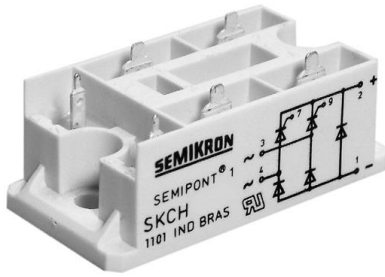


SKCH 43



SEMIPONT[®] 1

Controllable Bridge Rectifier

SKCH 43

Preliminary data

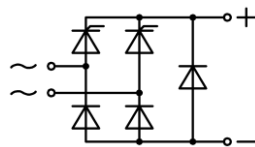
Features

- Sturdy isolated metal baseplate
- Fast-on terminals with solder tips
- Suitable for wave soldering
- High surge current rating
- Blocking voltage of 1600 V
- UL recognized plastic material

Typical Applications*

- Controllable single phase rectifier
- DC power supplies
- DC motor controllers
- DC motor field controllers

- 1) Painted metal sheet of minimum. 250 x 250 x 1 mm: $R_{th(c-a)} = 1,85 \text{ K/W}$
- 2) Freely suspended or mounted on insulator



SKCH

V_{RSM} V	V_{RRM}, V_{DRM} V	$I_D = 45 \text{ A}$ (Inductive Load) ($T_c = 85 \text{ °C}$)
800	800	SKCH 43/08
1200	1200	SKCH 43/12
1400	1400	SKCH 43/14
1600	1600	SKCH 43/16

Absolute maximum ratings

Symbol	Conditions	Values	Units
I_D	$T_c = 85 \text{ °C}$ (full conduction) $T_a = 45 \text{ °C}$, chassis ¹⁾	43 15	A A
I_{DCL}	$T_a = 45 \text{ °C}$, P1/120	32	A
I_{DD}, I_{RD}	$T_{vj} = 130 \text{ °C}$; $V_{DD} = V_{RRM}$; $V_{RD} = V_{RRM}$	max. 8	mA
T_{vj}		-40...+130	°C
T_{stg}		-55...+125	°C

Characteristics

Symbol	Conditions	Values	Units
Diode			
I_{FSM}	$T_{vj} = 25 \text{ °C}$, 10 ms	370	A
	$T_{vj} = 130 \text{ °C}$, 10 ms	320	A
i^2t	$T_{vj} = 25 \text{ °C}$, 8,3 ... 10 ms	680	A ² s
	$T_{vj} = 130 \text{ °C}$, 8,3 ... 10 ms	500	A ² s
V_F	$T_{vj} = 25 \text{ °C}$, $I_T = 75 \text{ A}$	max. 1,4	V
$V_{(TO)}$	$T_{vj} = 130 \text{ °C}$	max. 0,85	V
r_T	$T_{vj} = 130 \text{ °C}$	max. 7	mΩ
$R_{th(i-c)}$	sin.180, per diode	1,7	K/W
T_{vj}		-40...+130	°C
T_{stg}		-55...+125	°C
Thyristor			
I_{TSM}	$T_{vj} = 25 \text{ °C}$, 10 ms	450	A
	$T_{vj} = 130 \text{ °C}$, 10 ms	380	A
i^2t	$T_{vj} = 25 \text{ °C}$, 8,3 ... 10 ms	1000	A ² s
	$T_{vj} = 130 \text{ °C}$, 8,3 ... 10 ms	720	A ² s
V_T	$T_{vj} = 25 \text{ °C}$, $I_T = 75 \text{ A}$	max. 1,9	V
$V_{(TO)}$	$T_{vj} = 130 \text{ °C}$	max. 1	V
r_T	$T_{vj} = 130 \text{ °C}$	max. 10	mΩ
t_{gd}	$T_{vj} = 25 \text{ °C}$; $I_G = 1 \text{ A}$; $di_G/dt = 1 \text{ A}/\mu\text{s}$	1	μs
t_{gr}	$V_D = 0,67 \cdot V_{DRM}$	1	μs
$(dv/dt)_{cr}$	$T_{vj} = 130 \text{ °C}$	max. 1000	V/μs
$(di/dt)_{cr}$	$T_{vj} = 130 \text{ °C}$; $f = 50 \text{ Hz}$	max. 50	A/μs
t_q	$T_{vj} = 130 \text{ °C}$; typ.	80	μs
I_H	$T_{vj} = 25 \text{ °C}$; typ. / max.	80 / 150	mA
I_L	$T_{vj} = 25 \text{ °C}$; $R_G = 33 \text{ Ω}$	150 / 300	mA
V_{GT}	$T_{vj} = 25 \text{ °C}$; d.c.	min. 3	V
I_{GT}	$T_{vj} = 25 \text{ °C}$; d.c.	min. 100	mA
V_{GD}	$T_{vj} = 130 \text{ °C}$; d.c.	max. 0,25	V
I_{GD}	$T_{vj} = 130 \text{ °C}$; d.c.	max. 3	mA
$R_{th(i-c)}$	sin.180, per thyristor	1,3	K/W
T_{vj}		-40...+130	°C
T_{stg}		-55...+125	°C

SKCH 43



SEMIPONT® 1

Controllable Bridge Rectifier

SKCH 43

Preliminary data

Features

- Sturdy isolated metal baseplate
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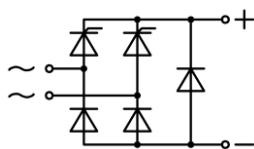
Typical Applications*

- Controllable single phase rectifier
- DC power supplies
- DC motor controllers
- DC motor field controllers

3) Painted metal sheet of minimum. 250 x 250 x 1 mm: $R_{th(c-a)} = 1,85 \text{ K/W}$

4) Freely suspended or mounted on insulator

Characteristics			
Symbol	Conditions	Values	Units
$R_{th(j-c)}$	total (sin.180, full conduction)	0,37	K/W
$R_{th(c-s)}$	total	0,1	K/W
$R_{th(i-a)}$	total ²⁾	15	K/W
T_{vj}		-40...+130	°C
T_{stg}		-55...+125	°C
V_{isol}	a.c. 50 Hz; r.m.s.; 1 s / 1 min.	3600 / (3000)	V
M_s	to heatsink M4	2	Nm
M_t	to terminal M5	3	Nm
m		66	g
Case	SKCH	G 25	



SKCH

SKCH 43

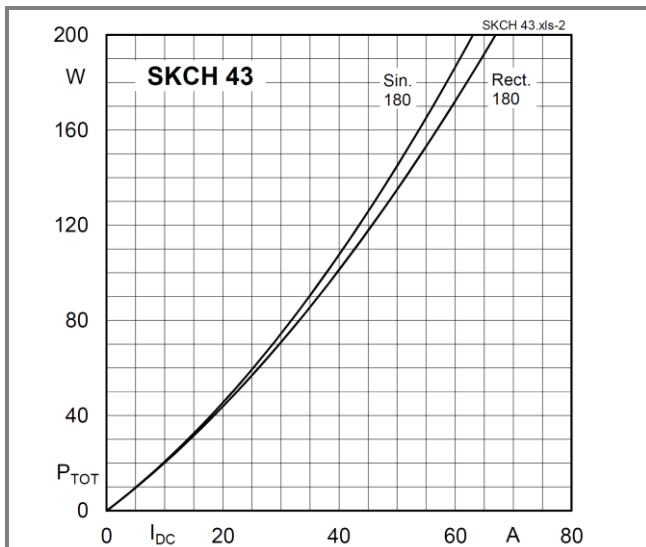


Fig. 1 Power dissipation vs. output current

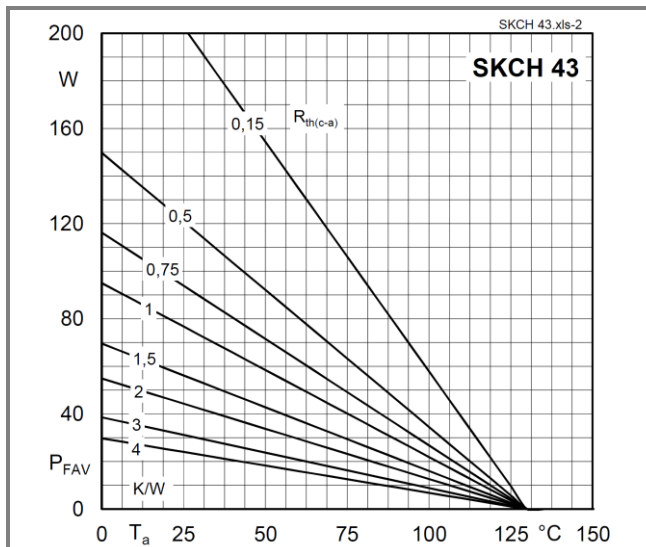


Fig. 2 Power dissipation vs. ambient temperature

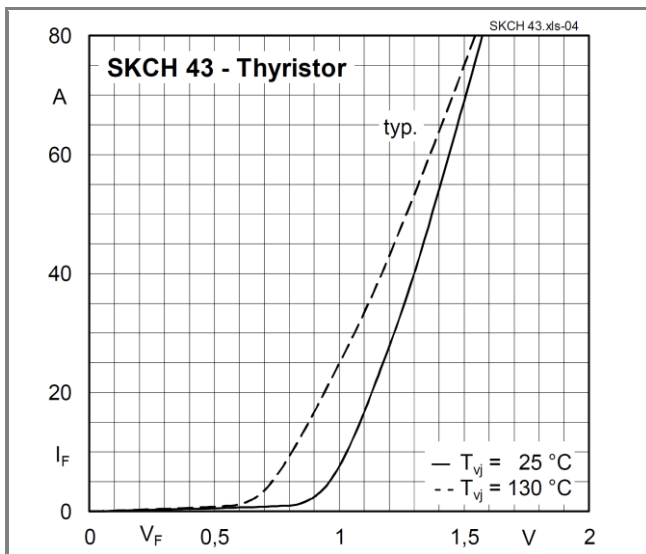


Fig. 4.a Forward characteristics of the thyristor chip

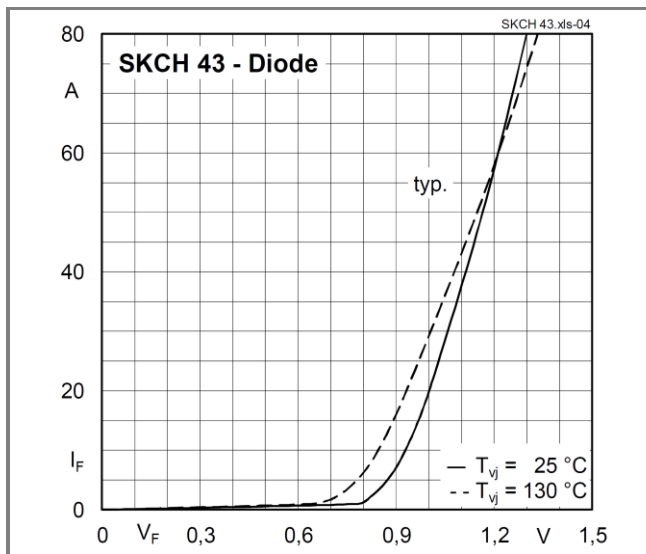


Fig. 4.b Forward characteristics of the diode chip

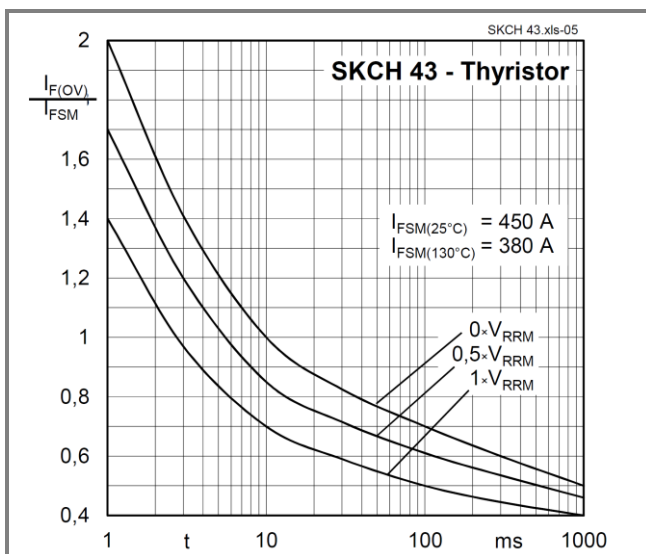


Fig. 5.a Surge overload characteristics vs. time - Thyristor

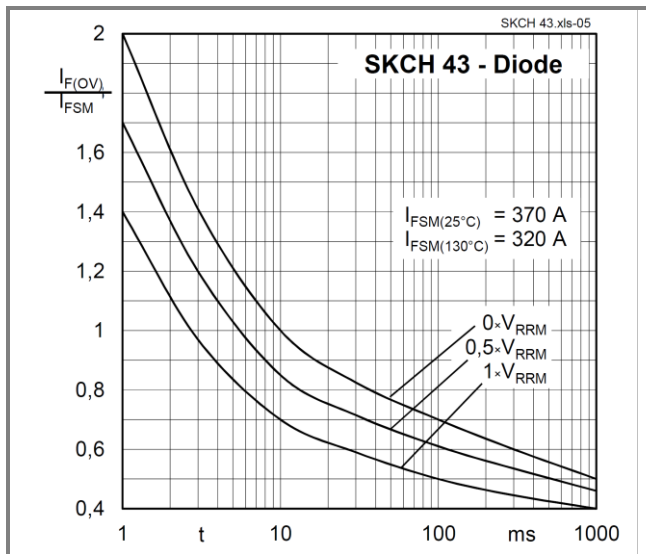


Fig. 5.b Surge overload characteristics vs. time - Diode

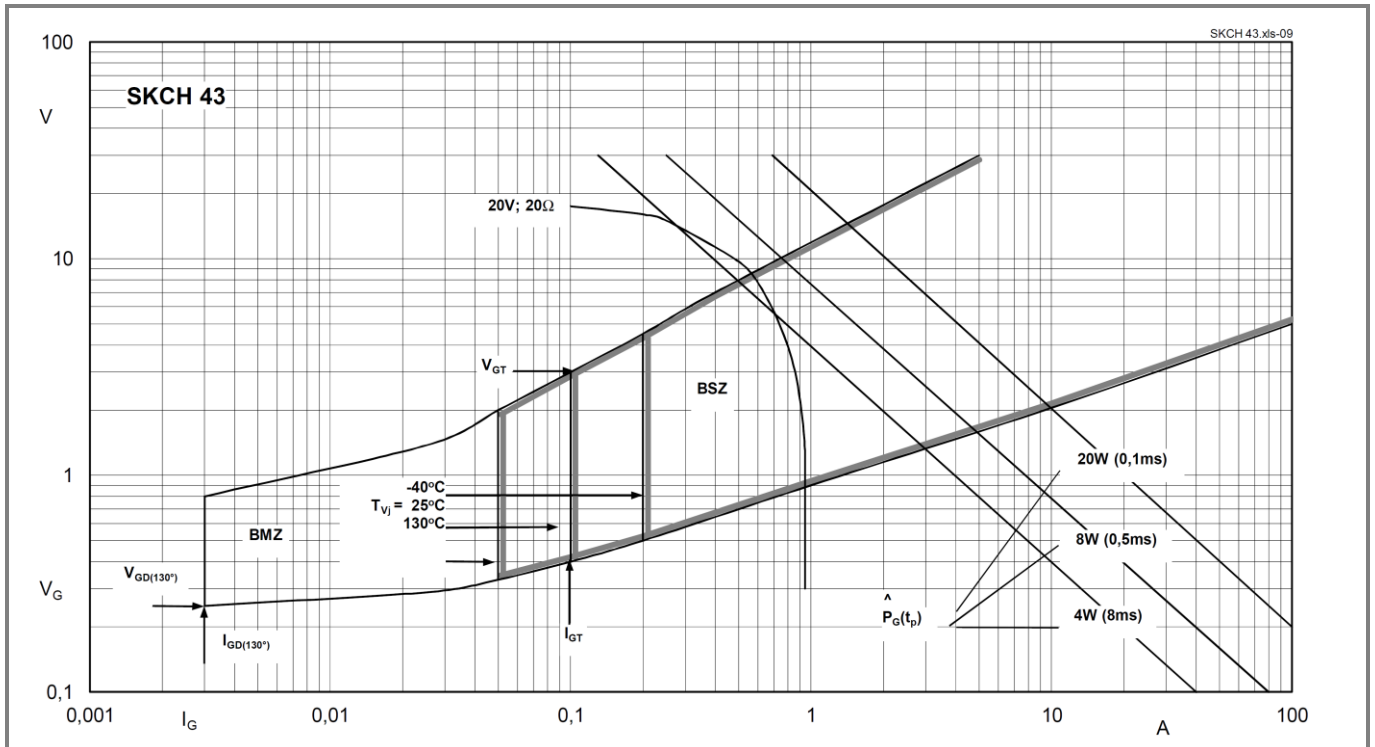
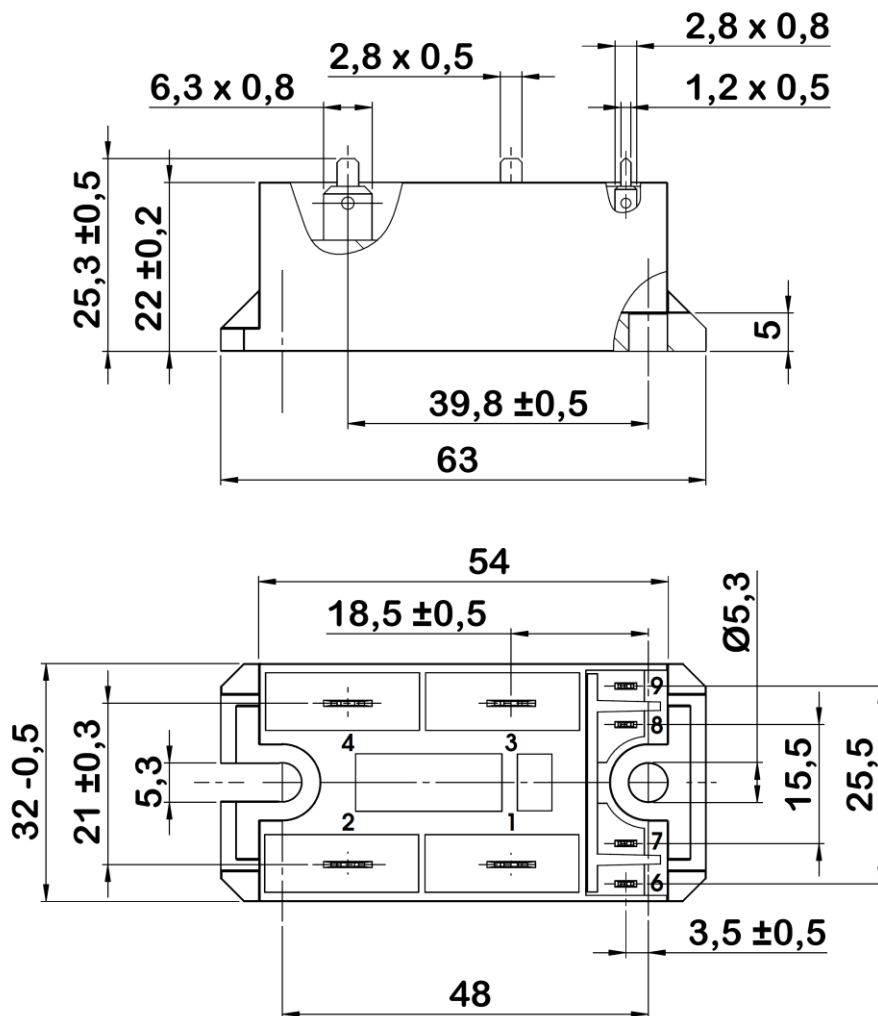


Fig. 11 Gate characteristics of a thyristor device

Dimensions in millimeters



Case G 25

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