

SKCH 40



SEMIPONT[®] 2

Controllable Bridge Rectifiers

SKCH 40

Features

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

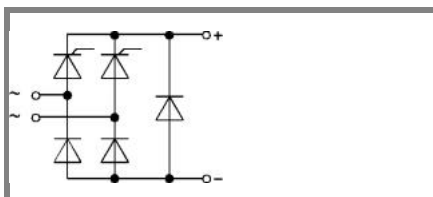
Typical Applications

- For DC drives with a fixed direction of rotation
- Controlled field rectifiers for DC motors
- Controlled battery charger rectifiers

1) Painted metal shield of minimum 250 x 250 x 1 mm: $R_{th(c-a)} = 1,8 \text{ K/W}$

V_{RSM} V	V_{RRM}, V_{DRM} V	$I_D = 40 \text{ A (full conduction)}$ ($T_c = 92 \text{ °C}$)
400	400	SKCH 40/04
800	800	SKCH 40/08
1200	1200	SKCH 40/12
1400	1400	SKCH 40/14
1600	1600	SKCH 40/16

Symbol	Conditions	Values	Units
I_D	$T_c = 85 \text{ °C}$	46	A
	$T_a = 45 \text{ °C; chassis } ^1)$	15	A
	$T_a = 45 \text{ °C; R4A/120}$	18	A
	$T_a = 45 \text{ °C; P13A/125}$	18	A
	$T_a = 45 \text{ °C; P1A/120}$	28	A
I_{TSM}, I_{FSM}	$T_{vj} = 25 \text{ °C; } 10 \text{ ms}$	470	A
	$T_{vj} = 125 \text{ °C; } 10 \text{ ms}$	400	A
i^2t	$T_{vj} = 25 \text{ °C; } 8,3 \dots 10 \text{ ms}$	1100	A ² s
	$T_{vj} = 125 \text{ °C; } 8,3 \dots 10 \text{ ms}$	800	A ² s
V_T	$T_{vj} = 25 \text{ °C; } I_T = 75 \text{ A}$	max. 2,3	V
$V_{T(TO)}$	$T_{vj} = 125 \text{ °C;}$	max. 1	V
r_T	$T_{vj} = 125 \text{ °C}$	max. 16	mΩ
I_{DD}, I_{RD}	$T_{vj} = 125 \text{ °C; } V_{DD} = V_{DRM}; V_{RD} = V_{RRM}$	max. 10	mA
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
$(dv/dt)_{cr}$	$T_{vj} = 125 \text{ °C}$	max. 500	V/μs
$(di/dt)_{cr}$	$T_{vj} = 125 \text{ °C; } f = 50 \text{ Hz}$	max. 50	A/μs
t_q	$T_{vj} = 125 \text{ °C; typ.}$	80	μs
I_H	$T_{vj} = 25 \text{ °C; typ. / max.}$	100 / 200	mA
I_L	$T_{vj} = 25 \text{ °C; } R_G = 33 \text{ }\Omega$	250 / 400	mA
V_{GT}	$T_{vj} = 25 \text{ °C; d.c.}$	min. 3	V
I_{GT}	$T_{vj} = 25 \text{ °C; d.c.}$	min. 150	mA
V_{GD}	$T_{vj} = 125 \text{ °C; d.c.}$	max. 0,25	V
I_{GD}	$T_{vj} = 125 \text{ °C; d.c.}$	max. 5	mA
$R_{th(j-c)}$	per thyristor / diode	1	K/W
	total	0,25	K/W
$R_{th(c-s)}$	total	0,05	K/W
T_{vj}		- 40 ... + 125	°C
T_{stg}		- 40 ... + 125	°C
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s / 1 min.	3600 (3000)	V
M_s	to heatsink	5	Nm
M_t	to terminals	3	Nm
m		165	g
Case	SKCH	G 19	



SKCH

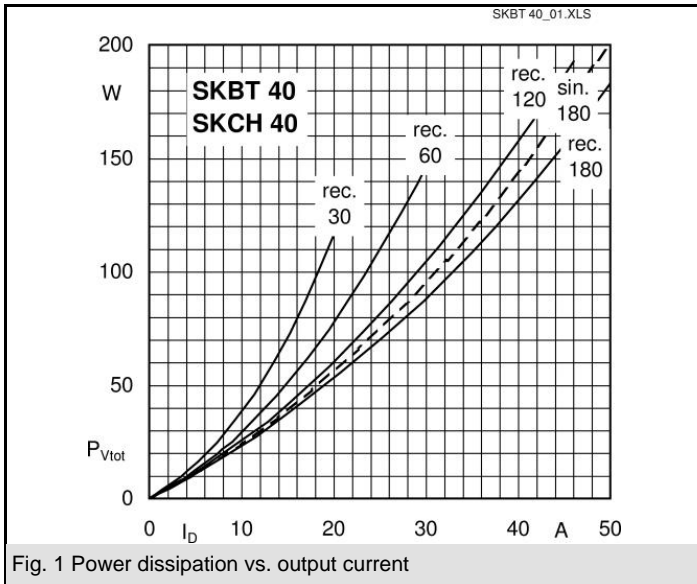


Fig. 1 Power dissipation vs. output current

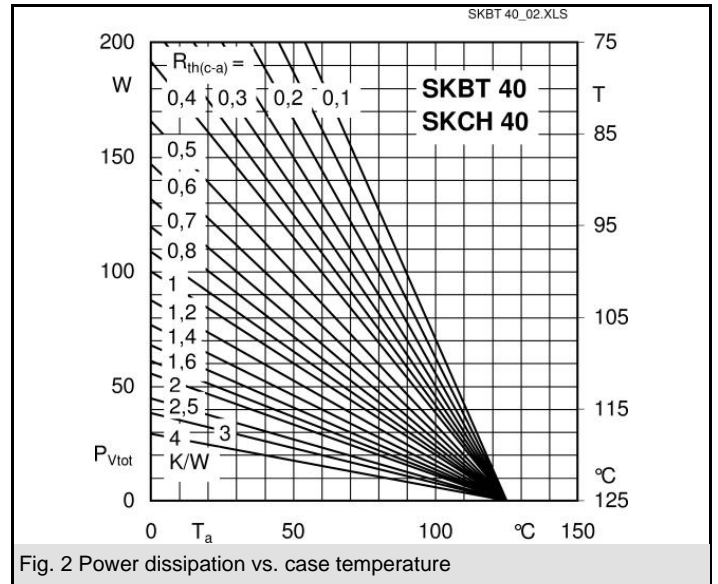


Fig. 2 Power dissipation vs. case temperature

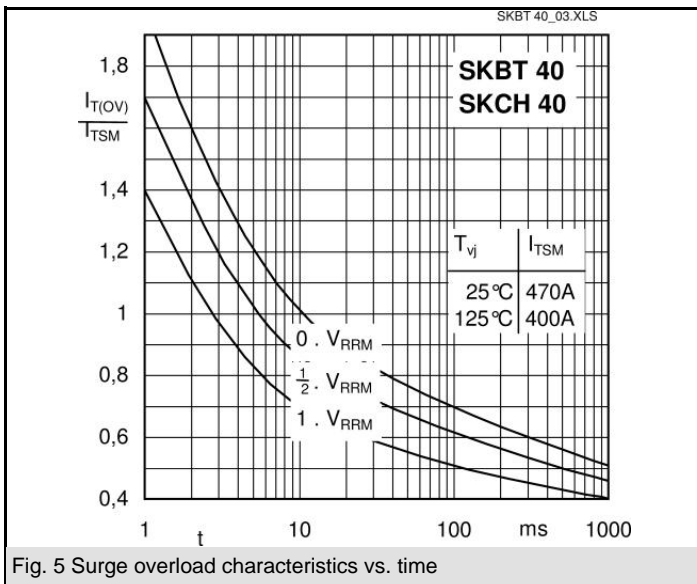


Fig. 5 Surge overload characteristics vs. time

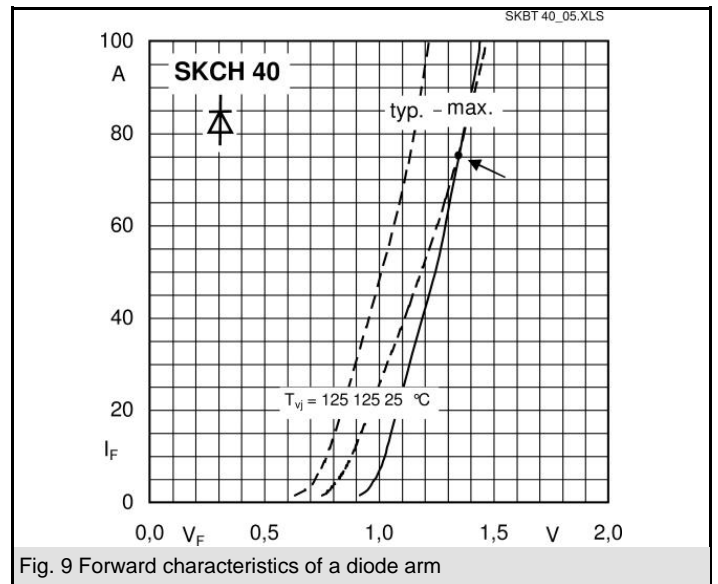


Fig. 9 Forward characteristics of a diode arm

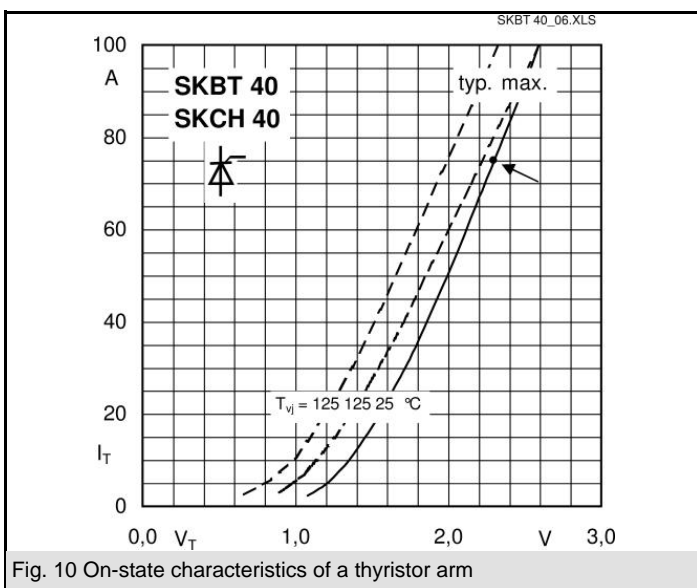


Fig. 10 On-state characteristics of a thyristor arm

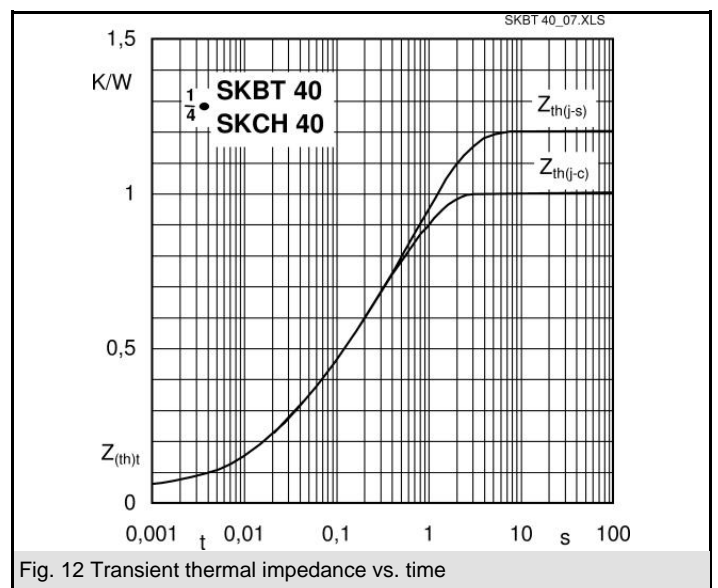


Fig. 12 Transient thermal impedance vs. time

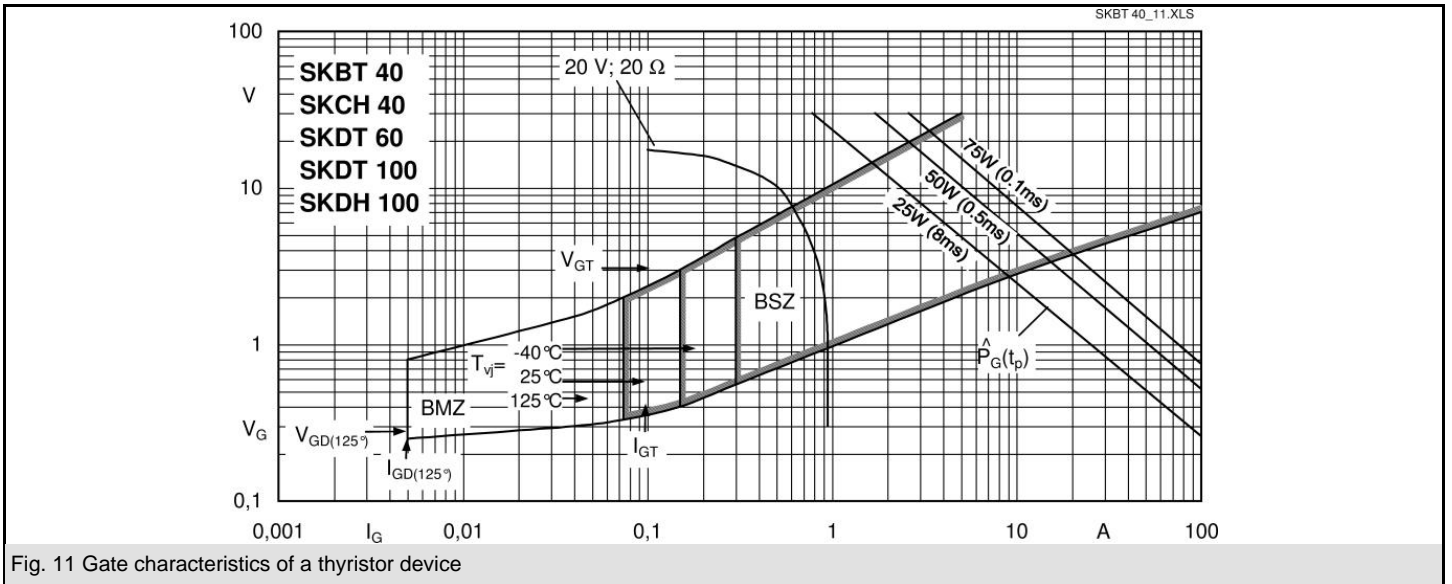
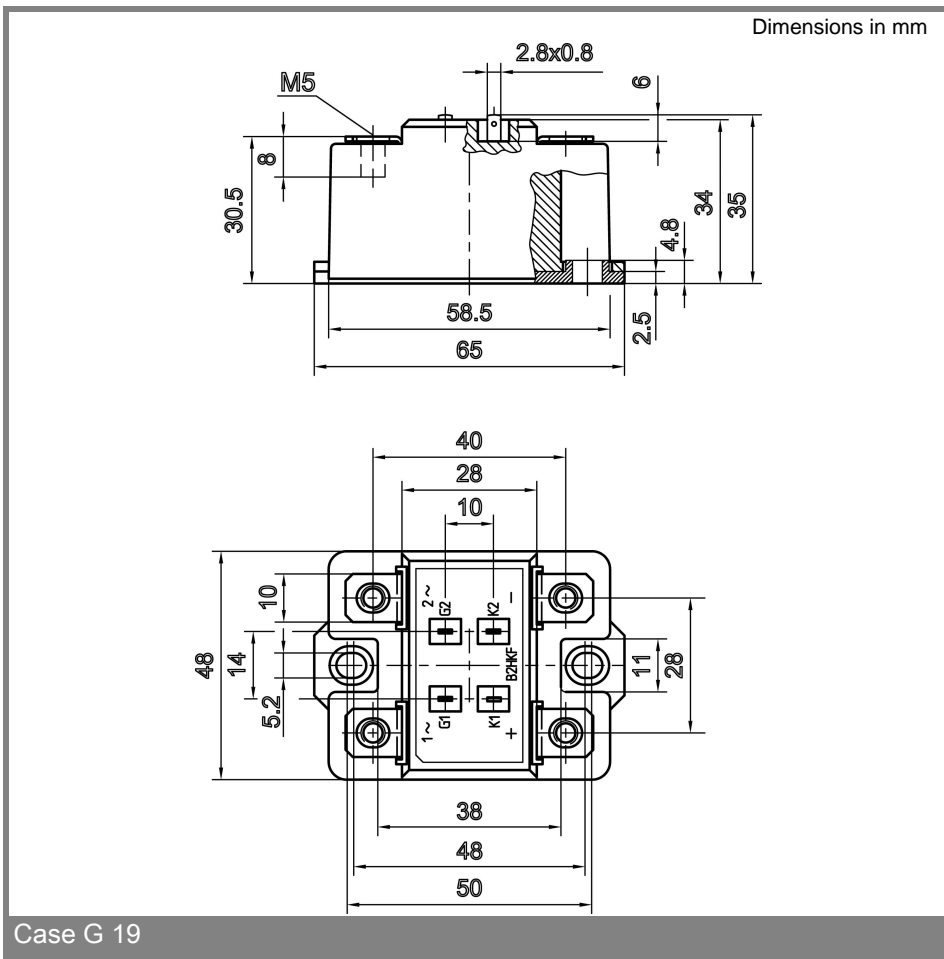


Fig. 11 Gate characteristics of a thyristor device



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