

V <sub>DRM</sub> V <sub>RSM</sub> V <sub>RRM</sub> V	I <sub>D</sub> (T <sub>case</sub> = ... °C, full conduction)				
	40 A (92 °C)	40 A (92 °C)	100 A (84 °C)	60 A (86 °C)	100 A (84 °C)
400	<b>SKCH</b> <b>40/04</b>	<b>SKBT</b> –	<b>SKDH</b> –	<b>SKDT</b> <b>60/04</b>	<b>SKDT</b> –
800	<b>40/08</b>	<b>40/08</b>	<b>100/08</b>	<b>60/08</b>	<b>100/08</b>
1200	<b>40/12</b>	<b>40/12</b>	<b>100/12</b>	<b>60/12</b>	<b>100/12</b>
1400	<b>40/14</b>	<b>40/14</b>	<b>100/14</b>	<b>60/14</b>	<b>100/14</b>
1600	<b>40/16</b>	–	–	–	–

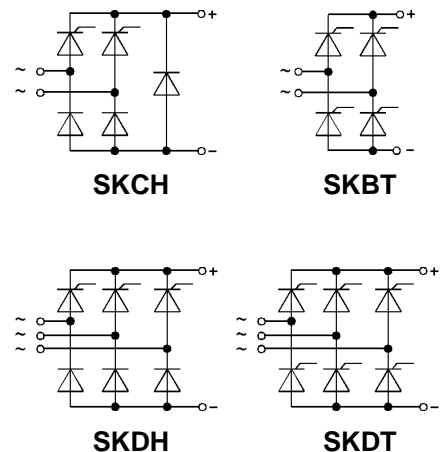
## SEMIPONT® 2 Controllable Bridge Rectifiers

**SKCH 40**  
**SKBT 40**  
**SKDH 100**

**SKDT 60**  
**SKDT 100**



Symbol	Conditions	SKCH 40 SKBT 40	SKDT 60	SKDH 100 SKDT 100	Units
I <sub>D</sub>	T <sub>case</sub> = 85 °C; inductive load	46	61	98	A
	T <sub>amb</sub> = 45 °C, chassis <sup>1)</sup>	15	16	20	A
	P13A/125	18	21	25	A
	R4A/120	18			A
	P1A/120	28	34	45	A
	T <sub>amb</sub> = 35 °C, P1A/120 F	47	57	85	A
	P3/180 F	55	65	95	A
I <sub>TSM</sub>	T <sub>vj</sub> = 25 °C, 10 ms	470	470	1000	A
	T <sub>vj</sub> = 125 °C, 10 ms	400	400	850	A
i <sup>2</sup> t	T <sub>vj</sub> = 25 °C, 8,3...10 ms	1100	1100	5000	A <sup>2</sup> s
	T <sub>vj</sub> = 125 °C, 8,3...10 ms	800	800	3600	A <sup>2</sup> s
(di/dt) <sub>cr</sub>	T <sub>vj</sub> = 125 °C, 50 Hz	50			A/μs
(dv/dt) <sub>cr</sub>	T <sub>vj</sub> = 125 °C, 2/3 V <sub>DRM</sub>	500			V/μs
I <sub>H</sub>	T <sub>vj</sub> = 25 °C, typ./max.	100/200			mA
I <sub>L</sub>	T <sub>vj</sub> = 25 °C, typ./max.	250/400			mA
V <sub>T</sub>	T <sub>vj</sub> = 25 °C; (I <sub>T</sub> = ...)	2,3 (75)	2,3 (75)	1,95 (200)	V
V <sub>T(TO)</sub>	T <sub>vj</sub> = 125 °C	1,0	1,0	1,0	V
r <sub>T</sub>	T <sub>vj</sub> = 125 °C	16	16	4,5	mΩ
I <sub>DD</sub> ; I <sub>RD</sub>	T <sub>vj</sub> = 125 °C; V <sub>DD</sub> = V <sub>DRM</sub> V <sub>RD</sub> = V <sub>RRM</sub>	10	10	15	mA
V <sub>GT</sub>	T <sub>vj</sub> = 25 °C, V <sub>D</sub> = 6 V	3			V
I <sub>GT</sub>	T <sub>vj</sub> = 25 °C, V <sub>D</sub> = 6 V	150			mA
V <sub>GD</sub>	T <sub>vj</sub> = 125 °C, V <sub>D</sub> = 6 V	0,25			V
R <sub>thjc</sub>	per thyristor/diode	1,0	1,0	0,85	°C/W
	total	0,25	0,167	0,141	°C/W
R <sub>thch</sub>	total	0,05			°C/W
T <sub>vj</sub> , T <sub>stg</sub>		– 40...+ 125			°C
V <sub>isol</sub>	a.c.50...60Hz;r.m.s.;1s/1min	3600 / 3000			V~
M <sub>1</sub>	to heatsink } SI (US) units	5 (44 lb.in.) ± 15 %			Nm
M <sub>2</sub>		3 (26 lb.in.) ± 15 %			Nm
w		165			g
Case		G 19 G 20	G 21	G 53 G 21	



### Features

- Fully controlled single and three phase bridge rectifiers
- Robust plastic case with screw terminals
- Large, isolated base plate
- Blocking voltage to 1600 V
- High surge currents
- Easy chassis mounting
- UL recognized, file no. E 63 532

### Typical Applications

- SKCH, SKDH, SKDT for DC drives with a fixed direction of rotation
- SKBT, SKDT for reversing DC drives
- Controlled field rectifiers for DC motors
- Controlled battery charger rectifiers

<sup>1)</sup> Painted metal sheet of minimum 250 x 250 x 1 mm: R<sub>thca</sub> = 1,8 °C/W

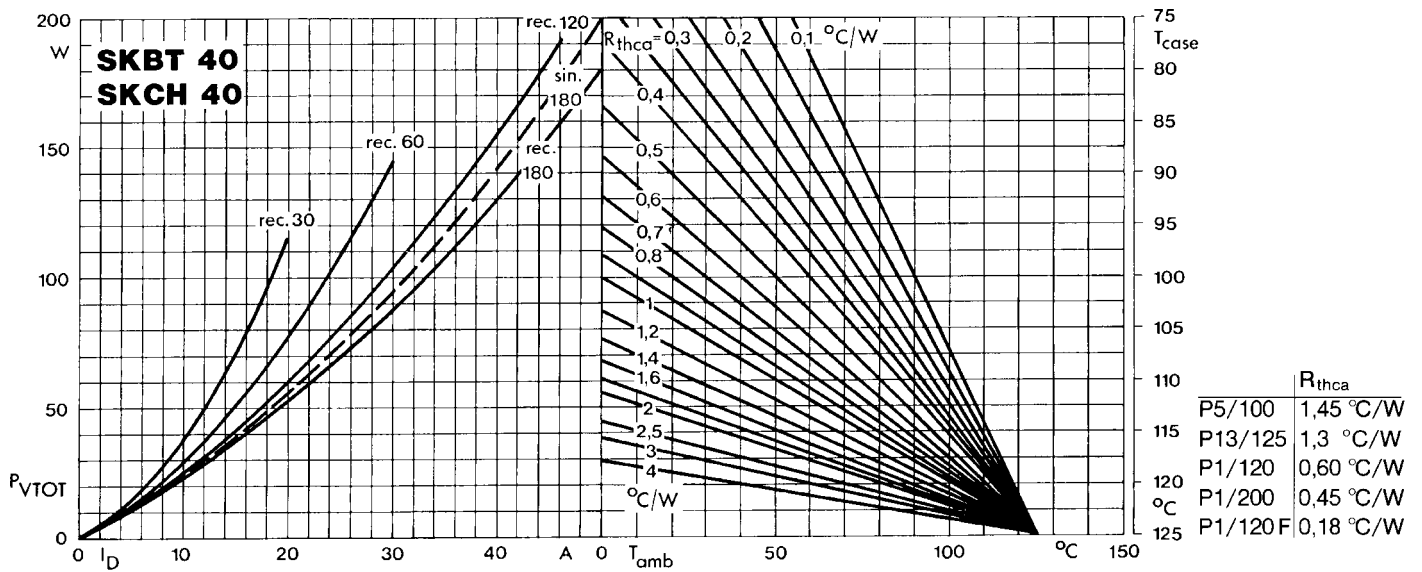


Fig. 4 a Power dissipation vs. output current and case temperature

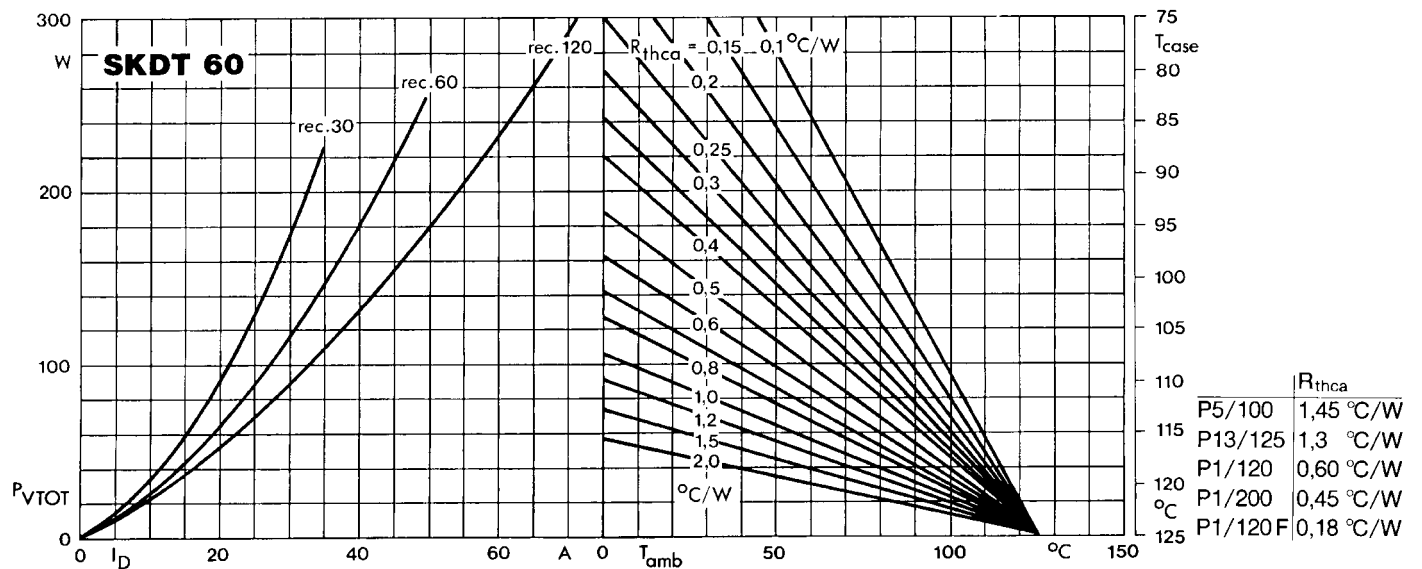


Fig. 4 b Power dissipation vs. output current and case temperature

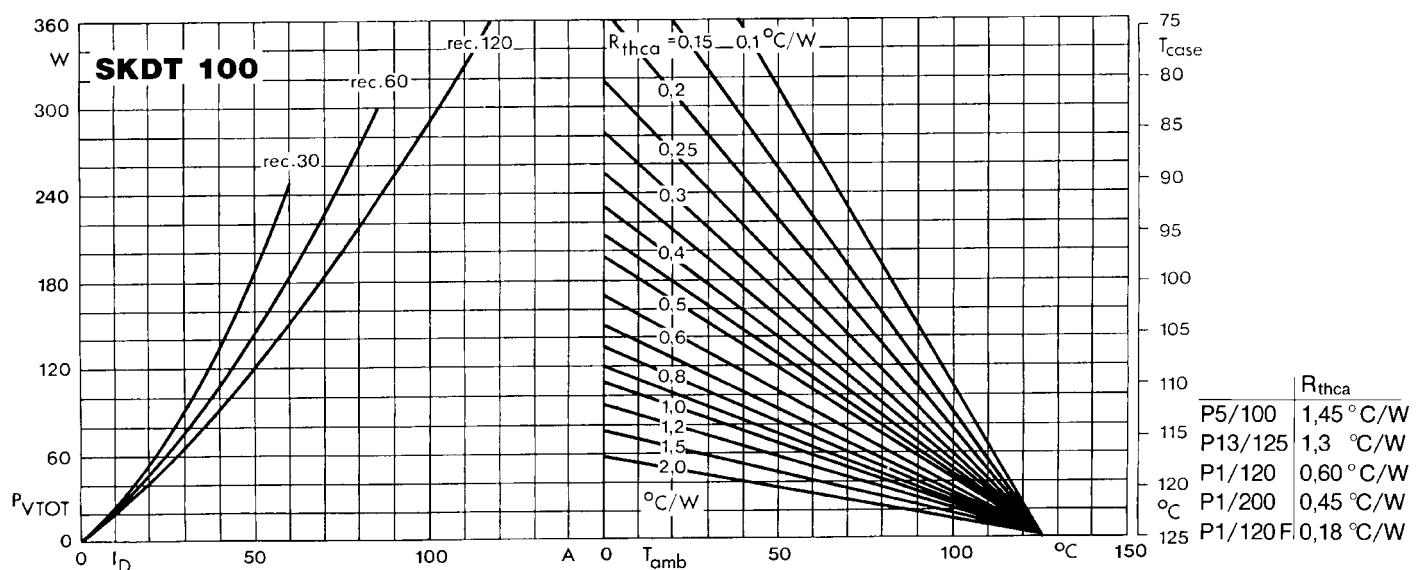


Fig. 4 c Power dissipation vs. output current and case temperature

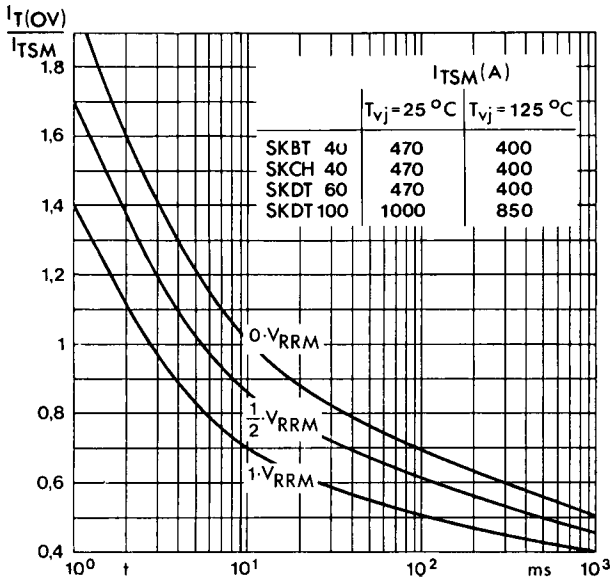


Fig. 5 Surge overload current vs. time

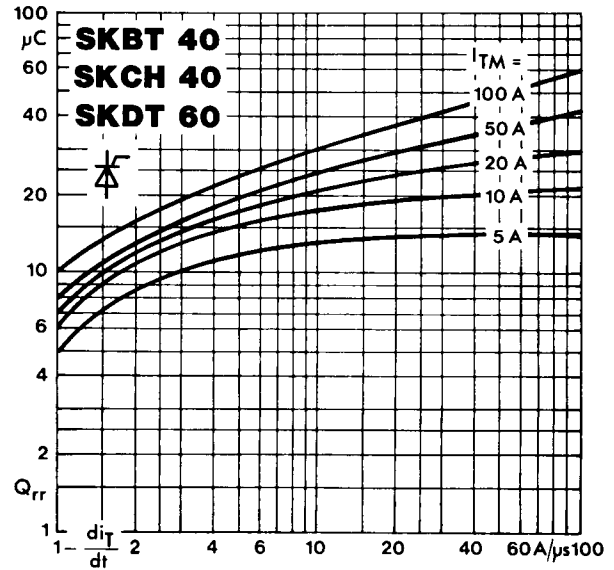


Fig. 8 a Recovered charge vs. current decrease

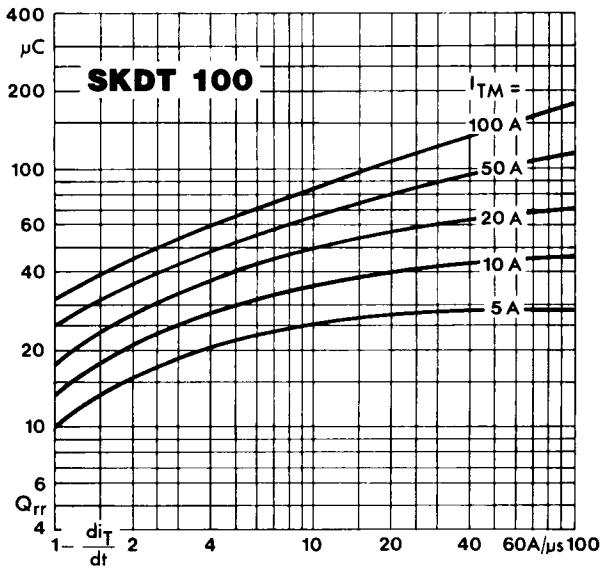


Fig. 8 b. Recovered charge vs. current decrease

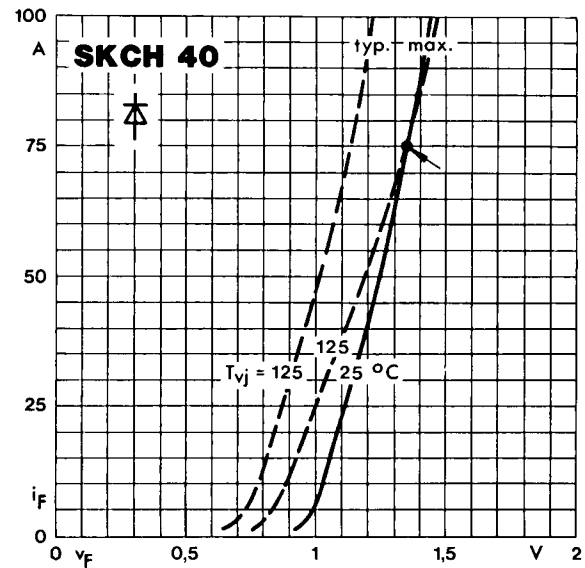


Fig. 9 Forward characteristics of a single diode

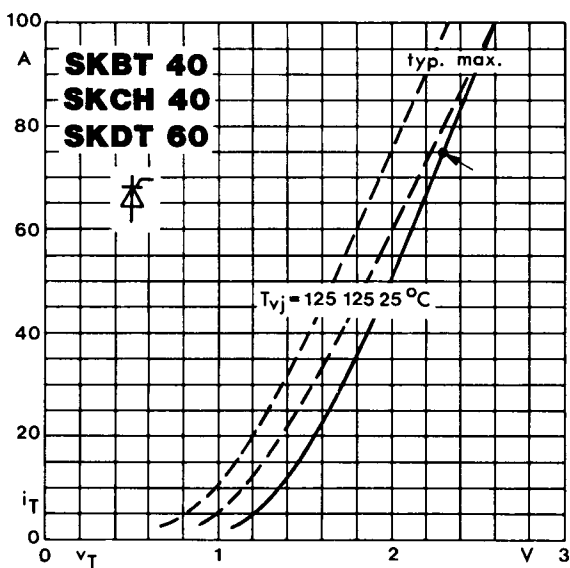


Fig. 10 a On-state characteristics of a single thyristor

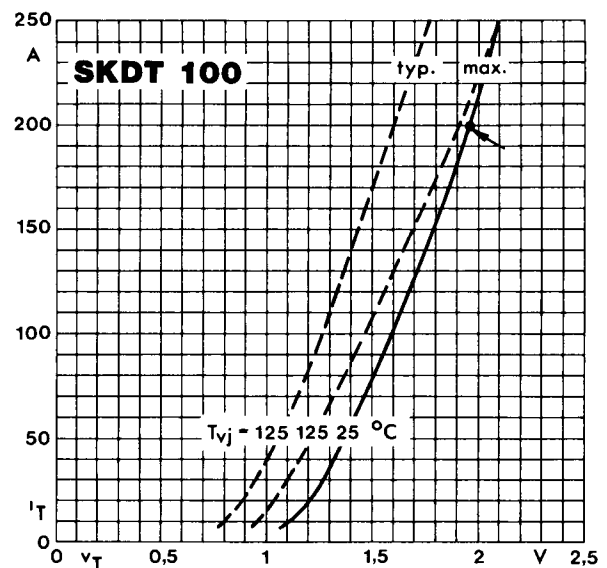


Fig. 10 b On-state characteristics of a single thyristor

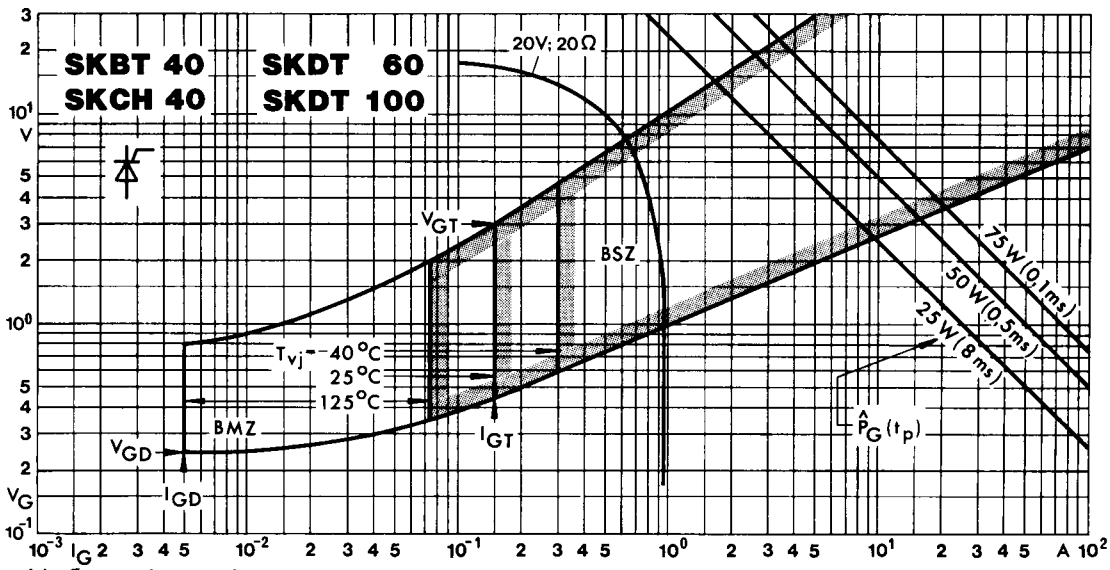


Fig. 11 Gate trigger characteristics

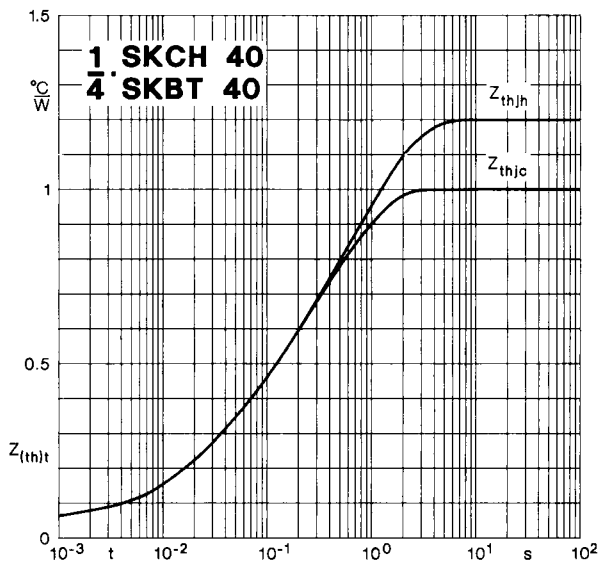


Fig. 12 a Transient thermal impedance vs. time

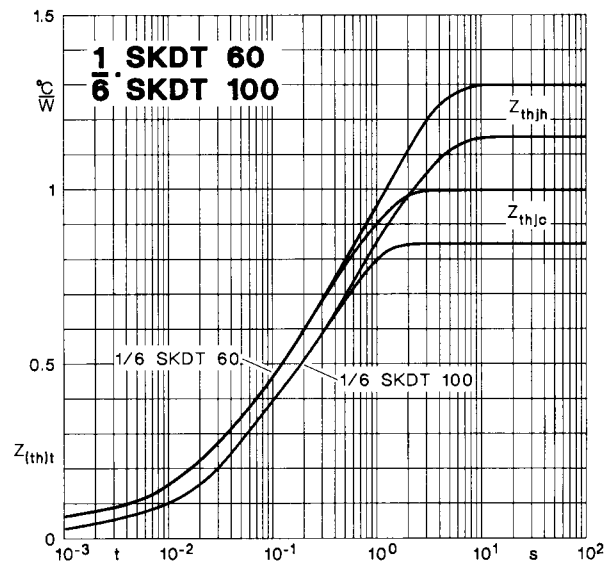
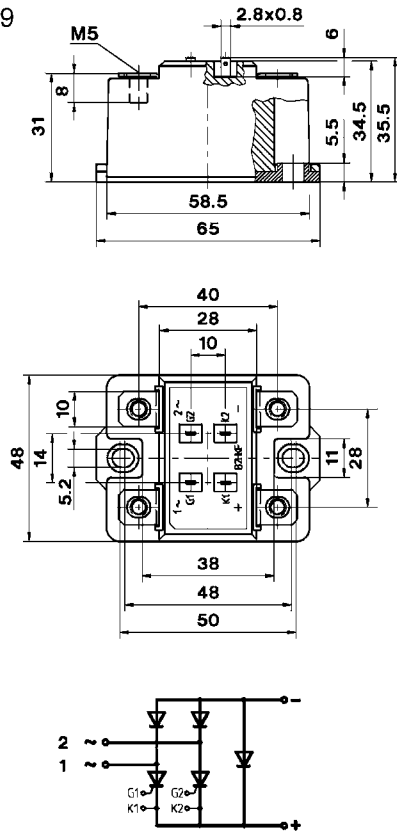


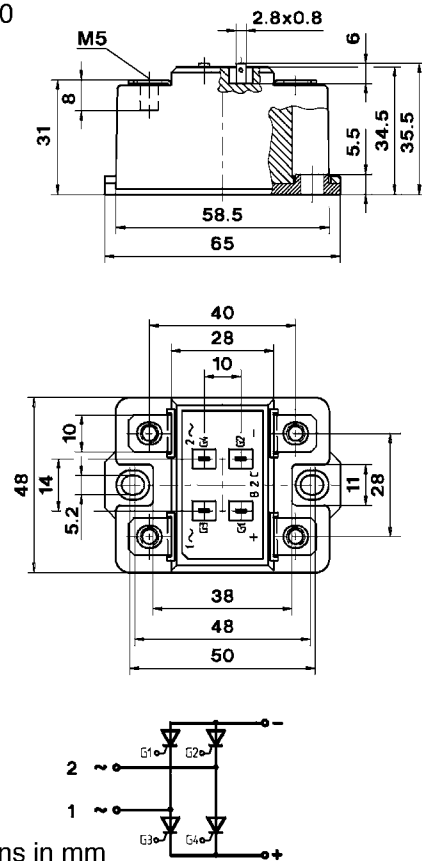
Fig. 12 b Transient thermal impedance vs. time

**SKCH 40** SEMIPONT<sup>2</sup> 2  
Case G 19



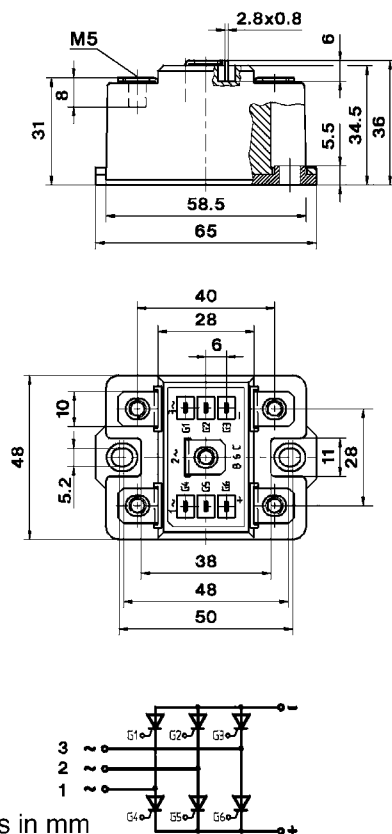
Dimensions in mm

**SKBT 40** SEMIPONT<sup>2</sup> 2  
Case G 20



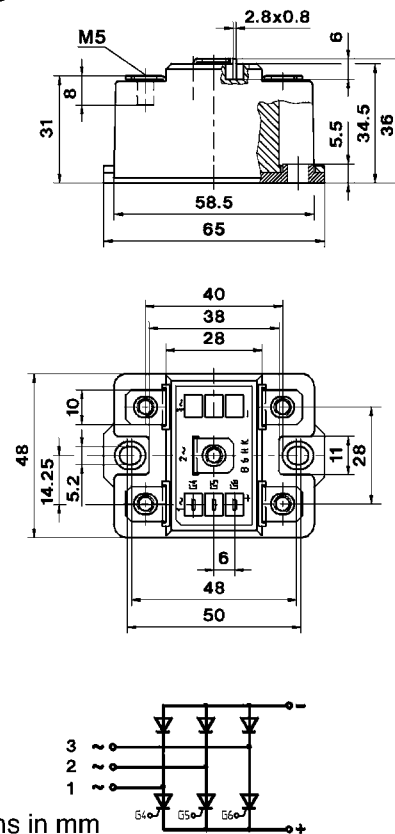
Dimensions in mm

**SKDT 60, SKDT 100** SEMIPONT<sup>2</sup> 2  
Case G 21



Dimensions in mm

**SKDH 100** SEMIPONT<sup>2</sup> 2  
Case G 53



Dimensions in mm

## Available Heatsinks

Rectifier	Heatsink	w kg	R <sub>thca</sub> natural cooling °C/W	R <sub>thca</sub> forced cooling °C/W
SKB 15	P 5A/100	0,28	1,7	–
SKB 25, SKD 25	P 5A/100	0,28	1,55	–
	R 4A/120	0,6	1,45	–
	P 1/120	1,3	0,75	–
SKBH 28, SKBT 28, SKBZ 28, SKCH 28 SKB 30, SKD 30, SKD 31	P 5A/100	0,28	1,5	–
	R 4A/120	0,6	1,4	–
	P 1/120	1,3	0,7	–
	P13A/125	0,6	1,35	–
SKB 33, SKB 50, SKD 50	P1/120	1,3	0,65	0,30
SKBT 40, SKCH 40 SKB 60, SKD 60, SKDT 60 SKB 52, SKD 62, SKB 72 SKD 82, SKD 100, SKDT 100 SKD 110, SKD 160	P 5A/100	0,28	1,45	–
	R 4A/120	0,6	1,35	–
	P 13A/125	0,6	1,30	–
	P 15/180	1,7	0,8	0,30
	P 1/120	1,3	0,65	0,20
	P 3/180	3,1	0,5	0,18
	P 1/200	2,2	0,52	0,18