

# SEMiX 171KH ...



**SEMiX<sup>®</sup> 1s**

## Rectifier Thyr./Diode Module

### SEMiX 171KH

#### Preliminary Data

#### Features

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

#### Typical Applications

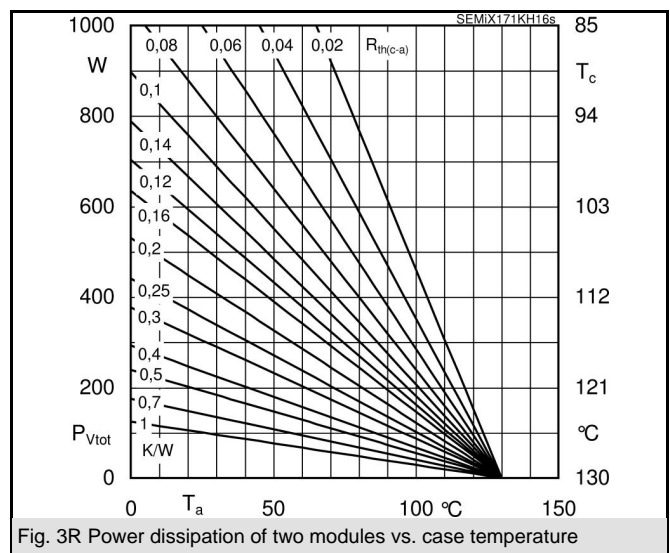
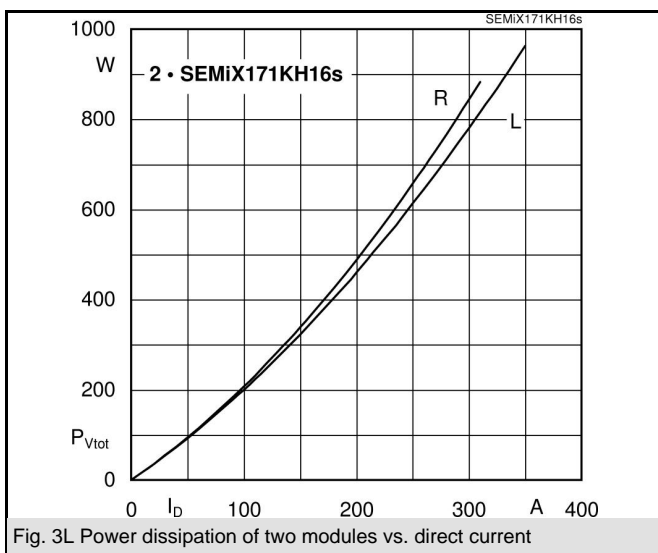
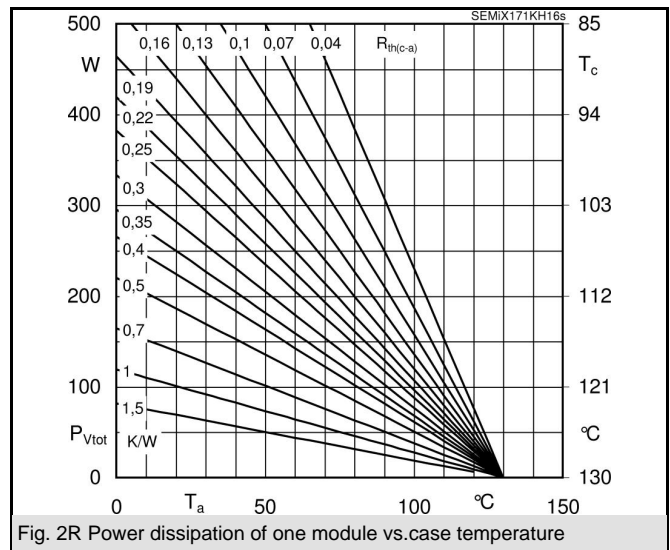
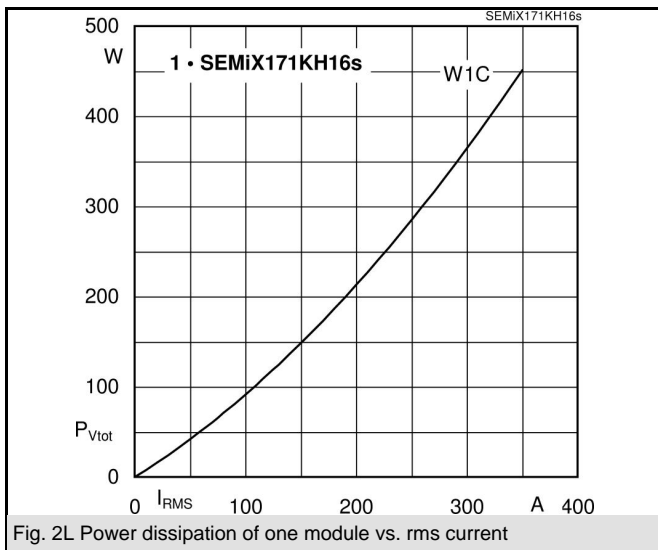
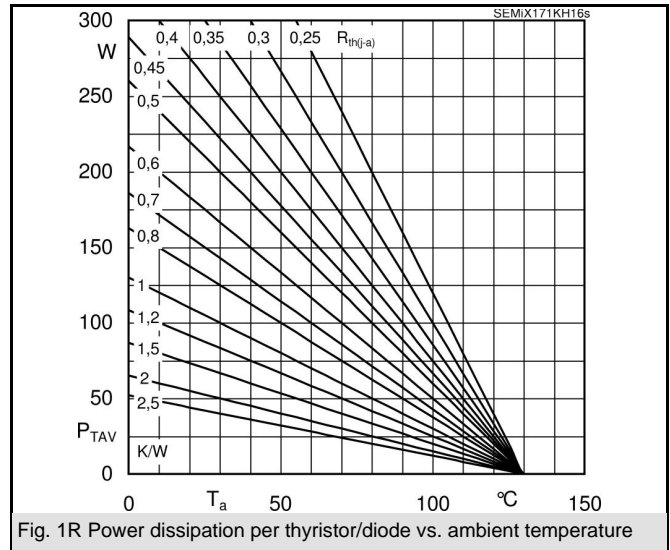
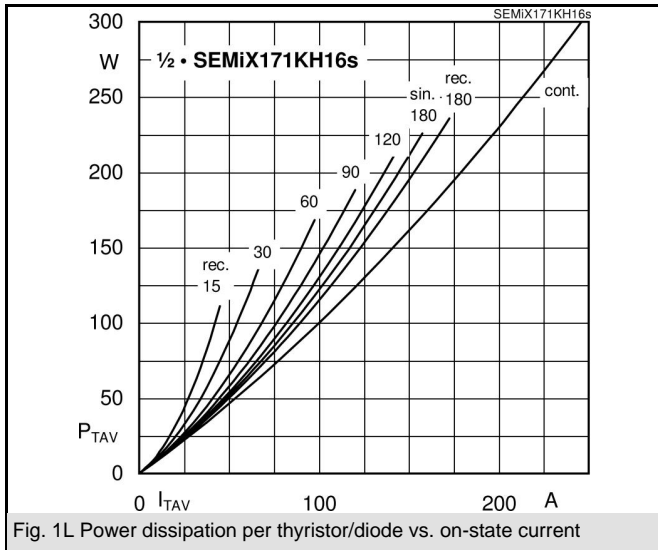
- Input Bridge Rectifier for
- AC/DC motor control
- power supply

$V_{RSM}$ 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 $T_{vj} = 130$ °C; 10 ms	5400 4800	A A
$i^2t$	$T_{vj} = 25$ °C; 8,3 ... 10 ms $T_{vj} = 130$ °C; 8,3 ... 10 ms	145000 115000	A <sup>2</sup> s A <sup>2</sup> 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; $R_G = 33\Omega$ ; 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
$R_{th(j-c)}$	per module	0,075	K/W
$R_{th(c-s)}$			K/W
$T_{vj}$			- 40 ... + 130
$T_{stg}$		- 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 <sup>2</sup>
$m$	approx.	145	g
Case	SEMiX 1s		



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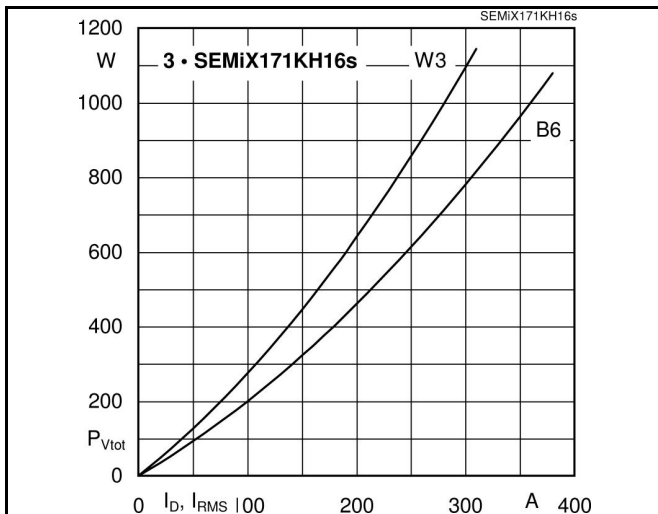


Fig. 4L Power dissipation of three modules vs. direct current

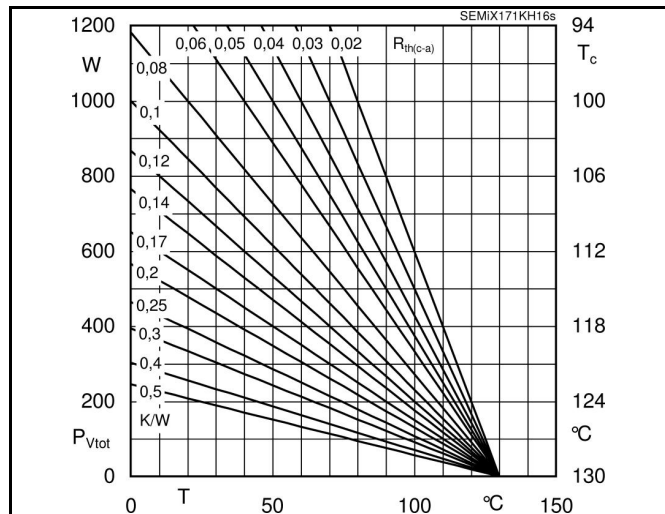


Fig. 4R Power dissipation of three modules vs. direct current

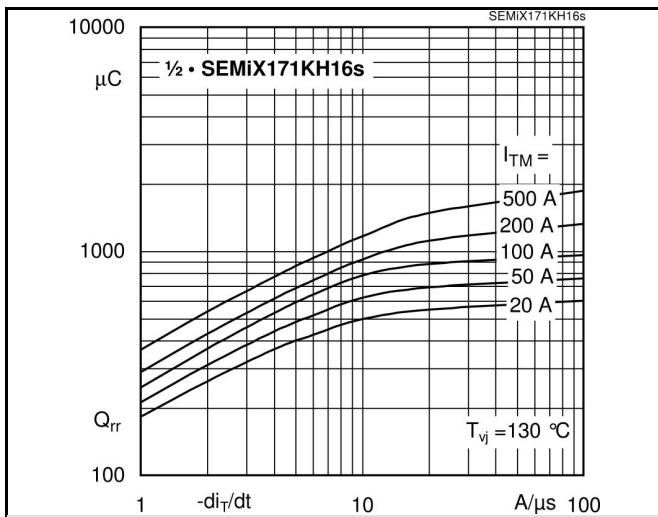


Fig. 5 Recovered charge vs. current decrease

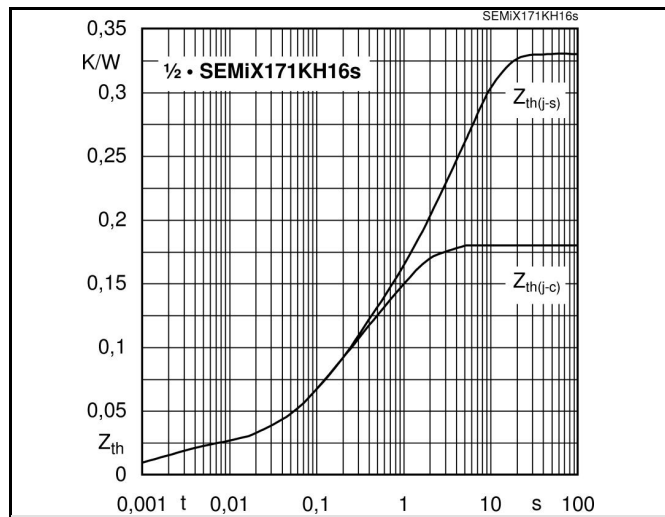


Fig. 6 Transient thermal impedance vs. time

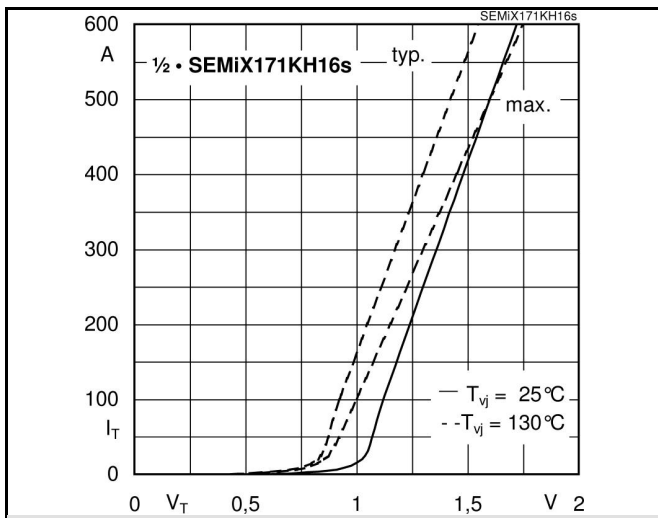


Fig. 7 On-state characteristics

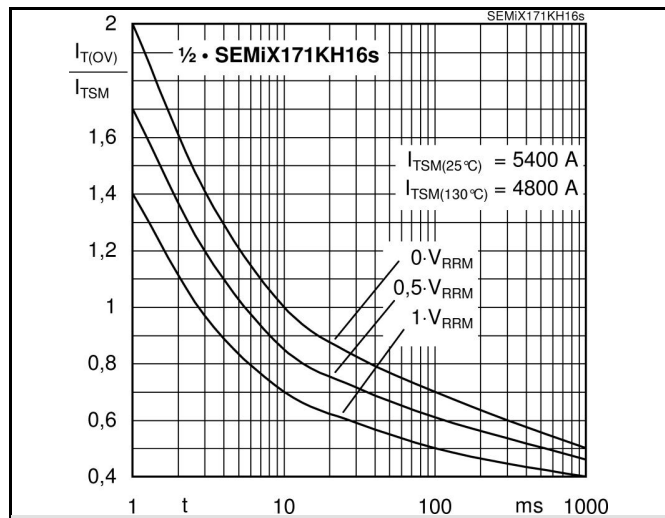
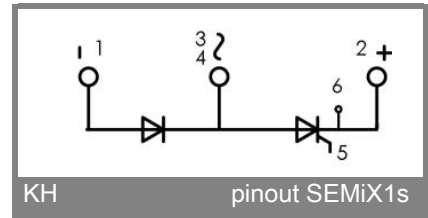
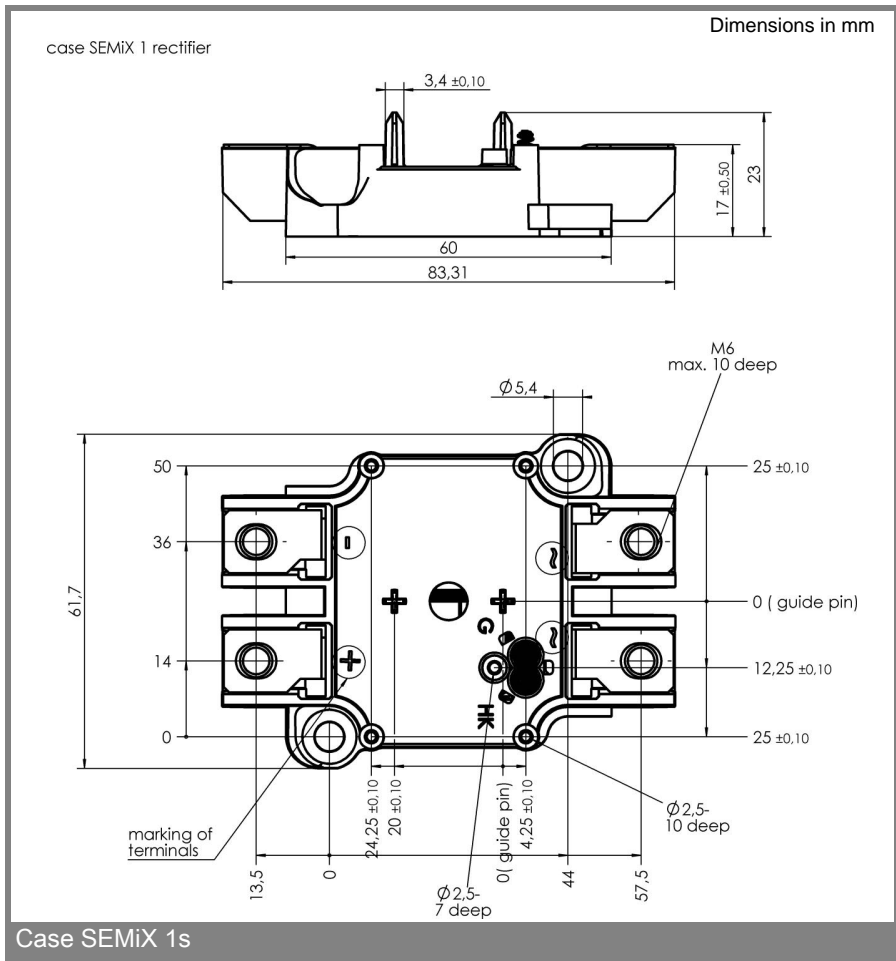
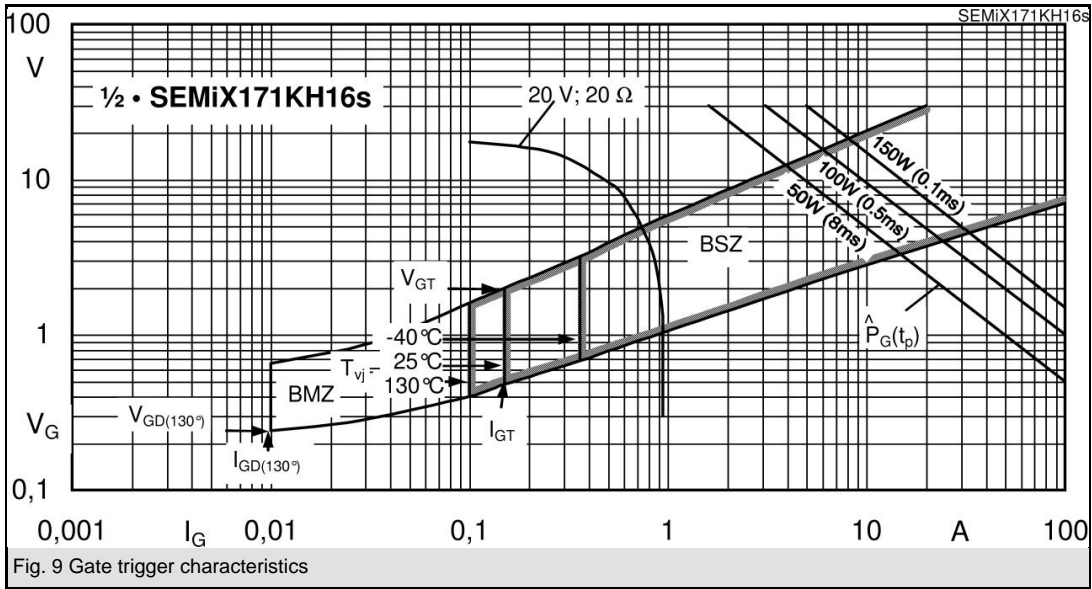


Fig. 8 Surge overload current vs. time



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