



**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 <sup>2</sup> s
	$T_{vj} = 130$ °C; 8,3 ... 10 ms	115000	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; $R_G = 33$ 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 <sup>2</sup>
$m$	approx.	145	g
Case	SEMiX 1s		



**KH**

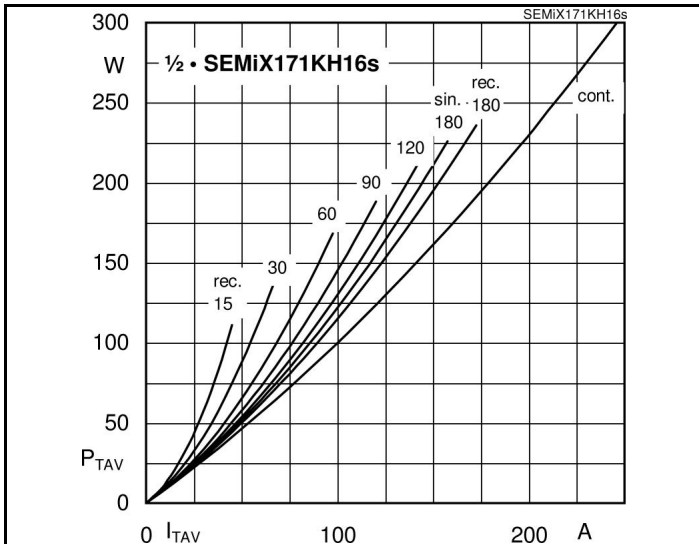


Fig. 1L Power dissipation per thyristor/diode vs. on-state current

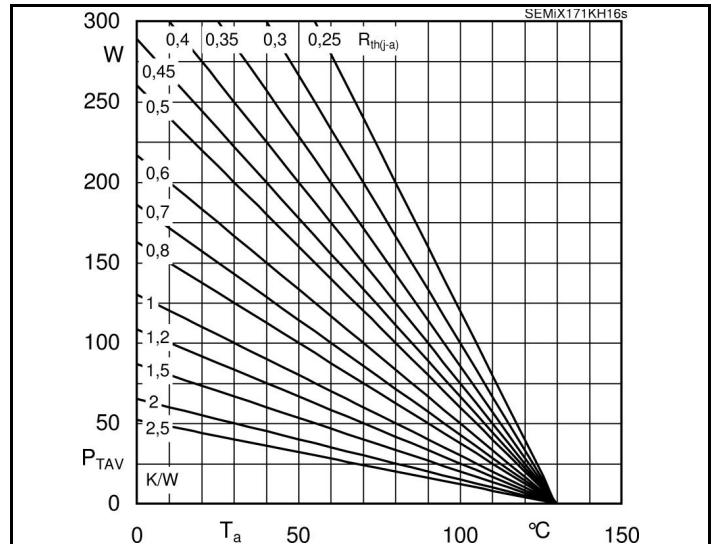


Fig. 1R Power dissipation per thyristor/diode vs. ambient temperature

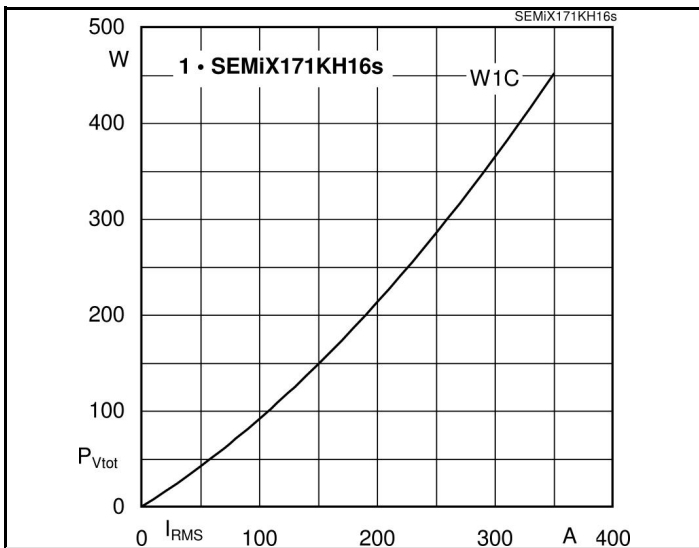


Fig. 2L Power dissipation of one module vs. rms current

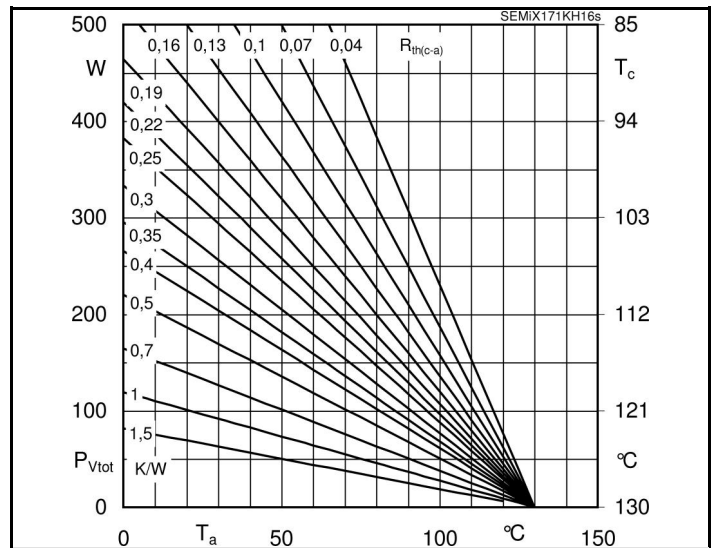


Fig. 2R Power dissipation of one module vs. case temperature

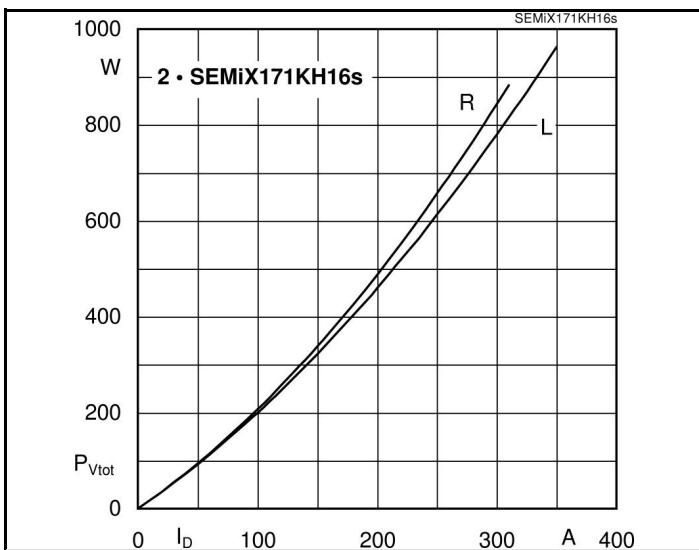


Fig. 3L Power dissipation of two modules vs. direct current

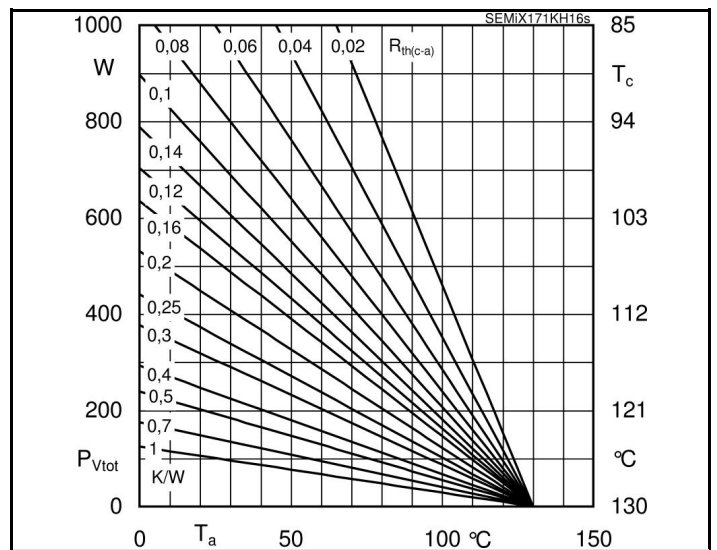


Fig. 3R Power dissipation of two modules vs. case temperature

