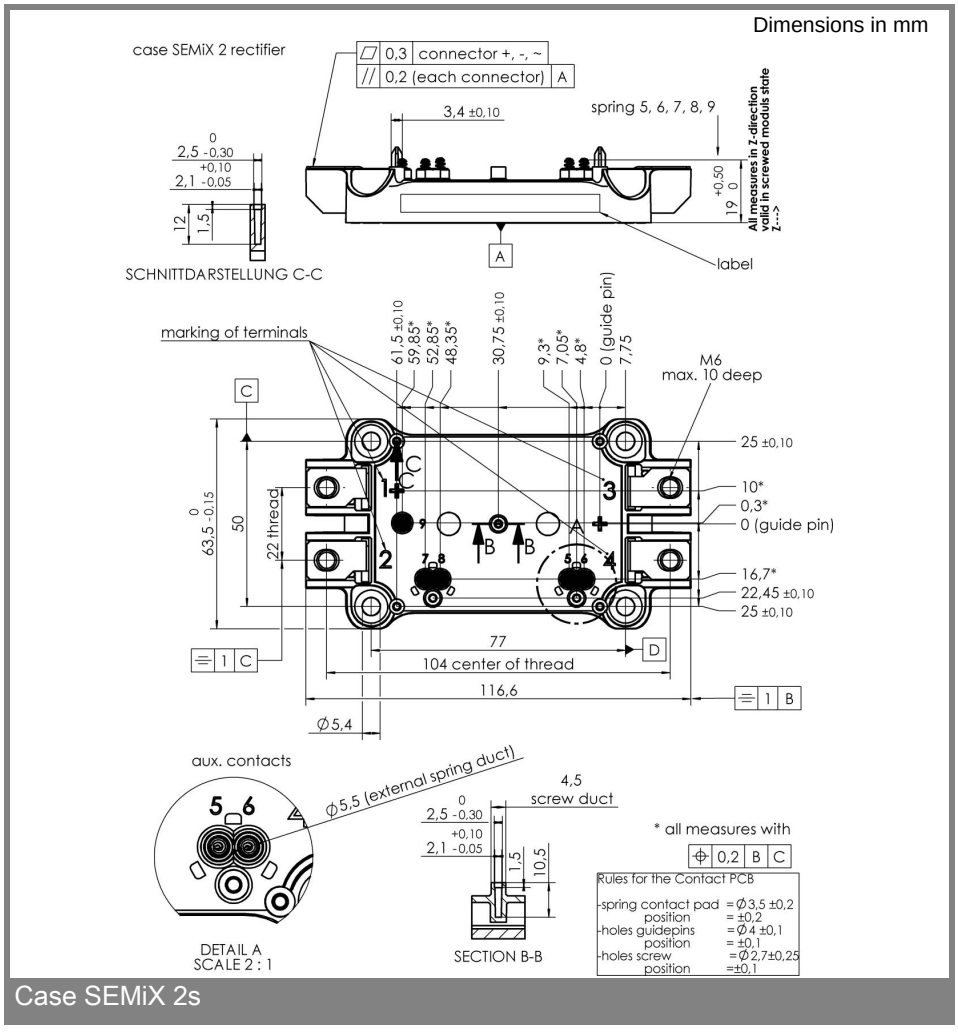
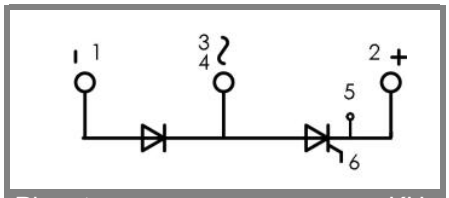


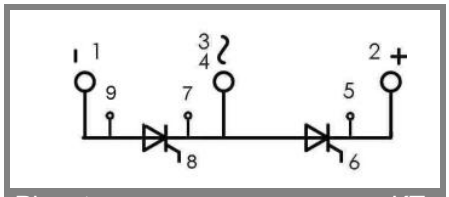
Fig. 9 Gate trigger characteristics



Case SEMiX 2s



Pinout KH



Pinout KT

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