



SEMiX® 1s

Rectifier Thyr./Diode Module

SEMiX 171KH

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

V_{RSM} V	V_{RRM}, V_{DRM} V	$I_{TRMS} = 250$ A (maximum value for continuous operation)	
1700	1600	$I_{TAV} = 170$ A (sin. 180; $T_c = 85$ °C)	
		SEMiX 171KH16s	

Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; $T_c = 85$ (100) °C;	170 (125)	A
I_{TSM}	$T_{vj} = 25$ °C; 10 ms	5400	A
	$T_{vj} = 130$ °C; 10 ms	4800	A
i^2t	$T_{vj} = 25$ °C; 8,3 ... 10 ms	145000	A ² s
	$T_{vj} = 130$ °C; 8,3 ... 10 ms	115000	A ² s
V_T	$T_{vj} = 25$ °C; $I_T = 500$ A	max. 1,6	V
$V_{T(TO)}$	$T_{vj} = 130$ °C	max. 0,85	V
r_T	$T_{vj} = 130$ °C	max. 1,5	mΩ
$I_{DD}; I_{RD}$	$T_{vj} = 130$ °C; $V_{RD} = V_{RRM}; V_{DD} = V_{DRM}$	max. 60	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. 200	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 / 400	mA
I_L	$T_{vj} = 25$ °C; $R_G = 33$ Ω; typ. / max.	300 / 1000	mA
V_{GT}	$T_{vj} = 25$ °C; d.c.	min. 2	V
I_{GT}	$T_{vj} = 25$ °C; d.c.	min. 150	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 thyristor	0,18	K/W
$R_{th(j-c)}$	per diode	0,18	K/W
$R_{th(j-c)}$			K/W
$R_{th(c-s)}$	per module	0,075	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/s ²
m	approx.	145	g
Case	SEMiX 1s		



KH

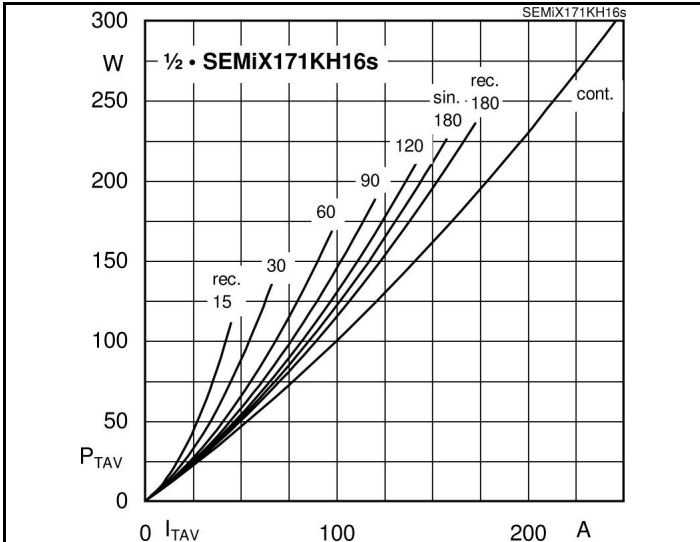


Fig. 1L Power dissipation per thyristor/diode vs. on-state current

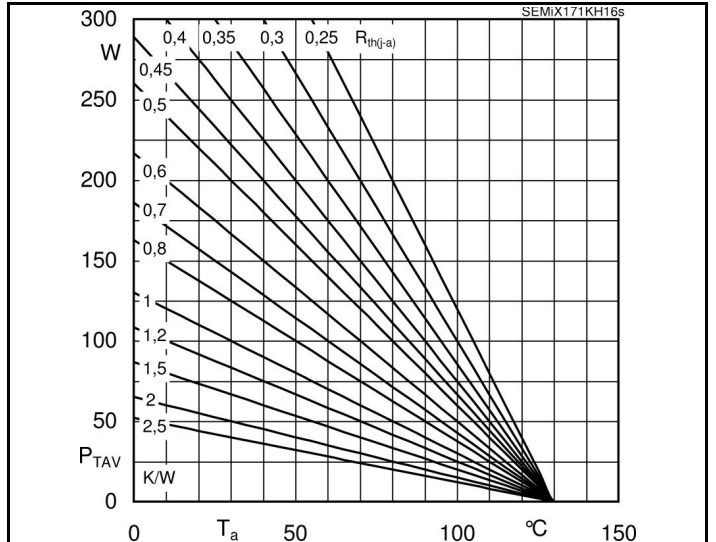


Fig. 1R Power dissipation per thyristor/diode vs. ambient temperature

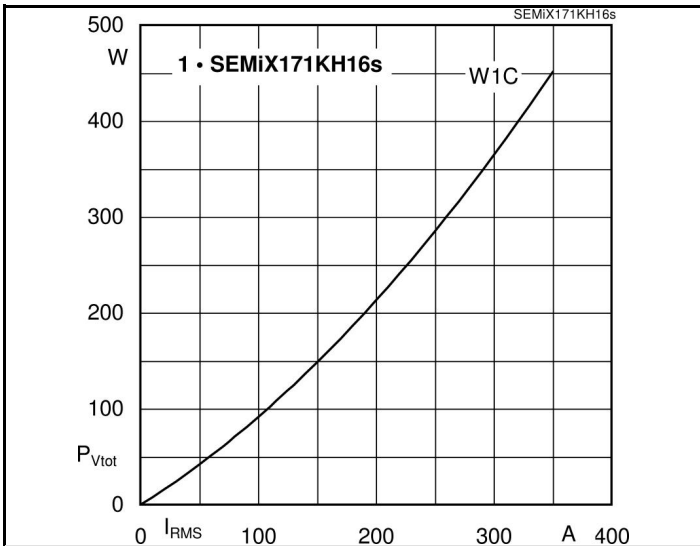


Fig. 2L Power dissipation of one module vs. rms current

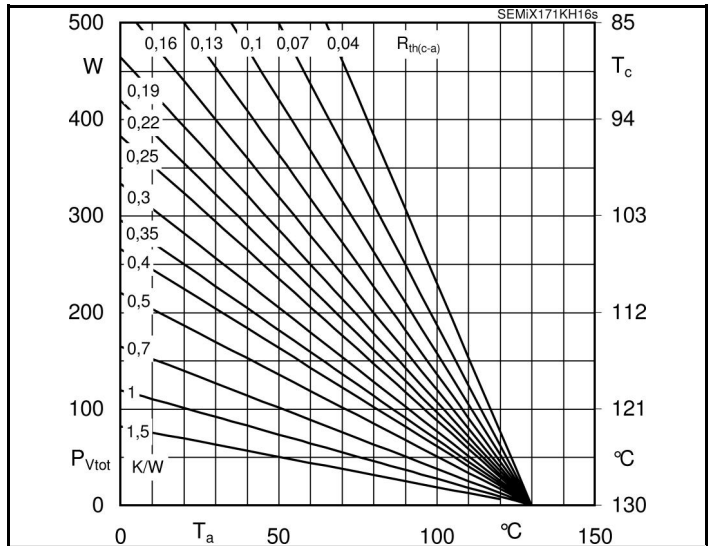


Fig. 2R Power dissipation of one module vs. case temperature

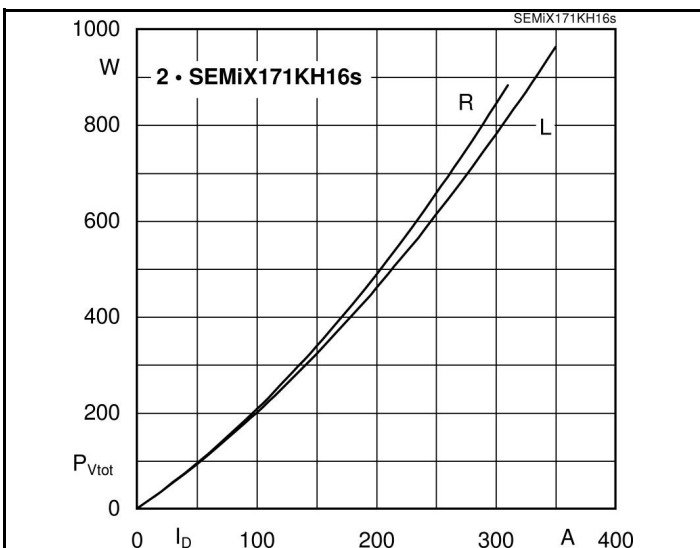


Fig. 3L Power dissipation of two modules vs. direct current

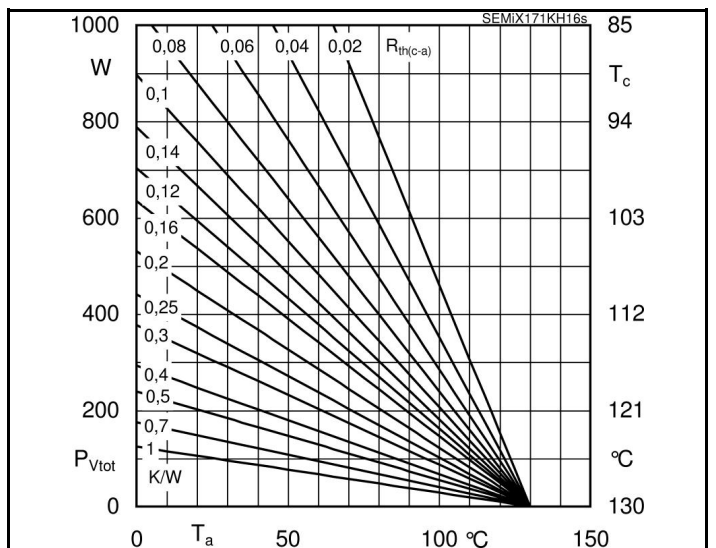
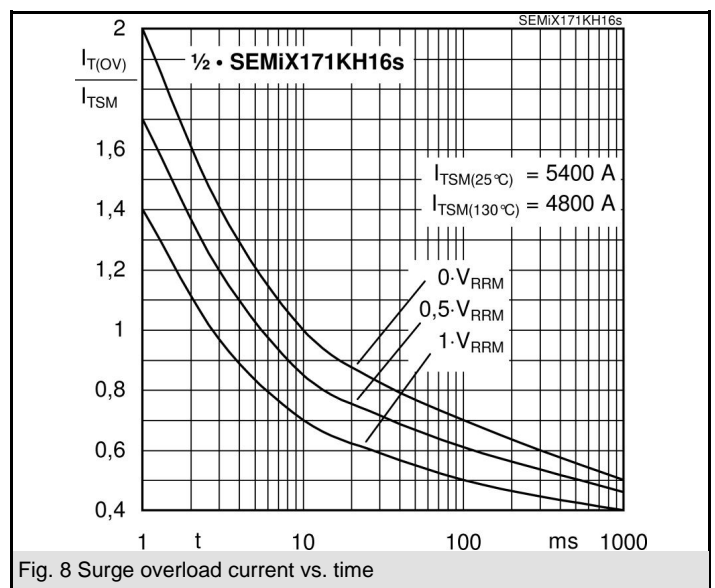
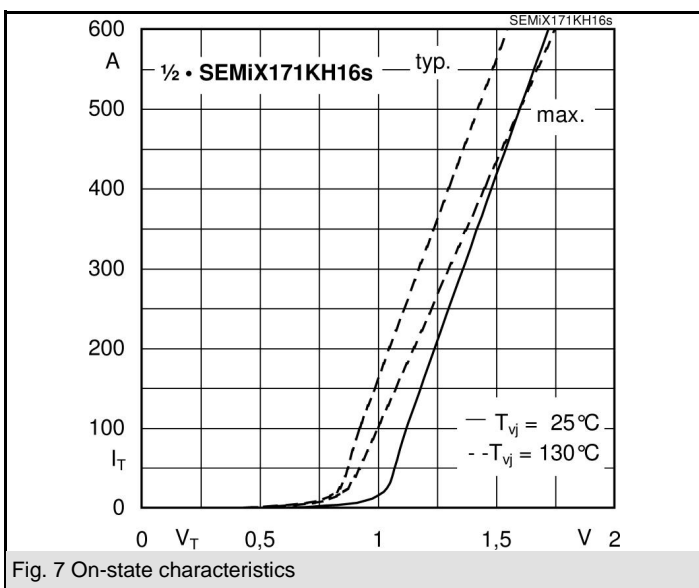
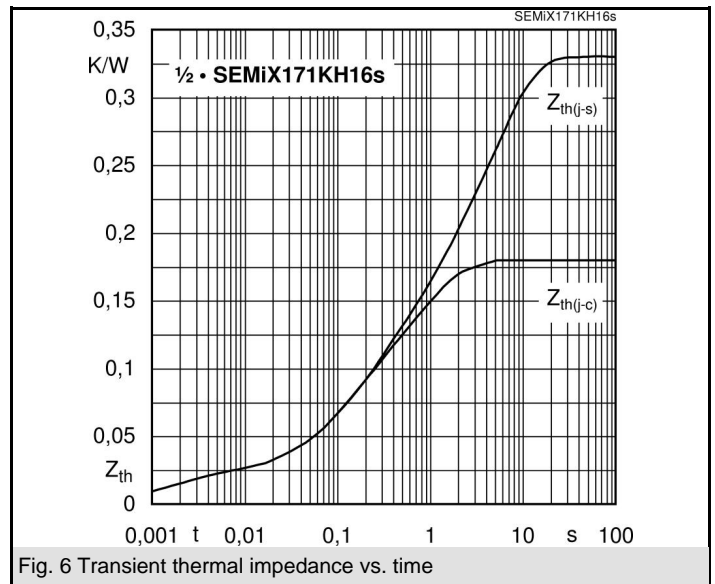
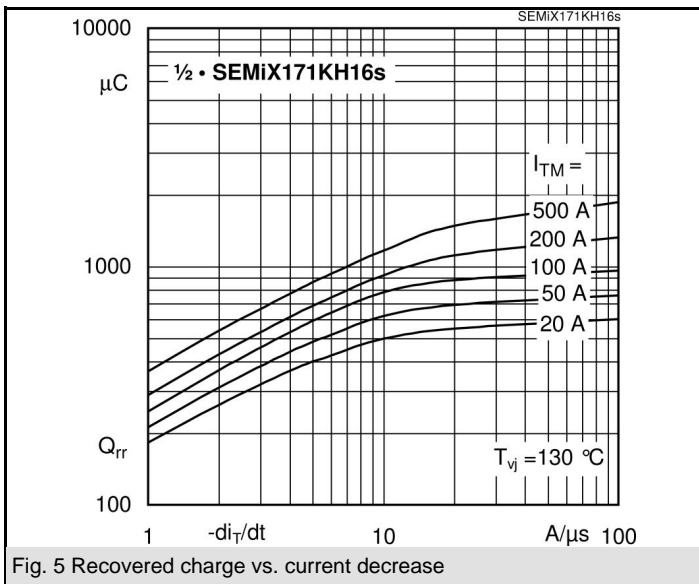
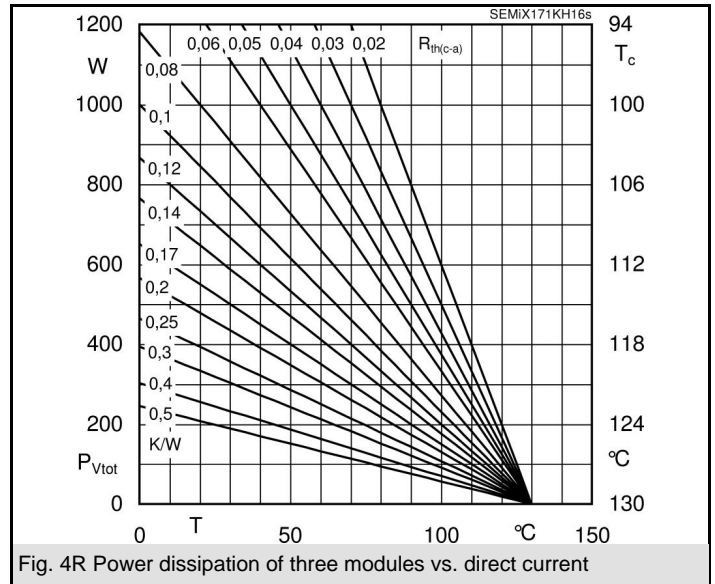
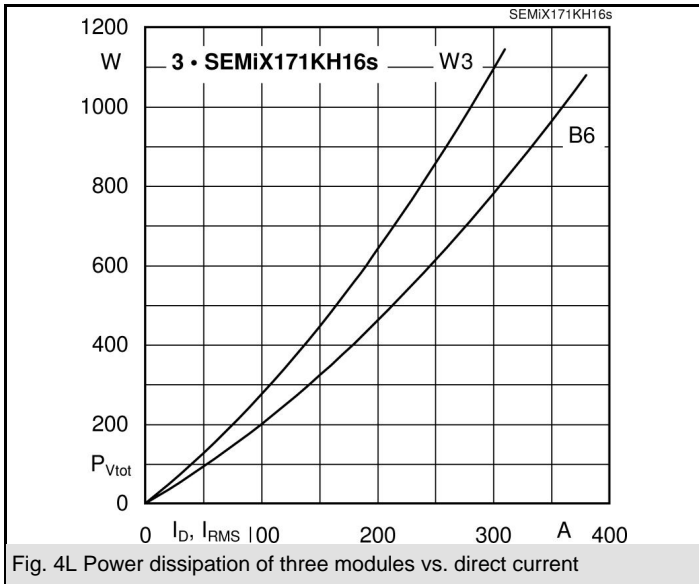
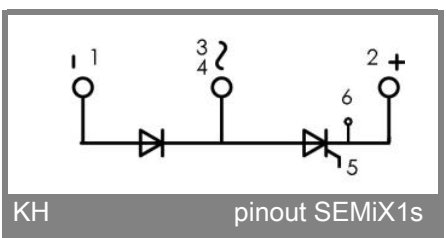
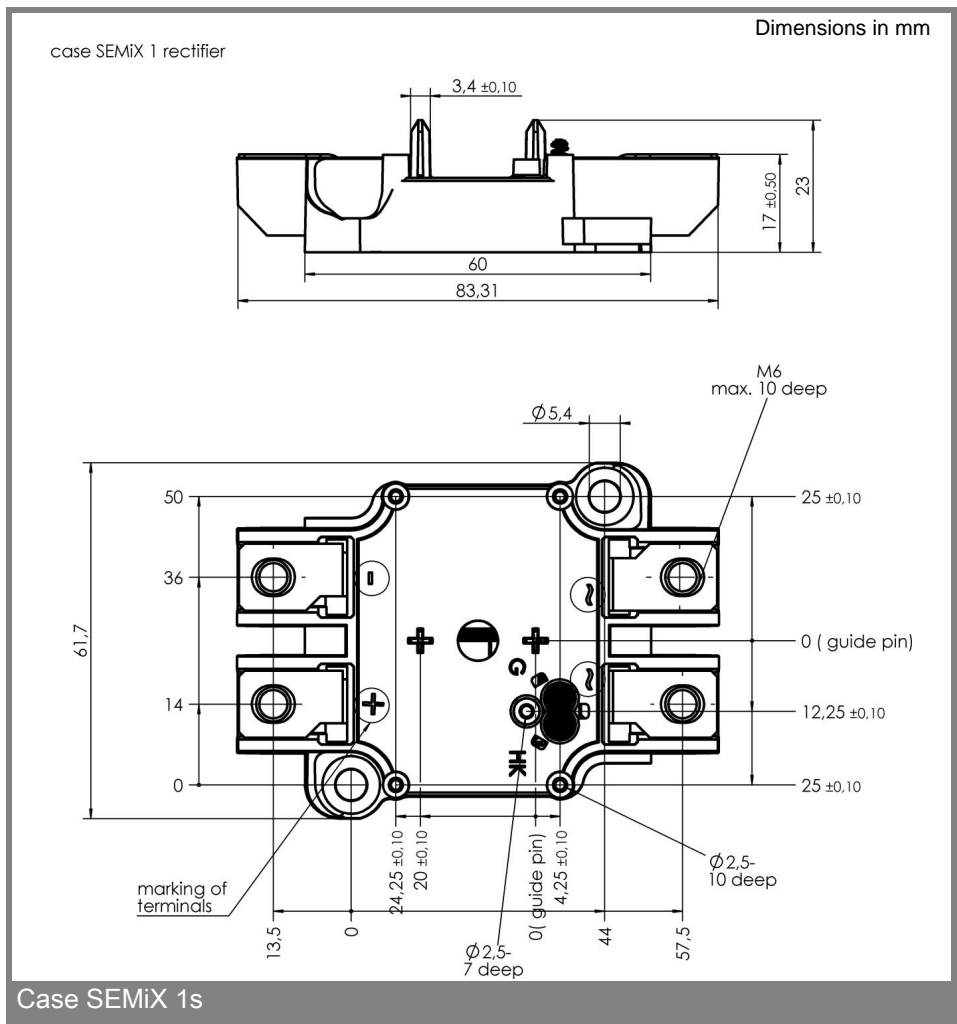
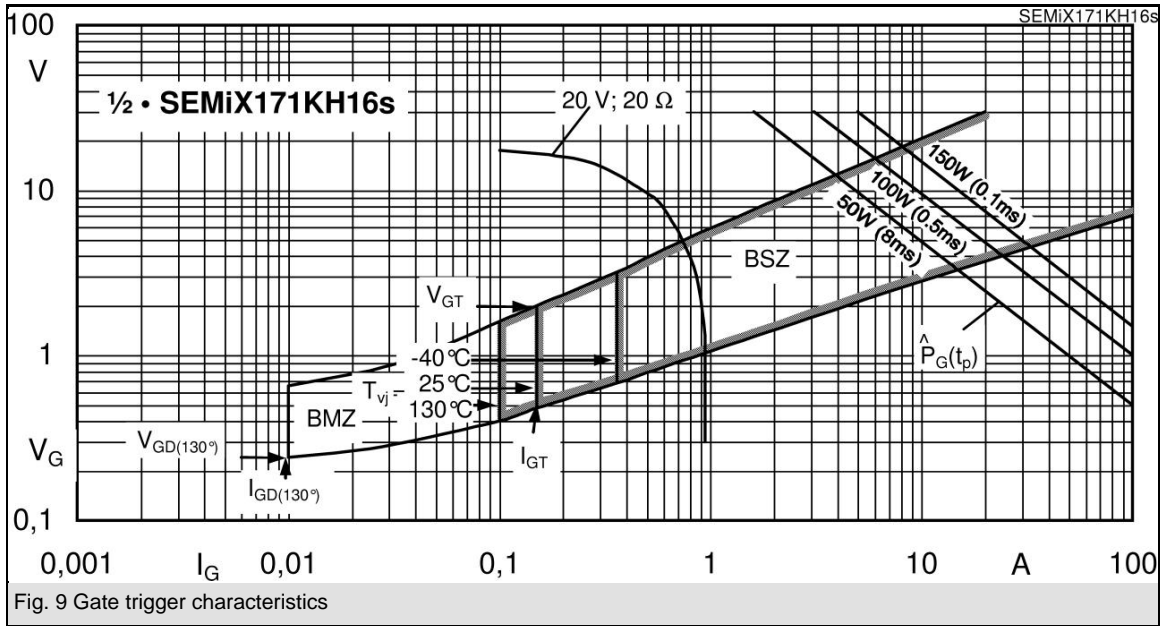


Fig. 3R Power dissipation of two modules vs. case temperature





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